

**Supplementary materials for Foods**

**Colonized niche, evolution and function signatures of *Bifidobacterium pseudolongum* within bifidobacterial genus**

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**Running title:** Population genomics of *Bifidobacterium pseudolongum*

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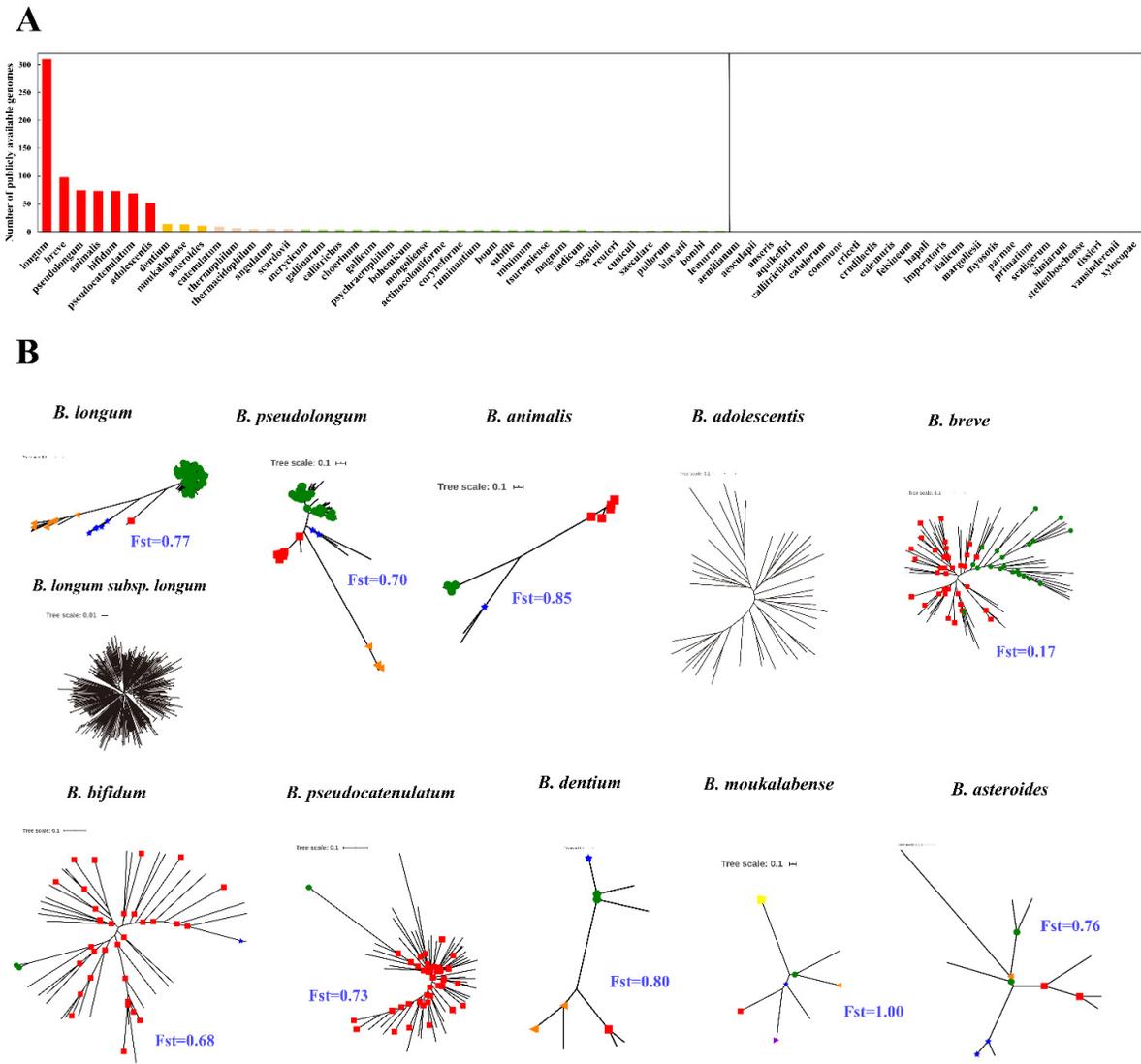
## Figure legends

**Figure S1 Numbers of publicly available genomes for each bifidobacterial species (A), and maximum likelihood (ML) of them (B).** Numbers of publicly available sequenced genomes for each *Bifidobacterium* species. Red, more than 50 genome assemblies; light orange, more than 10; light pink, more than 5; green, more than 1. Species in the right section behind the perpendicular line were without sequenced genomes in the NCBI database.

**Figure S2 Niche distribution along the phylogenetic tree (NJ tree) for *B. pseudolongum* (A) and *B. animalis* (B).**

**Figure S3 Phylogenetic tree (NJ tree) of genus *Bifidobacterium* with the bootstrap values of the clades indicated.** Bootstrap of 100 was set for tree construction.

Figure S1







**Table S1 The information on genome assemblies used in the study**

| Organism/Name  | Strain          | BioSample    | Size (Mb) | GC%  | Proteins | Genome ID                                  |
|--|-----------------|--------------|-----------|------|----------|--|
| <i>Bifidobacterium actinocoloniiforme</i><br>DSM 22766 | DSM 22766       | SAMN02673422 | 1.82339   | 62.7 | 1417     | GCF_000741095.1_Bifact_genomic.fna         |
| <i>Bifidobacterium actinocoloniiforme</i><br>DSM 22766 | DSM 22766       | SAMN02442035 | 1.81848   | 62.7 | 1407     | GCF_000771585.1_DSM-22766_genomic.fna      |
| <i>Bifidobacterium actinocoloniiforme</i><br>DSM 22766 | DSM 22766       | SAMN02442035 | 1.83006   | 62.7 | 1422     | GCF_001263395.1_ASM126339v1_genomic.fna    |
| <i>Bifidobacterium adolescentis</i>                    | AF45-19         | SAMN09734719 | 2.24738   | 59.5 | 1432     | GCA_003473345.1_ASM347334v1_genomic.fna    |
| <i>Bifidobacterium adolescentis</i>                    | UBA2084         | SAMN06457481 | 1.54188   | 58.6 | -        | GCA_002331865.1_ASM233186v1_genomic.fna    |
| <i>Bifidobacterium adolescentis</i>                    | 22L             | SAMN02673695 | 2.20322   | 59.3 | 1713     | GCF_000737885.1_ASM73788v1_genomic.fna     |
| <i>Bifidobacterium adolescentis</i>                    | BBMN23          | SAMN03273368 | 2.17372   | 59.3 | 1696     | GCF_000817995.1_ASM81799v1_genomic.fna     |
| <i>Bifidobacterium adolescentis</i>                    | IVS-1           | SAMN03076346 | 2.26346   | 59.6 | 1629     | GCF_000829865.1_ASM82986v1_genomic.fna     |
| <i>Bifidobacterium adolescentis</i>                    | 150             | SAMN03468113 | 2.31566   | 59.4 | 1844     | GCF_001010915.1_ASM101091v1_genomic.fna    |
| <i>Bifidobacterium adolescentis</i>                    | 2789STDY5834850 | SAMEA3545316 | 2.23413   | 59.4 | 1749     | GCF_001406215.1_13470_2_69_genomic.fna     |
| <i>Bifidobacterium adolescentis</i>                    | 2789STDY5608824 | SAMEA3545233 | 2.31205   | 59.4 | 1862     | GCF_001406455.1_13414_6_8_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                    | 2789STDY5608862 | SAMEA3545270 | 2.25908   | 59.3 | 1743     | GCF_001406735.1_13414_6_46_genomic.fna     |
| <i>Bifidobacterium adolescentis</i>                    | Km 4            | SAMN05300513 | 2.42497   | 59.8 | 1931     | GCF_001756865.1_ASM175686v1_genomic.fna    |
| <i>Bifidobacterium adolescentis</i>                    | 1892B           | SAMN06621712 | 2.15085   | 59.4 | 1678     | GCF_002075965.1_Bbif1892B_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                    | 42B             | SAMN04231308 | 2.21274   | 59.2 | 1752     | GCF_002107925.1_Bado42Bv1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                    | 70B             | SAMN04231309 | 2.21213   | 58.8 | 1712     | GCF_002107955.1_Bado70Bv1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                    | AL12-4          | SAMN04231313 | 2.09491   | 59.4 | 1632     | GCF_002107975.1_BadoAL124v1_genomic.fna    |
| <i>Bifidobacterium adolescentis</i>                    | LMG 10734       | SAMN04231317 | 2.14863   | 59.2 | 1621     | GCF_002107995.1_BadoLMG10734v1_genomic.fna |
| <i>Bifidobacterium adolescentis</i>                    | 487B            | SAMN04231310 | 2.59778   | 59.1 | 2139     | GCF_002108015.1_Bado487Bv1_genomic.fna     |
| <i>Bifidobacterium adolescentis</i>                    | 703B            | SAMN04231311 | 2.37281   | 59.3 | 1932     | GCF_002108035.1_Bado703Bv1_genomic.fna     |
| <i>Bifidobacterium adolescentis</i>                    | AD2-8           | SAMN04231312 | 2.37972   | 59.9 | 1920     | GCF_002108045.1_BadoAD28v1_genomic.fna     |
| <i>Bifidobacterium adolescentis</i>                    | AL46-2          | SAMN04231314 | 2.20856   | 59.5 | 1697     | GCF_002108075.1_BadoAL462v1_genomic.fna    |
| <i>Bifidobacterium adolescentis</i>                    | AL46-7          | SAMN04231315 | 2.20303   | 59.1 | 1736     | GCF_002108095.1_BadoAD467v1_genomic.fna    |

|   |                   |                     |                |             |             |  |
|---|-------------------|---------------------|----------------|-------------|-------------|--|
| <i>Bifidobacterium adolescentis</i>                             | LMG 10733         | SAMN04231316        | 2.08423        | 59.2        | 1599        | GCF_002108135.1_BadoLMG10733v1_genomic.fna   |
| <i>Bifidobacterium adolescentis</i>                             | LMG 11579         | SAMN04231318        | 2.06169        | 59.4        | 1562        | GCF_002108155.1_BadoLMG11579v1_genomic.fna   |
| <i>Bifidobacterium adolescentis</i>                             | LMG 18897         | SAMN04231319        | 2.14679        | 59.8        | 1681        | GCF_002108165.1_BadoLMG188971_genomic.fna    |
| <i>Bifidobacterium adolescentis</i>                             | 43476             | SAMN08770276        | 2.19243        | 59.6        | 1747        | GCF_003030905.1_ASM303090v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | 6                 | SAMN07551488        | 2.20181        | 59.3        | 1716        | GCF_003429385.1_ASM342938v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | TM06-4            | SAMN09736994        | 2.15038        | 59.1        | 1672        | GCF_003436185.1_ASM343618v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | TF06-2AC          | SAMN09736894        | 2.26572        | 59.6        | 1828        | GCF_003437735.1_ASM343773v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | TF06-29           | SAMN09736893        | 2.16352        | 59.2        | 1731        | GCF_003437755.1_ASM343775v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | TF06-10AC         | SAMN09736887        | 2.16249        | 59.2        | 1725        | GCF_003437775.1_ASM343777v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | AF28-4AC          | SAMN09734547        | 2.14198        | 59.2        | 1680        | GCF_003457765.1_ASM345776v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | AF21-27           | SAMN09734426        | 2.27784        | 59.4        | 1819        | GCF_003458805.1_ASM345880v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | OF04-5            | SAMN09736710        | 2.14192        | 59.2        | 1677        | GCF_003462885.1_ASM346288v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | OF04-9AC          | SAMN09736711        | 2.14218        | 59.2        | 1680        | GCF_003462895.1_ASM346289v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | AF15-3            | SAMN09734284        | 2.19712        | 59.4        | 1721        | GCF_003464325.1_ASM346432v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | AF14-56           | SAMN09734269        | 2.25699        | 59.5        | 1800        | GCF_003465205.1_ASM346520v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | TM06-51           | SAMN09736997        | 2.22524        | 59.2        | 1758        | GCF_003466335.1_ASM346633v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | AM41-17           | SAMN09736531        | 2.09457        | 59.2        | 1625        | GCF_003467335.1_ASM346733v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | AM36-3AC          | SAMN09736483        | 2.21547        | 59.2        | 1727        | GCF_003468385.1_ASM346838v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | AM34-11           | SAMN09736459        | 2.17339        | 59.3        | 1686        | GCF_003469145.1_ASM346914v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | AM14-37           | SAMN09734811        | 2.19316        | 59.1        | 1721        | GCF_003472095.1_ASM347209v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | AM12-59           | SAMN09734791        | 2.28883        | 59.2        | 1779        | GCF_003472245.1_ASM347224v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | AM12-20           | SAMN09734786        | 2.29387        | 59.3        | 1794        | GCF_003472265.1_ASM347226v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | AM13-11           | SAMN09734794        | 2.26324        | 59.4        | 1847        | GCF_003473105.1_ASM347310v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | P2P3              | SAMN08093360        | 2.20298        | 59.4        | 1718        | GCF_003856735.1_ASM385673v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | ca_0067           | SAMN10239583        | 2.1492         | 59.5        | 1684        | GCF_004167585.1_ASM416758v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | 1001271st1_A4     | SAMN10863259        | 2.25153        | 59.3        | -           | GCF_005845205.1_ASM584520v1_genomic.fna      |
| <i>Bifidobacterium adolescentis</i>                             | NCTC11814         | SAMEA4362428        | 2.20499        | 59.2        | 1661        | GCF_900445615.1_49964_F01_genomic.fna        |
| <b><i>Bifidobacterium adolescentis</i></b><br><b>ATCC 15703</b> | <b>ATCC 15703</b> | <b>SAMD00061080</b> | <b>2.08964</b> | <b>59.2</b> | <b>1624</b> | <b>GCF_000010425.1_ASM1042v1_genomic.fna</b> |

|  |                     |               |         |      |      |  |
|--|---------------------|---------------|---------|------|------|--|
| <i>Bifidobacterium adolescentis</i> DSM 20087          | DSM 20087           | SAMN02841222  | 2.05115 | 59.4 | 1586 | GCF_000702865.1_ASM70286v1_genomic.fna     |
| <i>Bifidobacterium adolescentis</i> L2-32              | L2-32               | SAMN00627056  | 2.38911 | 59.3 | 1906 | GCF_000154085.1_ASM15408v1_genomic.fna     |
| <i>Bifidobacterium angulatum</i>                       | LMG 11039           | SAMN02673423  | 2.00381 | 59.4 | 1498 | GCF_000741065.1_Bifang_genomic.fna         |
| <i>Bifidobacterium angulatum</i>                       | GT102               | SAMN03435124  | 2.06464 | 59.3 | 1574 | GCF_000966445.2_ASM96644v2_genomic.fna     |
| <i>Bifidobacterium angulatum</i> DSM 20098 = JCM 7096  | DSM 20098           | SAMN00008777  | 2.00821 | 59.4 | 1526 | GCF_000156635.1_ASM15663v1_genomic.fna     |
| <i>Bifidobacterium angulatum</i> DSM 20098 = JCM 7096  | DSM 20098           | SAMN02442016  | 1.99378 | 59.4 | 1516 | GCF_000771205.1_DSM-20098_genomic.fna      |
| <i>Bifidobacterium angulatum</i> DSM 20098 = JCM 7096  | JCM 7096            | SAMD00061039  | 2.02197 | 59.4 | 1520 | GCF_001025155.1_ASM102515v1_genomic.fna    |
| <i>Bifidobacterium animalis</i>                        | RH                  | SAMN02797738  | 1.93106 | 60.5 | 1576 | GCF_000695895.1_ASM69589v1_genomic.fna     |
| <i>Bifidobacterium animalis</i>                        | A6                  | SAMN03273367  | 1.95865 | 60.5 | 1584 | GCF_000817045.1_ASM81704v1_genomic.fna     |
| <i>Bifidobacterium animalis</i>                        | BL3                 | SAMN05631165  | 1.94432 | 60.5 | 1572 | GCF_002220485.1_ASM222048v1_genomic.fna    |
| <i>Bifidobacterium animalis</i>                        | DS15_2              | SAMN06464093  | 1.91929 | 60.5 | 1570 | GCF_003094875.1_ASM309487v1_genomic.fna    |
| <i>Bifidobacterium animalis</i>                        | DS11_2              | SAMN06464092  | 1.9205  | 60.5 | 1574 | GCF_003094895.1_ASM309489v1_genomic.fna    |
| <i>Bifidobacterium animalis</i>                        | DS20_2              | SAMN06464095  | 1.9289  | 60.4 | 1584 | GCF_003095055.1_ASM309505v1_genomic.fna    |
| <i>Bifidobacterium animalis</i>                        | DS2_2               | SAMN06464094  | 1.91686 | 60.5 | 1567 | GCF_003095075.1_ASM309507v1_genomic.fna    |
| <i>Bifidobacterium animalis</i>                        | DS1_2               | SAMN06464091  | 1.92058 | 60.5 | 1576 | GCF_003095115.1_ASM309511v1_genomic.fna    |
| <i>Bifidobacterium animalis</i>                        | TF04-14             | SAMN09736869  | 1.91757 | 60.5 | 1573 | GCF_003438565.1_ASM343856v1_genomic.fna    |
| <i>Bifidobacterium animalis</i>                        | OM05-7AA            | SAMN09736809  | 1.91678 | 60.5 | 1567 | GCF_003438945.1_ASM343894v1_genomic.fna    |
| <i>Bifidobacterium animalis</i>                        | 1                   | SAMN10817706  | 1.93163 | 60.5 | 1569 | GCF_004135895.1_ASM413589v1_genomic.fna    |
| <i>Bifidobacterium animalis</i>                        | co_0103             | SAMN10239584  | 1.92019 | 60.4 | 1574 | GCF_004167905.1_ASM416790v1_genomic.fna    |
| <i>Bifidobacterium animalis</i>                        | BSD2780061688st1_E5 | SAMN10863267  | 1.9192  | 60.4 | -    | GCF_005844245.1_ASM584424v1_genomic.fna    |
| <i>Bifidobacterium animalis</i>                        | Bifido_08           | SAMEA51820918 | 1.95436 | 60.4 | 1583 | GCF_900157045.1_Bifido_08_v1_genomic.fna   |
| <i>Bifidobacterium animalis</i>                        | Bifido_11           | SAMEA51823168 | 1.93843 | 60.4 | 1582 | GCF_900157135.1_Bifido_11_v1_genomic.fna   |
| <i>Bifidobacterium animalis</i> subsp. <i>animalis</i> | 2022B               | SAMN10459546  | 2.40519 | 60.1 | 1933 | GCA_004154635.1_ASM415463v1_genomic.fna    |
| <i>Bifidobacterium animalis</i> subsp. <i>animalis</i> | LMG 10508           | SAMN02673424  | 1.91501 | 60.5 | 1454 | GCF_000741485.1_Bifani_sub.ani_genomic.fna |

|   |               |              |         |      |      |   |
|---|---------------|--------------|---------|------|------|---|
| <i>Bifidobacterium animalis</i> subsp. <i>animalis</i>            | YL2           | SAMN04621611 | 2.02737 | 60.2 | 1566 | GCF_001688645.2_ASM168864v2_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>animalis</i>            | YL2           | SAMN03854118 | 2.02193 | 60.2 | 1565 | GCF_002221565.2_ASM222156v2_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>animalis</i>            | CNCM I-4602   | SAMN08774047 | 1.93269 | 60.5 | 1486 | GCF_003671995.1_ASM367199v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>animalis</i>            | 2006B         | SAMN10459547 | 2.16359 | 60.3 | 1685 | GCF_004154625.1_ASM415462v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>animalis</i> ATCC 25527 | ATCC 25527    | SAMN02603717 | 1.93269 | 60.5 | 1483 | GCF_000260715.1_ASM26071v1_genomic.fna  |
| <i>Bifidobacterium animalis</i> subsp. <i>animalis</i> ATCC 27672 | ATCC 27672    | SAMN03978812 | 1.99016 | 60.1 | 1530 | GCF_001264055.1_ASM126405v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>animalis</i> IM386      | IM386         | SAMEA3158463 | 1.92569 | 60.5 | 1471 | GCF_001039715.1_BAN2_genomic.fna        |
| <i>Bifidobacterium animalis</i> subsp. <i>animalis</i> MCC 0483   | MCC 0483      | SAMN03978806 | 2.17604 | 60.1 | 1750 | GCF_001263945.1_ASM126394v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>animalis</i> MCC 0499   | MCC 0499      | SAMN03978809 | 2.13378 | 60.2 | 1721 | GCF_001263865.1_ASM126386v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>animalis</i> MCC 1489   | MCC 1489      | SAMN03978810 | 1.90992 | 60.5 | 1484 | GCF_001263835.1_ASM126383v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i>              | BF052         | SAMN02941905 | 1.93862 | 60.5 | 1576 | GCF_000818055.1_ASM81805v1_genomic.fna  |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i>              | 646           | SAMN05916063 | 1.92329 | 60.5 | 1533 | GCF_001892925.1_ASM189292v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i>              | BM 25         | SAMN08107561 | 1.91906 | 60.5 | 1446 | GCF_002803775.1_ASM280377v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i>              | LMG P-17502_1 | SAMN07187788 | 1.91729 | 60.5 | 1573 | GCF_002914815.1_ASM291481v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i>              | LMG P-17502_2 | SAMN07187789 | 1.91649 | 60.5 | 1571 | GCF_002914895.1_ASM291489v1_genomic.fna |

|  |          |              |         |      |      |   |
|--|----------|--------------|---------|------|------|---|
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> | DS27_2   | SAMN08948999 | 1.92047 | 60.5 | 1572 | GCF_003094775.1_ASM309477v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> | DS24_2   | SAMN08948998 | 1.92495 | 60.5 | 1573 | GCF_003094815.1_ASM309481v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> | DS23_2   | SAMN08948997 | 1.93413 | 60.5 | 1588 | GCF_003094835.1_ASM309483v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> | CF3_2    | SAMN08948996 | 1.97324 | 60.6 | 1600 | GCF_003094915.1_ASM309491v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> | DS28_2   | SAMN08949000 | 1.9188  | 60.5 | 1567 | GCF_003095015.1_ASM309501v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> | S7       | SAMN07488464 | 1.94407 | 60.5 | 1542 | GCF_003390755.1_ASM339075v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> | IDCC4301 | SAMN09858435 | 1.94414 | 60.5 | 1580 | GCF_003428375.1_ASM342837v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> | HN019    | SAMN09684768 | 1.93542 | 60.5 | 1571 | GCF_003606305.1_ASM360630v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> | UBBLa 70 | SAMN10516502 | 1.94438 | 60   | 1582 | GCF_003970855.1_ASM397085v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> | 2010B    | SAMN10459559 | 1.98248 | 60.3 | 1565 | GCF_004154425.1_ASM415442v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> | 1821B    | SAMN10459555 | 2.00272 | 59.8 | 1639 | GCF_004154435.1_ASM415443v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> | 1869B    | SAMN10459557 | 1.91942 | 60.5 | 1573 | GCF_004154445.1_ASM415444v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> | 2011B    | SAMN10459560 | 2.08307 | 60.4 | 1660 | GCF_004154455.1_ASM415445v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> | 1843B    | SAMN10459556 | 1.91921 | 60.5 | 1574 | GCF_004154475.1_ASM415447v1_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> | 1813B    | SAMN10459554 | 1.91895 | 60.5 | 1574 | GCF_004154525.1_ASM415452v1_genomic.fna |

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| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i>              | 1811B        | SAMN10459553        | 1.92261        | 60.5        | 1573        | GCF_004154535.1_ASM415453v1_genomic.fna      |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i>              | 1808B        | SAMN10459552        | 1.9194         | 60.5        | 1573        | GCF_004154545.1_ASM415454v1_genomic.fna      |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i>              | 1528B        | SAMN10459550        | 1.95396        | 60.6        | 1575        | GCF_004154555.1_ASM415455v1_genomic.fna      |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i>              | 1316B        | SAMN10459548        | 1.91921        | 60.5        | 1573        | GCF_004154565.1_ASM415456v1_genomic.fna      |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i>              | 2007B        | SAMN10459558        | 1.97319        | 60.4        | 1555        | GCF_004154645.1_ASM415464v1_genomic.fna      |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i>              | 1802B        | SAMN10459551        | 1.91948        | 60.5        | 1573        | GCF_004154655.1_ASM415465v1_genomic.fna      |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i>              | 1395B        | SAMN10459549        | 1.91894        | 60.5        | 1574        | GCF_004154695.1_ASM415469v1_genomic.fna      |
| <b><i>Bifidobacterium animalis</i> subsp. <i>lactis</i> AD011</b> | <b>AD011</b> | <b>SAMN02603485</b> | <b>1.93369</b> | <b>60.5</b> | <b>1551</b> | <b>GCF_000021425.1_ASM2142v1_genomic.fna</b> |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> ATCC 27536   | ATCC 27536   | SAMN03978807        | 1.91245        | 60.5        | 1569        | GCF_001263975.1_ASM126397v1_genomic.fna      |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> ATCC 27673   | ATCC 27673   | SAMN02603715        | 1.96301        | 60.6        | 1523        | GCF_000471945.1_ASM47194v1_genomic.fna       |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> ATCC 27673   | ATCC 27673   | SAMN03978811        | 1.93714        | 60.6        | 1560        | GCF_001264015.1_ASM126401v1_genomic.fna      |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> ATCC 27674   | ATCC 27674   | SAMN03978808        | 1.91238        | 60.5        | 1569        | GCF_001263985.1_ASM126398v1_genomic.fna      |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> B420         | B420         | SAMN02603214        | 1.9386         | 60.5        | 1538        | GCF_000277325.1_ASM27732v1_genomic.fna       |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> BB-12        | BB-12        | SAMN07981101        | 1.99659        | 59.6        | 1495        | GCA_002762435.1_ASM276243v1_genomic.fna      |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> BB-12        | BB-12        | SAMN02603131        | 1.9422         | 60.5        | 1563        | GCF_000025245.1_ASM2524v1_genomic.fna        |

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|--|--------------------|--------------|---------|------|------|--|
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> Bi-07       | Bi-07              | SAMN02603215 | 1.93882 | 60.5 | 1538 | GCF_000277345.1_ASM27734v1_genomic.fna     |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> BI-04       | BI-04; ATCC SD5219 | SAMN02603172 | 1.93871 | 60.5 | 1575 | GCF_000022705.1_ASM2270v1_genomic.fna      |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> B112        | B112               | SAMN02604238 | 1.93861 | 60.5 | 1574 | GCF_000414215.1_ASM41421v1_genomic.fna     |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> BLC1        | BLC1               | SAMN02604239 | 1.93858 | 60.5 | 1578 | GCF_000224965.2_ASM22496v2_genomic.fna     |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> BS 01       | BS 01              | SAMN00764905 | 1.9326  | 60.5 | 1571 | GCF_000240765.1_BifAniBS01_1.0_genomic.fna |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> CECT 8145   | CECT 8145          | SAMEA3138972 | 1.95989 | 60.4 | 1569 | GCF_000612705.1_CECT8145_genomic.fna       |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> CNCM I-2494 | CNCM I-2494        | SAMN02604350 | 1.94311 | 60.5 | 1576 | GCF_000220885.1_ASM22088v1_genomic.fna     |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> DSM 10140   | DSM 10140          | SAMN02603171 | 1.93848 | 60.5 | 1566 | GCF_000022965.1_ASM2296v1_genomic.fna      |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> HN019       | HN019              | SAMN02469791 | 1.91589 | 60.5 | 1563 | GCF_000172535.1_Blac_1.0_genomic.fna       |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> KLDS2.0603  | KLDS2.0603         | SAMN02726251 | 1.9469  | 60.5 | 1569 | GCF_000816205.1_ASM81620v1_genomic.fna     |
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> V9          | V9                 | SAMN02603934 | 1.94405 | 60.5 | 1578 | GCF_000092765.1_ASM9276v1_genomic.fna      |
| <i>Bifidobacterium asteroides</i>                                | Bin2               | SAMN03269133 | 2.09478 | 60.6 | 1590 | GCF_000967185.1_ASM96718v1_genomic.fna     |
| <i>Bifidobacterium asteroides</i>                                | Bin7               | SAMN03269159 | 2.13239 | 60.7 | 1610 | GCF_000967265.1_ASM96726v1_genomic.fna     |
| <i>Bifidobacterium asteroides</i>                                | Hma3               | SAMN03271968 | 2.24522 | 59.5 | 1699 | GCF_000970835.1_ASM97083v1_genomic.fna     |
| <i>Bifidobacterium asteroides</i>                                | 1460B              | SAMN07731035 | 2.12182 | 60.5 | 1604 | GCF_002846895.1_ASM284689v1_genomic.fna    |
| <i>Bifidobacterium asteroides</i>                                | ESL0200            | SAMN08297250 | 1.93342 | 59.5 | 1526 | GCF_003202695.1_ASM320269v1_genomic.fna    |
| <i>Bifidobacterium asteroides</i>                                | ESL0198            | SAMN08297248 | 2.23561 | 59.7 | 1724 | GCF_003202715.1_ASM320271v1_genomic.fna    |
| <i>Bifidobacterium asteroides</i>                                | ESL0199            | SAMN08297249 | 2.16734 | 59.1 | 1649 | GCF_003202755.1_ASM320275v1_genomic.fna    |
| <i>Bifidobacterium asteroides</i>                                | ESL0170            | SAMN08297246 | 2.17526 | 60.1 | 1670 | GCF_003202855.1_ASM320285v1_genomic.fna    |

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|--|-----------------|---------------------|---------------|-------------|-------------|---|
| <i>Bifidobacterium asteroides</i> DSM 20089          | DSM 20089       | SAMN02442012        | 2.13859       | 60          | 1615        | GCF_000771125.1_DSM-20089_genomic.fna         |
| <i>Bifidobacterium asteroides</i> DSM 20089          | DSM 20089       | SAMN05912982        | 2.19037       | 60          | 1647        | GCF_002715865.1_ASM271586v1_genomic.fna       |
| <b><i>Bifidobacterium asteroides</i><br/>PRL2011</b> | <b>PRL2011</b>  | <b>SAMN02604114</b> | <b>2.1673</b> | <b>60.1</b> | <b>1648</b> | <b>GCF_000304215.1_ASM30421v1_genomic.fna</b> |
| <i>Bifidobacterium biavatii</i> DSM 23969            | DSM 23969       | SAMN02673425        | 3.25215       | 63.1        | 2421        | GCF_000741165.1_Bifbia_genomic.fna            |
| <i>Bifidobacterium biavatii</i> DSM 23969            | DSM 23969       | SAMN02442038        | 3.26268       | 63.2        | 2433        | GCF_000771645.1_DSM-23969_genomic.fna         |
| <i>Bifidobacterium bifidum</i>                       | 141.5           | SAMN04497897        | 2.10522       | 62.9        | 1663        | GCA_001576865.1_ASM157686v1_genomic.fna       |
| <i>Bifidobacterium bifidum</i>                       | 170.6           | SAMN04497916        | 2.13194       | 63          | 1695        | GCA_001576895.1_ASM157689v1_genomic.fna       |
| <i>Bifidobacterium bifidum</i>                       | 62_13           | SAMN05717207        | 1.67851       | 62.8        | 1169        | GCA_001915215.1_ASM191521v1_genomic.fna       |
| <i>Bifidobacterium bifidum</i>                       | LMG 11041       | SAMN02673426        | 2.20847       | 62.7        | 1712        | GCF_000741085.1_Bifbif_genomic.fna            |
| <i>Bifidobacterium bifidum</i>                       | A8              | SAMN03097401        | 2.2231        | 62.8        | 1687        | GCF_001020245.1_Bbif04v4_genomic.fna          |
| <i>Bifidobacterium bifidum</i>                       | 156B            | SAMN03097399        | 2.19182       | 62.8        | 1723        | GCF_001020255.1_Bbif02v4_genomic.fna          |
| <i>Bifidobacterium bifidum</i>                       | IPLA 20017      | SAMN03097402        | 2.17888       | 62.6        | 1682        | GCF_001020265.1_Bbif05v4_genomic.fna          |
| <i>Bifidobacterium bifidum</i>                       | LMG 11582       | SAMN03097403        | 2.2225        | 62.8        | 1675        | GCF_001020275.1_Bbif07v4_genomic.fna          |
| <i>Bifidobacterium bifidum</i>                       | LMG 13200       | SAMN03097405        | 2.17604       | 62.9        | 1685        | GCF_001020325.1_Bbif10v4_genomic.fna          |
| <i>Bifidobacterium bifidum</i>                       | LMG 11583       | SAMN03097404        | 2.23853       | 62.9        | 1765        | GCF_001020335.1_Bbif08v4_genomic.fna          |
| <i>Bifidobacterium bifidum</i>                       | 85B             | SAMN03097398        | 2.36097       | 63          | 1828        | GCF_001020355.1_Bbif01v4_genomic.fna          |
| <i>Bifidobacterium bifidum</i>                       | 324B            | SAMN03097400        | 2.20434       | 62.7        | 1768        | GCF_001020375.1_Bbif03v4_genomic.fna          |
| <i>Bifidobacterium bifidum</i>                       | IPLA 20015      | SAMN03103719        | 2.17299       | 62.7        | 1672        | GCF_001020405.1_Bbif06v4_genomic.fna          |
| <i>Bifidobacterium bifidum</i>                       | BF3             | SAMN03271680        | 2.21037       | 62.6        | 1696        | GCF_001281345.1_ASM128134v1_genomic.fna       |
| <i>Bifidobacterium bifidum</i>                       | 2789STDY5608877 | SAMEA3545285        | 2.15716       | 62.8        | 1669        | GCF_001405355.1_13414_6_61_genomic.fna        |
| <i>Bifidobacterium bifidum</i>                       | MJR8628B        | SAMN03842220        | 2.26235       | 62.8        | 1814        | GCF_001546225.1_ASM154622v1_genomic.fna       |
| <i>Bifidobacterium bifidum</i>                       | 791             | SAMN04155634        | 2.28546       | 62.4        | 1778        | GCF_001595435.1_ASM159543v1_genomic.fna       |
| <i>Bifidobacterium bifidum</i>                       | BI-14           | SAMD00047595        | 2.18443       | 62.6        | 1658        | GCF_001685685.1_ASM168568v1_genomic.fna       |
| <i>Bifidobacterium bifidum</i>                       | 1887B           | SAMN06621707        | 2.25554       | 62.6        | 1777        | GCF_002076105.1_Bbif1887B_genomic.fna         |
| <i>Bifidobacterium bifidum</i>                       | ICIS-310        | SAMN05858649        | 2.21963       | 62.4        | 1715        | GCF_002114145.1_ASM211414v1_genomic.fna       |

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|--------------------------------|-----------|--------------|---------|------|------|---|
| <i>Bifidobacterium bifidum</i> | 1 G1971   | SAMN06759457 | 2.19803 | 62.7 | 1538 | GCF_002469385.1_ASM246938v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | PRI 1     | SAMN06140833 | 2.24357 | 62.7 | 1718 | GCF_002845845.1_ASM284584v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | DS33_23   | SAMN08949006 | 2.22957 | 62.8 | 1714 | GCF_003094645.1_ASM309464v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | DS32_23   | SAMN08949005 | 2.27993 | 62.9 | 1789 | GCF_003094715.1_ASM309471v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | DS31_23   | SAMN08949004 | 2.23088 | 62.8 | 1723 | GCF_003094735.1_ASM309473v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | DS30_23   | SAMN08949003 | 2.25422 | 62.8 | 1772 | GCF_003094755.1_ASM309475v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | DS25_23   | SAMN08949001 | 2.22666 | 62.7 | 1724 | GCF_003094795.1_ASM309479v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | DS26_23   | SAMN08949002 | 2.23188 | 62.8 | 1712 | GCF_003095035.1_ASM309503v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | S6        | SAMN07484235 | 2.31134 | 62.7 | 1771 | GCF_003390735.1_ASM339073v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | TM07-4AC  | SAMN09737006 | 2.18181 | 62.8 | 1690 | GCF_003436135.1_ASM343613v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | TM04-12   | SAMN09736968 | 2.31404 | 62.7 | 1827 | GCF_003436575.1_ASM343657v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | TM02-17   | SAMN09736965 | 2.20117 | 62.6 | 1690 | GCF_003436635.1_ASM343663v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | TM02-15   | SAMN09736964 | 2.20032 | 62.6 | 1686 | GCF_003436655.1_ASM343665v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | TF07-22   | SAMN09736904 | 2.19143 | 62.6 | 1706 | GCF_003437175.1_ASM343717v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | TF06-14AC | SAMN09736890 | 2.16607 | 62.7 | 1668 | GCF_003437325.1_ASM343732v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | TF06-13   | SAMN09736889 | 2.16628 | 62.7 | 1667 | GCF_003437345.1_ASM343734v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | TF05-39   | SAMN09736884 | 2.17895 | 62.8 | 1673 | GCF_003437785.1_ASM343778v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | TF05-1    | SAMN09736871 | 2.32917 | 62.5 | 1840 | GCF_003437945.1_ASM343794v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | AF11-25B  | SAMN09734209 | 2.23403 | 62.6 | 1736 | GCF_003465425.1_ASM346542v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | TM06-5    | SAMN09736996 | 2.20388 | 62.6 | 1707 | GCF_003466365.1_ASM346636v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | TM06-10   | SAMN09736987 | 2.20702 | 62.6 | 1710 | GCF_003466395.1_ASM346639v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | TM05-15   | SAMN09736979 | 2.17737 | 62.8 | 1675 | GCF_003466485.1_ASM346648v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | AM42-15AC | SAMN09736543 | 2.30945 | 62.6 | 1809 | GCF_003467985.1_ASM346798v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | AM36-1AC  | SAMN09736479 | 2.15368 | 62.8 | 1684 | GCF_003468415.1_ASM346841v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | AM18-29   | SAMN09734868 | 2.20117 | 62.8 | 1702 | GCF_003470585.1_ASM347058v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | AM18-12AC | SAMN09734861 | 2.20416 | 62.8 | 1702 | GCF_003470615.1_ASM347061v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | AM18-11   | SAMN09734860 | 2.20457 | 62.8 | 1705 | GCF_003471555.1_ASM347155v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | AM18-1    | SAMN09734857 | 2.20293 | 62.8 | 1703 | GCF_003471595.1_ASM347159v1_genomic.fna |
| <i>Bifidobacterium bifidum</i> | AM12-10   | SAMN09734784 | 2.37548 | 62.5 | 1902 | GCF_003472345.1_ASM347234v1_genomic.fna |

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| <i>Bifidobacterium bifidum</i>                                   | AM12-9              | SAMN09734792 | 2.37333 | 62.5 | 1904 | GCF_003473145.1_ASM347314v1_genomic.fna                             |
| <i>Bifidobacterium bifidum</i>                                   | AF45-10             | SAMN09734712 | 2.16192 | 62.7 | 1412 | GCF_003474045.1_ASM347404v1_genomic.fna                             |
| <i>Bifidobacterium bifidum</i>                                   | TMC 3115            | SAMD00078313 | 2.17889 | 62.8 | 1612 | GCF_003573895.1_ASM357389v1_genomic.fna                             |
| <i>Bifidobacterium bifidum</i>                                   | ICIS-643            | SAMN06606988 | 2.28172 | 62.4 | 1766 | GCF_003790385.1_ASM379038v1_genomic.fna                             |
| <i>Bifidobacterium bifidum</i>                                   | ca_0067             | SAMN10239585 | 2.18861 | 62.7 | 1734 | GCF_004167365.1_ASM416736v1_genomic.fna                             |
| <i>Bifidobacterium bifidum</i>                                   | ICIS-202            | SAMN07709009 | 2.26506 | 62.4 | 1763 | GCF_004799295.1_ASM479929v1_genomic.fna                             |
| <i>Bifidobacterium bifidum</i>                                   | BSD2780061688st1_G1 | SAMN10863272 | 2.16421 | 62.7 | -    | GCF_005844205.1_ASM584420v1_genomic.fna                             |
| <i>Bifidobacterium bifidum</i>                                   | 1001271st1_H11      | SAMN10863260 | 2.26527 | 62.7 | -    | GCF_005844365.1_ASM584436v1_genomic.fna                             |
| <i>Bifidobacterium bifidum</i>                                   | Cal#96              | SAMN05216254 | 2.1503  | 62.8 | 1670 | GCF_900112465.1_IMG-taxon_2654588208_annotated_assembly_genomic.fna |
| <i>Bifidobacterium bifidum</i>                                   | NCTC13001           | SAMEA4063017 | 2.21103 | 62.7 | 1736 | GCF_900637095.1_48450_G02_genomic.fna                               |
| <i>Bifidobacterium bifidum</i> ATCC 29521 = JCM 1255 = DSM 20456 | ATCC 29521          | SAMN02436821 | 2.20125 | 62.7 | 1713 | GCF_000466525.1_ASM46652v1_genomic.fna                              |
| <i>Bifidobacterium bifidum</i> ATCC 29521 = JCM 1255 = DSM 20456 | DSM 20456           | SAMN02442030 | 2.20279 | 62.7 | 1721 | GCF_000771485.1_DSM-20456_genomic.fna                               |
| <i>Bifidobacterium bifidum</i> ATCC 29521 = JCM 1255 = DSM 20456 | JCM 1255            | SAMD00061040 | 2.21104 | 62.7 | 1723 | GCF_001025135.1_ASM102513v1_genomic.fna                             |
| <i>Bifidobacterium bifidum</i> BGN4                              | BGN4                | SAMN02603486 | 2.22366 | 62.6 | 1727 | GCF_000265095.1_ASM26509v1_genomic.fna                              |
| <i>Bifidobacterium bifidum</i> IPLA 20015                        | IPLA 20015          | SAMN02470078 | 2.13833 | 62.7 | 1553 | GCF_000300215.1_ASM30021v1_genomic.fna                              |
| <i>Bifidobacterium bifidum</i> JCM 1254                          | JCM 1254            | SAMD00000434 | 2.19002 | 62.6 | -    | GCF_001311705.1_ASM131170v1_genomic.fna                             |
| <i>Bifidobacterium bifidum</i> LMG 13195                         | JCM 7004            | SAMD00078038 | 2.26167 | 62.6 | 2106 | GCA_003573955.1_ASM357395v1_genomic.fna                             |
| <i>Bifidobacterium bifidum</i> LMG 13195                         | LMG 13195           | SAMN02470080 | 2.28315 | 62.6 | 1730 | GCF_000299595.1_ASM29959v1_genomic.fna                              |
| <i>Bifidobacterium bifidum</i> LMG 13195                         | LMG 13195           | SAMN03103720 | 2.31018 | 62.6 | 1772 | GCF_001020415.1_Bbif09v4_genomic.fna                                |
| <i>Bifidobacterium bifidum</i> NCIMB 41171                       | NCIMB 41171         | SAMN02463676 | 2.20269 | 62.7 | 1738 | GCF_000155395.1_ASM15539v1_genomic.fna                              |

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|---|----------------|---------------------|----------------|-------------|-------------|---|
| <i>Bifidobacterium bifidum</i> NCIMB 41171    | NCIMB 41171    | SAMN02463676        | 2.21639        | 62.8        | 1755        | GCF_000273525.1_PB_Bifi_bifi_NCIMB_41171_V1_genomic.fna             |
| <b><i>Bifidobacterium bifidum</i> PRL2010</b> | <b>PRL2010</b> | <b>SAMN02603510</b> | <b>2.21466</b> | <b>62.7</b> | <b>1706</b> | <b>GCF_000165905.1_ASM16590v1_genomic.fna</b>                       |
| <i>Bifidobacterium bifidum</i> S17            | S17            | SAMN02603395        | 2.18688        | 62.8        | 1715        | GCF_000164965.1_ASM16496v1_genomic.fna                              |
| <i>Bifidobacterium bohemicum</i>              | R-53250        | SAMN04487797        | 2.04645        | 57.4        | 1526        | GCF_900094965.1_IMG-taxon_2616644833_annotated_assembly_genomic.fna |
| <i>Bifidobacterium bohemicum</i> DSM 22767    | DSM 22767      | SAMN02673427        | 2.05247        | 57.5        | 1534        | GCF_000741525.1_Bifboh_genomic.fna                                  |
| <i>Bifidobacterium bohemicum</i> DSM 22767    | DSM 22767      | SAMN02442036        | 2.0549         | 57.4        | 1522        | GCF_000771605.1_DSM-22767_genomic.fna                               |
| <i>Bifidobacterium bombi</i> DSM 19703        | DSM 19703      | SAMN02952076        | 1.89524        | 56.1        | 1403        | GCF_000737845.1_BBOMBassembly_genomic.fna                           |
| <i>Bifidobacterium bombi</i> DSM 19703        | DSM 19703      | SAMN02442010        | 1.91279        | 56          | 1418        | GCF_000771085.1_DSM-19703_genomic.fna                               |
| <i>Bifidobacterium boum</i>                   | LMG 10736      | SAMN02673428        | 2.17136        | 59.3        | 1645        | GCF_000741535.1_Bifbou_genomic.fna                                  |
| <i>Bifidobacterium boum</i> DSM 20432         | DSM 20432      | SAMN02743876        | 2.16119        | 59.3        | 1642        | GCF_000687615.1_ASM68761v1_genomic.fna                              |
| <i>Bifidobacterium boum</i> DSM 20432         | DSM 20432      | SAMN02442025        | 2.17144        | 59.3        | 1642        | GCF_000771385.1_DSM-20432_genomic.fna                               |
| <i>Bifidobacterium breve</i>                  | 141.3          | SAMN04497912        | 1.09419        | 59.2        | 868         | GCA_001576875.1_ASM157687v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>                  | LMG 13208      | SAMN02673429        | 2.26378        | 58.9        | 1798        | GCF_000741125.1_Bifbre_genomic.fna                                  |
| <i>Bifidobacterium breve</i>                  | BBRI4          | SAMN03777307        | 2.42672        | 58.7        | 1964        | GCF_001189355.1_assBREI4_genomic.fna                                |
| <i>Bifidobacterium breve</i>                  | BR3            | SAMN03271681        | 2.42601        | 59.1056     | 1987        | GCF_001281425.1_ASM128142v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>                  | GED8481        | SAMN03842221        | 2.35844        | 58.6        | 1909        | GCF_001546235.1_ASM154623v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>                  | BR-06          | SAMD00047596        | 2.6608         | 59.2        | 2066        | GCF_001685705.1_ASM168570v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>                  | BR-07          | SAMD00047597        | 2.24948        | 58.7        | 1809        | GCF_001685725.1_ASM168572v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>                  | BR-10          | SAMD00047598        | 2.34992        | 58.8        | 1860        | GCF_001685745.1_ASM168574v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>                  | BR-14          | SAMD00047599        | 2.52987        | 59.2        | 2086        | GCF_001685765.1_ASM168576v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>                  | BR-15          | SAMD00047600        | 2.3738         | 58.7        | 1890        | GCF_001685785.1_ASM168578v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>                  | BR-19          | SAMD00047601        | 2.32499        | 58.6        | 1867        | GCF_001685805.1_ASM168580v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>                  | BR-20          | SAMD00047602        | 2.33547        | 58.8        | 1848        | GCF_001685825.1_ASM168582v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>                  | BR-21          | SAMD00047603        | 2.61462        | 59.2        | 2151        | GCF_001685845.1_ASM168584v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>                  | BR-A29         | SAMD00047604        | 2.38763        | 58.8        | 1881        | GCF_001685865.1_ASM168586v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>                  | BR-C29         | SAMD00047605        | 2.28766        | 58.9        | 1844        | GCF_001685885.1_ASM168588v1_genomic.fna                             |

|                              |             |              |         |      |      |   |
|------------------------------|-------------|--------------|---------|------|------|---|
| <i>Bifidobacterium breve</i> | BR-H29      | SAMD00047606 | 2.47084 | 59.2 | 1990 | GCF_001685905.1_ASM168590v1_genomic.fna |
| <i>Bifidobacterium breve</i> | BR-I29      | SAMD00047607 | 2.24992 | 58.7 | 1797 | GCF_001685925.1_ASM168592v1_genomic.fna |
| <i>Bifidobacterium breve</i> | BR-L29      | SAMD00047608 | 2.34466 | 59   | 1921 | GCF_001685945.1_ASM168594v1_genomic.fna |
| <i>Bifidobacterium breve</i> | LMC520      | SAMN06240351 | 2.4034  | 59   | 1953 | GCF_001990225.1_ASM199022v1_genomic.fna |
| <i>Bifidobacterium breve</i> | CECT7263    | SAMN06473336 | 2.33041 | 58.9 | 1860 | GCF_002027265.1_ASM202726v1_genomic.fna |
| <i>Bifidobacterium breve</i> | 1900B       | SAMN06621718 | 2.28787 | 58.6 | 1844 | GCF_002075865.1_Bbif1900B_genomic.fna   |
| <i>Bifidobacterium breve</i> | 1891B       | SAMN06621711 | 2.41898 | 59.1 | 1972 | GCF_002076055.1_Bbif1891B_genomic.fna   |
| <i>Bifidobacterium breve</i> | 1889B       | SAMN06621709 | 2.34482 | 58.8 | 1866 | GCF_002076075.1_Bbif1889B_genomic.fna   |
| <i>Bifidobacterium breve</i> | 7E          | SAMN05933031 | 2.27086 | 58.6 | 1794 | GCF_002271275.1_Bbre7Ev1_genomic.fna    |
| <i>Bifidobacterium breve</i> | DRBB26      | SAMN06827973 | 2.39639 | 58.5 | 1936 | GCF_002838225.1_ASM283822v1_genomic.fna |
| <i>Bifidobacterium breve</i> | NRBB01      | SAMN06827008 | 2.2694  | 58.9 | 1884 | GCF_002838245.1_ASM283824v1_genomic.fna |
| <i>Bifidobacterium breve</i> | NRBB02      | SAMN06827019 | 2.28988 | 58.6 | 1826 | GCF_002838265.1_ASM283826v1_genomic.fna |
| <i>Bifidobacterium breve</i> | NRBB04      | SAMN06827050 | 2.32465 | 58.7 | 1844 | GCF_002838285.1_ASM283828v1_genomic.fna |
| <i>Bifidobacterium breve</i> | NRBB11      | SAMN06827081 | 2.37756 | 58.7 | 1875 | GCF_002838305.1_ASM283830v1_genomic.fna |
| <i>Bifidobacterium breve</i> | NRBB09      | SAMN06827067 | 2.26556 | 58.7 | 1790 | GCF_002838325.1_ASM283832v1_genomic.fna |
| <i>Bifidobacterium breve</i> | NRBB57      | SAMN06827912 | 2.51038 | 59.4 | 2057 | GCF_002838345.1_ASM283834v1_genomic.fna |
| <i>Bifidobacterium breve</i> | NRBB50      | SAMN06827094 | 2.40906 | 58.8 | 1979 | GCF_002838365.1_ASM283836v1_genomic.fna |
| <i>Bifidobacterium breve</i> | NRBB52      | SAMN06827097 | 2.37967 | 58.9 | 1931 | GCF_002838385.1_ASM283838v1_genomic.fna |
| <i>Bifidobacterium breve</i> | NRBB51      | SAMN06827096 | 2.40227 | 59   | 1914 | GCF_002838405.1_ASM283840v1_genomic.fna |
| <i>Bifidobacterium breve</i> | NRBB56      | SAMN06827911 | 2.42512 | 58.9 | 1940 | GCF_002838425.1_ASM283842v1_genomic.fna |
| <i>Bifidobacterium breve</i> | DRBB27      | SAMN06827975 | 2.43508 | 58.9 | 1986 | GCF_002838445.1_ASM283844v1_genomic.fna |
| <i>Bifidobacterium breve</i> | 017W439     | SAMN06828931 | 2.30142 | 58.7 | 1855 | GCF_002838465.1_ASM283846v1_genomic.fna |
| <i>Bifidobacterium breve</i> | 215W447a    | SAMN06829004 | 2.5896  | 59.3 | 2126 | GCF_002838485.1_ASM283848v1_genomic.fna |
| <i>Bifidobacterium breve</i> | DRBB28      | SAMN06827976 | 2.46217 | 59   | 2031 | GCF_002838505.1_ASM283850v1_genomic.fna |
| <i>Bifidobacterium breve</i> | 180W83      | SAMN06829003 | 2.27317 | 58.8 | 1837 | GCF_002838525.1_ASM283852v1_genomic.fna |
| <i>Bifidobacterium breve</i> | 082W48      | SAMN06828932 | 2.28634 | 58.8 | 1842 | GCF_002838545.1_ASM283854v1_genomic.fna |
| <i>Bifidobacterium breve</i> | 139W423     | SAMN06829002 | 2.41128 | 58.6 | 1940 | GCF_002838565.1_ASM283856v1_genomic.fna |
| <i>Bifidobacterium breve</i> | CNCM I-4321 | SAMN06827913 | 2.46485 | 59   | 2045 | GCF_002838585.1_ASM283858v1_genomic.fna |
| <i>Bifidobacterium breve</i> | NRBB18      | SAMN07160576 | 2.28969 | 58.6 | 1829 | GCF_002838605.1_ASM283860v1_genomic.fna |

|                                  |              |               |         |      |      |   |
|----------------------------------|--------------|---------------|---------|------|------|---|
| <i>Bifidobacterium breve</i>     | NRBB19       | SAMN07160980  | 2.28973 | 58.6 | 1813 | GCF_002838625.1_ASM283862v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | NRBB20       | SAMN07160580  | 2.28989 | 58.6 | 1833 | GCF_002838645.1_ASM283864v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | NRBB27       | SAMN07160976  | 2.28984 | 58.6 | 1826 | GCF_002838665.1_ASM283866v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | NRBB49       | SAMN07160977  | 2.28979 | 58.6 | 1828 | GCF_002838685.1_ASM283868v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | DRBB29       | SAMN07160978  | 2.43509 | 58.9 | 1987 | GCF_002838705.1_ASM283870v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | DRBB30       | SAMN07160979  | 2.47112 | 58.9 | 2051 | GCF_002838725.1_ASM283872v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | NRBB08       | SAMN07160574  | 2.28976 | 58.6 | 1820 | GCF_002838745.1_ASM283874v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | UMB0915      | SAMN08193648  | 2.315   | 58.8 | 1861 | GCF_002861455.1_ASM286145v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | UMB0089      | SAMN07511392  | 2.33608 | 58.8 | 1868 | GCF_002871815.1_ASM287181v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | LMG S-29190  | SAMN07187787  | 2.3172  | 58.8 | 1877 | GCF_002914865.1_ASM291486v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | DS15_17      | SAMN06464121  | 2.26068 | 58.9 | 1891 | GCF_003095095.1_ASM309509v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | N6D12        | SAMN07189843  | 2.29032 | 58.6 | 1768 | GCF_003370105.1_ASM337010v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | W20-13       | SAMN07189841  | 2.29515 | 58.5 | 1819 | GCF_003370125.1_ASM337012v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | 43803        | SAMN07189840  | 2.26034 | 58.2 | 1610 | GCF_003370155.1_ASM337015v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | 322-1        | SAMN07189839  | 2.23684 | 58.7 | 1741 | GCF_003370175.1_ASM337017v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | 43495        | SAMN07189837  | 2.53953 | 59.1 | 1743 | GCF_003370195.1_ASM337019v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | W56          | SAMN07189842  | 2.36405 | 58.5 | 1831 | GCF_003370265.1_ASM337026v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | 33239        | SAMN07189838  | 2.23926 | 58.5 | 1574 | GCF_003370295.1_ASM337029v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | FDAARGOS_561 | SAMN10163185  | 2.27565 | 58.9 | 1903 | GCF_003813065.1_ASM381306v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | lw01         | SAMN10484345  | 2.31317 | 58.8 | 1862 | GCF_003860285.1_ASM386028v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | BR03         | SAMN10659766  | 2.27463 | 58.6 | 1807 | GCF_004319685.1_ASM431968v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | UBBR-01      | SAMN11381953  | 2.33383 | 58.7 | 1908 | GCF_004802595.1_ASM480259v1_genomic.fna                             |
| <i>Bifidobacterium breve</i>     | RP2          | SAMN05216468  | 2.26049 | 58.7 | 1816 | GCF_900102865.1_IMG-taxon_2651870312_annotated_assembly_genomic.fna |
| <i>Bifidobacterium breve</i>     | Bifido_10    | SAMEA51822418 | 2.37804 | 58.5 | 1934 | GCF_900157105.1_Bifido_10_v1_genomic.fna                            |
| <i>Bifidobacterium breve</i>     | Bifido_07    | SAMEA51820168 | 2.34387 | 58.8 | 1926 | GCF_900157125.1_Bifido_07_v1_genomic.fna                            |
| <i>Bifidobacterium breve</i>     | NCTC11815    | SAMEA4076721  | 2.27566 | 58.9 | 1901 | GCF_900637145.1_49569_E01_genomic.fna                               |
| <i>Bifidobacterium breve</i> 12L | 12L          | SAMN03081478  | 2.24462 | 58.9 | 1820 | GCF_000568955.1_ASM56895v1_genomic.fna                              |
| <i>Bifidobacterium breve</i> 2L  | 2L           | SAMN02951890  | 2.24072 | 58.9 | 1761 | GCF_000568895.1_Mira_de-novo_assembly_genomic.fna                   |

|  |                 |                     |                |             |             |   |
|--|-----------------|---------------------|----------------|-------------|-------------|---|
| <i>Bifidobacterium breve</i> 31L                         | 31L             | SAMN02951889        | 2.26565        | 58.6        | 1689        | GCF_000568875.1_Mira_de-novo_assembly_genomic.fna |
| <i>Bifidobacterium breve</i> 689b                        | 689b            | SAMN03081482        | 2.33171        | 58.7        | 1887        | GCF_000569055.1_ASM56905v1_genomic.fna            |
| <i>Bifidobacterium breve</i> ACS-071-V-Sch8b             | ACS-071-V-Sch8b | SAMN00100758        | 2.32749        | 58.7        | 1877        | GCF_000213865.1_ASM21386v1_genomic.fna            |
| <i>Bifidobacterium breve</i> CECT 7263                   | CECT 7263       | SAMN02471362        | 2.3144         | 58.9        | 1841        | GCF_000247755.1_ASM24775v2_genomic.fna            |
| <i>Bifidobacterium breve</i> DPC 6330                    | DPC 6330        | SAMN02471030        | 2.38623        | 58.6        | 1977        | GCF_000226175.1_ASM22617v2_genomic.fna            |
| <i>Bifidobacterium breve</i> DSM 20213 = JCM 1192        | DSM 20213       | SAMN00008778        | 2.33139        | 58.5        | 1927        | GCF_000158015.1_ASM15801v1_genomic.fna            |
| <i>Bifidobacterium breve</i> DSM 20213 = JCM 1192        | DSM 20213       | SAMN02442021        | 2.25713        | 58.9        | 1895        | GCF_000771305.1_DSM-20213_genomic.fna             |
| <b><i>Bifidobacterium breve</i> DSM 20213 = JCM 1192</b> | <b>JCM 1192</b> | <b>SAMD00061041</b> | <b>2.26941</b> | <b>58.9</b> | <b>1904</b> | <b>GCF_001025175.1_ASM102517v1_genomic.fna</b>    |
| <i>Bifidobacterium breve</i> DSM 20213 = JCM 1192        | JCM 1192        | SAMD00000422        | 2.23281        | 58.7        | -           | GCF_001311295.1_ASM131129v1_genomic.fna           |
| <i>Bifidobacterium breve</i> HPH0326                     | HPH0326         | SAMN02596976        | 2.50431        | 59.1        | 2047        | GCF_000411435.1_Bifi_brev_HPH0326_V1_genomic.fna  |
| <i>Bifidobacterium breve</i> JCM 7017                    | JCM 7017        | SAMN03081479        | 2.28892        | 58.7        | 1843        | GCF_000568975.1_ASM56897v1_genomic.fna            |
| <i>Bifidobacterium breve</i> JCM 7019                    | JCM 7019        | SAMN03081480        | 2.35901        | 58.6        | 1919        | GCF_000569015.1_ASM56901v1_genomic.fna            |
| <i>Bifidobacterium breve</i> JCP7499                     | JCP7499         | SAMN02436887        | 2.36972        | 58.6        | 1913        | GCF_000466545.1_ASM46654v1_genomic.fna            |
| <i>Bifidobacterium breve</i> MCC 0121                    | MCC 0121        | SAMN03978796        | 2.43634        | 58.9        | 1973        | GCF_001264045.1_ASM126404v1_genomic.fna           |
| <i>Bifidobacterium breve</i> MCC 0305                    | MCC 0305        | SAMN03978801        | 2.28684        | 58.8        | 1859        | GCF_001264035.1_ASM126403v1_genomic.fna           |
| <i>Bifidobacterium breve</i> MCC 0476                    | MCC 0476        | SAMN03978797        | 2.23381        | 58.6        | 1800        | GCF_001263845.1_ASM126384v1_genomic.fna           |
| <i>Bifidobacterium breve</i> MCC 1094                    | MCC 1094        | SAMN03978802        | 2.32721        | 59          | 1899        | GCF_001264095.1_ASM126409v1_genomic.fna           |
| <i>Bifidobacterium breve</i> MCC 1114                    | MCC 1114        | SAMN03978798        | 2.48728        | 59          | 2018        | GCF_001263855.1_ASM126385v1_genomic.fna           |
| <i>Bifidobacterium breve</i> MCC 1128                    | MCC 1128        | SAMN03978799        | 2.48022        | 58.9        | 2045        | GCF_001263915.1_ASM126391v1_genomic.fna           |
| <i>Bifidobacterium breve</i> MCC 1340                    | MCC 1340        | SAMN03978803        | 2.37311        | 58.6        | 1899        | GCF_001264105.1_ASM126410v1_genomic.fna           |
| <i>Bifidobacterium breve</i> MCC 1454                    | MCC 1454        | SAMN03978804        | 2.45745        | 58.5        | 2034        | GCF_001264135.1_ASM126413v1_genomic.fna           |
| <i>Bifidobacterium breve</i> MCC 1604                    | MCC 1604        | SAMN03978800        | 2.20639        | 58.7        | 1771        | GCF_001264155.1_ASM126415v1_genomic.fna           |
| <i>Bifidobacterium breve</i> MCC 1605                    | MCC 1605        | SAMN03978805        | 2.32401        | 59          | 1870        | GCF_001263935.1_ASM126393v1_genomic.fna           |
| <i>Bifidobacterium breve</i> NCFB 2258                   | NCFB 2258       | SAMN03081481        | 2.3159         | 58.7        | 1870        | GCF_000569035.1_ASM56903v1_genomic.fna            |
| <i>Bifidobacterium breve</i> S27                         | S27             | SAMN03081483        | 2.29446        | 58.7        | 1837        | GCF_000569075.1_ASM56907v1_genomic.fna            |

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|---|-----------|--------------|---------|---------|------|---|
| <i>Bifidobacterium breve</i> UCC2003                                | UCC2003   | SAMN02604112 | 2.42268 | 58.7    | 1960 | GCF_000220135.1_ASM22013v1_genomic.fna  |
| <i>Bifidobacterium callitrichos</i>                                 | UMA51805  | SAMN07664461 | 2.77709 | 63.6    | 2110 | GCF_003024945.1_ASM302494v1_genomic.fna |
| <i>Bifidobacterium callitrichos</i>                                 | UMA51804  | SAMN07664420 | 3.03233 | 64.5    | 2371 | GCF_003024955.1_ASM302495v1_genomic.fna |
| <i>Bifidobacterium callitrichos</i> DSM 23973                       | DSM 23973 | SAMN02673430 | 2.88731 | 63.5    | 2217 | GCF_000741175.1_Bifcal_genomic.fna      |
| <i>Bifidobacterium callitrichos</i> DSM 23973                       | DSM 23973 | SAMN02442039 | 2.86721 | 63.6    | 2243 | GCF_000771665.1_DSM-23973_genomic.fna   |
| <i>Bifidobacterium catenulatum</i>                                  | 1899B     | SAMN06621717 | 2.1246  | 56.3    | 1669 | GCF_002075855.1_Bbif1899B_genomic.fna   |
| <i>Bifidobacterium catenulatum</i> DSM 16992 = JCM 1194 = LMG 11043 | DSM 16992 | SAMN00008795 | 2.05843 | 56.1    | 1619 | GCF_000173455.1_ASM17345v1_genomic.fna  |
| <i>Bifidobacterium catenulatum</i> DSM 16992 = JCM 1194 = LMG 11043 | LMG 11043 | SAMN02673431 | 2.08276 | 56.1    | 1515 | GCF_000741565.1_Bifcat_genomic.fna      |
| <i>Bifidobacterium catenulatum</i> DSM 16992 = JCM 1194 = LMG 11043 | DSM 16992 | SAMN02442007 | 2.10636 | 56.4    | 1638 | GCF_000771025.1_DSM-16992_genomic.fna   |
| <i>Bifidobacterium catenulatum</i> DSM 16992 = JCM 1194 = LMG 11043 | JCM 1194  | SAMD00061042 | 2.07952 | 56.2    | 1628 | GCF_001025195.1_ASM102519v1_genomic.fna |
| <i>Bifidobacterium choerinum</i>                                    | LMG 10510 | SAMN02673432 | 2.09612 | 65.5    | 1591 | GCF_000741135.1_Bifcho_genomic.fna      |
| <i>Bifidobacterium choerinum</i>                                    | FMB-1     | SAMN05949246 | 2.25729 | 65.5517 | 1758 | GCF_002761235.1_ASM276123v1_genomic.fna |
| <i>Bifidobacterium choerinum</i> DSM 20434                          | DSM 20434 | SAMN02441446 | 2.03732 | 65.7    | 1544 | GCF_000484675.1_ASM48467v1_genomic.fna  |
| <i>Bifidobacterium choerinum</i> DSM 20434                          | DSM 20434 | SAMN02442027 | 2.04994 | 65.7    | 1536 | GCF_000771425.1_DSM-20434_genomic.fna   |
| <i>Bifidobacterium coryneforme</i>                                  | LMG18911  | SAMN02666223 | 1.75515 | 60.5    | 1352 | GCF_000737865.1_ASM73786v1_genomic.fna  |
| <i>Bifidobacterium coryneforme</i>                                  | Bma6      | SAMN03271958 | 1.74971 | 60.5    | 1342 | GCF_000967205.1_ASM96720v1_genomic.fna  |
| <i>Bifidobacterium coryneforme</i> DSM 20216                        | DSM 20216 | SAMN02442023 | 1.741   | 60.5    | 1343 | GCF_000771345.1_DSM-20216_genomic.fna   |
| <i>Bifidobacterium cuniculi</i>                                     | LMG 10738 | SAMN02673433 | 2.53159 | 64.9    | 2105 | GCF_000741575.1_Bifcun_genomic.fna      |
| <i>Bifidobacterium cuniculi</i> DSM 20435                           | DSM 20435 | SAMN02442028 | 2.51269 | 64.9    | 2069 | GCF_000771465.1_DSM-20435_genomic.fna   |
| <i>Bifidobacterium dentium</i>                                      | 176.7     | SAMN04497915 | 1.40795 | 58.4    | 1096 | GCA_001576945.1_ASM157694v1_genomic.fna |

|  |                 |                     |                |             |             |   |
|--|-----------------|---------------------|----------------|-------------|-------------|---|
| <i>Bifidobacterium dentium</i>                             | UBA10777        | SAMN08018834        | 2.26612        | 58.5        | 1649        | GCA_003508295.1_ASM350829v1_genomic.fna                             |
| <i>Bifidobacterium dentium</i>                             | DE-29           | SAMD00047615        | 2.55269        | 58.5        | 2016        | GCF_001686085.1_ASM168608v1_genomic.fna                             |
| <i>Bifidobacterium dentium</i>                             | 1893B           | SAMN06621713        | 2.57107        | 58.2        | 2033        | GCF_002075955.1_Bbif1893B_genomic.fna                               |
| <i>Bifidobacterium dentium</i>                             | cx_0004         | SAMN10239586        | 2.58988        | 58.5        | 2098        | GCF_004167735.1_ASM416773v1_genomic.fna                             |
| <i>Bifidobacterium dentium</i>                             | ATCC 15424      | SAMN11280666        | 2.62554        | 58.5        | 2154        | GCF_004683745.1_ASM468374v1_genomic.fna                             |
| <i>Bifidobacterium dentium</i>                             | NCTC11816       | SAMEA4076722        | 2.63583        | 58.5        | 2120        | GCF_900637175.1_49569_F01_genomic.fna                               |
| <i>Bifidobacterium dentium</i> ATCC 27678                  | ATCC 27678      | SAMN00000021        | 2.64208        | 58.5        | 2149        | GCF_000172135.1_ASM17213v1_genomic.fna                              |
| <i>Bifidobacterium dentium</i> ATCC 27679                  | ATCC 27679      | SAMN00210789        | 2.64578        | 58.4        | 2210        | GCF_000146775.1_ASM14677v1_genomic.fna                              |
| <i>Bifidobacterium dentium</i> Bd1                         | Bd1             | SAMN02603177        | 2.63637        | 58.5        | 2137        | GCF_000024445.1_ASM2444v1_genomic.fna                               |
| <i>Bifidobacterium dentium</i> JCM 1195 = DSM 20436        | DSM 20436       | SAMN02442045        | 2.61478        | 58.5        | 2128        | GCF_000771725.1_DSM-20436_genomic.fna                               |
| <b><i>Bifidobacterium dentium</i> JCM 1195 = DSM 20436</b> | <b>JCM 1195</b> | <b>SAMD00061043</b> | <b>2.63567</b> | <b>58.5</b> | <b>2140</b> | <b>GCF_001042595.1_ASM104259v1_genomic.fna</b>                      |
| <i>Bifidobacterium dentium</i> JCM 1195 = DSM 20436        | DSM 20436       | SAMN05192536        | 2.66807        | 58.6        | 2152        | GCF_900105745.1_IMG-taxon_2634166294_annotated_assembly_genomic.fna |
| <i>Bifidobacterium dentium</i> JCVIHMP022                  | JCVIHMP022      | SAMN00115044        | 2.63658        | 58.4        | 2089        | GCF_000149165.1_ASM14916v1_genomic.fna                              |
| <i>Bifidobacterium gallicum</i> DSM 20093 = LMG 11596      | DSM 20093       | SAMN02299421        | 2.0198         | 57.5        | 1491        | GCF_000173375.1_ASM17337v1_genomic.fna                              |
| <i>Bifidobacterium gallicum</i> DSM 20093 = LMG 11596      | LMG 11596       | SAMN02673434        | 2.00459        | 57.6        | 1487        | GCF_000741205.1_Bifgalcum_genomic.fna                               |
| <i>Bifidobacterium gallicum</i> DSM 20093 = LMG 11596      | DSM 20093       | SAMN02442014        | 1.98985        | 57.6        | 1476        | GCF_000771165.1_DSM-20093_genomic.fna                               |
| <i>Bifidobacterium gallinarum</i>                          | UBA1815         | SAMN06453770        | 1.63265        | 63.4        | -           | GCA_002314335.1_ASM231433v1_genomic.fna                             |
| <i>Bifidobacterium gallinarum</i>                          | LMG 11586       | SAMN02673435        | 2.16084        | 64.2        | 1651        | GCF_000741215.1_Bifgalrum_genomic.fna                               |
| <i>Bifidobacterium gallinarum</i>                          | CACC 514        | SAMN10782522        | 2.41446        | 63.9011     | 1957        | GCF_004135085.1_ASM413508v1_genomic.fna                             |
| <i>Bifidobacterium gallinarum</i> DSM 20670                | DSM 20670       | SAMN02442031        | 2.12857        | 64.2        | 1648        | GCF_000771505.1_DSM-20670_genomic.fna                               |

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|---|-------------|--------------|---------|---------|------|---|
| <i>Bifidobacterium indicum</i>                              | ESL0197     | SAMN08297247 | 1.71524 | 60.6    | 1314 | GCF_003202665.1_ASM320266v1_genomic.fna |
| <i>Bifidobacterium indicum</i> LMG 11587 = DSM 20214        | LMG 11587   | SAMN05771123 | 1.73455 | 60.5    | 1327 | GCF_000706765.1_ASM70676v1_genomic.fna  |
| <i>Bifidobacterium indicum</i> LMG 11587 = DSM 20214        | DSM 20214   | SAMN02442022 | 1.72396 | 60.5    | 1332 | GCF_000771325.1_DSM-20214_genomic.fna   |
| <i>Bifidobacterium kashiwanohense</i> JCM 15439 = DSM 21854 | DSM 21854   | SAMN02673436 | 2.30796 | 56.2    | 1739 | GCF_000741605.1_Bifkas_genomic.fna      |
| <i>Bifidobacterium kashiwanohense</i> JCM 15439 = DSM 21854 | DSM 21854   | SAMN02442033 | 2.32346 | 56.3    | 1825 | GCF_000771545.1_DSM-21854_genomic.fna   |
| <i>Bifidobacterium kashiwanohense</i> JCM 15439 = DSM 21854 | JCM 15439   | SAMD00061044 | 2.33723 | 56.3    | 1840 | GCF_001042615.1_ASM104261v1_genomic.fna |
| <i>Bifidobacterium kashiwanohense</i> PV20-2                | PV20-2      | SAMN03253090 | 2.37098 | 56.1    | 1876 | GCF_000800455.1_ASM80045v1_genomic.fna  |
| <i>Bifidobacterium lemurum</i>                              | DSM 28807   | SAMD00065376 | 2.91202 | 62.6    | 2221 | GCF_001895165.1_ASM189516v1_genomic.fna |
| <i>Bifidobacterium lemurum</i>                              | DSM 28807   | SAMN06341149 | 2.94429 | 62.6    | 2231 | GCF_002259665.1_ASM225966v1_genomic.fna |
| <i>Bifidobacterium longum</i>                               | 121.2       | SAMN04497913 | 1.87256 | 60.3    | 1453 | GCA_001576955.1_ASM157695v1_genomic.fna |
| <i>Bifidobacterium longum</i>                               | UBA2088     | SAMN06457477 | 1.87849 | 59.2    | -    | GCA_002331305.1_ASM233130v1_genomic.fna |
| <i>Bifidobacterium longum</i>                               | UBA9129     | SAMN08020367 | 1.87394 | 57.4    | 1920 | GCA_003531035.1_ASM353103v1_genomic.fna |
| <i>Bifidobacterium longum</i>                               | 12_1_47BFAA | SAMN02463822 | 2.40599 | 60.1    | 1966 | GCF_000185665.1_ASM18566v1_genomic.fna  |
| <i>Bifidobacterium longum</i>                               | BXY01       | SAMN02843216 | 2.4806  | 59.8    | 1961 | GCF_000730205.1_ASM73020v1_genomic.fna  |
| <i>Bifidobacterium longum</i>                               | 105-A       | SAMD00019943 | 2.29014 | 60.1    | 1823 | GCF_000829295.1_ASM82929v1_genomic.fna  |
| <i>Bifidobacterium longum</i>                               | BG7         | SAMN03271682 | 2.45576 | 60.0068 | 1961 | GCF_001293145.1_ASM129314v1_genomic.fna |
| <i>Bifidobacterium longum</i>                               | CMW7750     | SAMN03842222 | 2.37208 | 60      | 1903 | GCF_001546275.1_ASM154627v1_genomic.fna |
| <i>Bifidobacterium longum</i>                               | 379         | SAMN04155602 | 2.38762 | 60.2    | 1939 | GCF_001595465.1_ASM159546v1_genomic.fna |
| <i>Bifidobacterium longum</i>                               | 35624       | SAMN04254466 | 2.26406 | 60      | 1796 | GCF_001719085.1_ASM171908v1_genomic.fna |
| <i>Bifidobacterium longum</i>                               | 1898B       | SAMN06621716 | 2.47439 | 59.9    | 1990 | GCF_002075875.1_Bbif1898B_genomic.fna   |
| <i>Bifidobacterium longum</i>                               | 1897B       | SAMN06621715 | 2.45361 | 59.9    | 1950 | GCF_002075935.1_Bbif1897B_genomic.fna   |
| <i>Bifidobacterium longum</i>                               | 1890B       | SAMN06621710 | 2.34167 | 59.9    | 1798 | GCF_002076015.1_Bbif1890B_genomic.fna   |
| <i>Bifidobacterium longum</i>                               | 1886B       | SAMN06621706 | 2.47375 | 60.2    | 2075 | GCF_002076095.1_Bbif1886B_genomic.fna   |
| <i>Bifidobacterium longum</i>                               | Indica      | SAMN07503177 | 2.37423 | 60      | 1936 | GCF_002276185.1_ASM227618v1_genomic.fna |

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|-------------------------------|---------|--------------|---------|------|------|---|
| <i>Bifidobacterium longum</i> | DPC6317 | SAMN07958363 | 2.44863 | 60.2 | 1944 | GCF_002832945.1_ASM283294v1_genomic.fna |
| <i>Bifidobacterium longum</i> | APC1504 | SAMN07958361 | 2.31029 | 60.2 | 1869 | GCF_002832955.1_ASM283295v1_genomic.fna |
| <i>Bifidobacterium longum</i> | APC1503 | SAMN07958360 | 2.5627  | 59.7 | 2132 | GCF_002832985.1_ASM283298v1_genomic.fna |
| <i>Bifidobacterium longum</i> | DPC6321 | SAMN07958365 | 2.38236 | 59.9 | 1920 | GCF_002832995.1_ASM283299v1_genomic.fna |
| <i>Bifidobacterium longum</i> | DPC6316 | SAMN07958362 | 2.39397 | 60.4 | 1926 | GCF_002833015.1_ASM283301v1_genomic.fna |
| <i>Bifidobacterium longum</i> | APC1482 | SAMN07958359 | 2.33744 | 60.2 | 1866 | GCF_002833035.1_ASM283303v1_genomic.fna |
| <i>Bifidobacterium longum</i> | APC1478 | SAMN07958357 | 2.22335 | 59.8 | 1744 | GCF_002833055.1_ASM283305v1_genomic.fna |
| <i>Bifidobacterium longum</i> | APC1480 | SAMN07958358 | 2.47775 | 59.9 | 2045 | GCF_002833065.1_ASM283306v1_genomic.fna |
| <i>Bifidobacterium longum</i> | APC1477 | SAMN07958356 | 2.22881 | 59.8 | 1743 | GCF_002833075.1_ASM283307v1_genomic.fna |
| <i>Bifidobacterium longum</i> | APC1472 | SAMN07958353 | 2.36404 | 60.2 | 1875 | GCF_002833115.1_ASM283311v1_genomic.fna |
| <i>Bifidobacterium longum</i> | APC1473 | SAMN07958354 | 2.31707 | 59.8 | 1840 | GCF_002833125.1_ASM283312v1_genomic.fna |
| <i>Bifidobacterium longum</i> | APC1468 | SAMN07958352 | 2.39516 | 60.2 | 1989 | GCF_002833135.1_ASM283313v1_genomic.fna |
| <i>Bifidobacterium longum</i> | APC1465 | SAMN07958350 | 2.45221 | 59.7 | 2012 | GCF_002833175.1_ASM283317v1_genomic.fna |
| <i>Bifidobacterium longum</i> | APC1464 | SAMN07958349 | 2.34652 | 60.1 | 1906 | GCF_002833185.1_ASM283318v1_genomic.fna |
| <i>Bifidobacterium longum</i> | APC1462 | SAMN07958348 | 2.41778 | 60.3 | 1991 | GCF_002833205.1_ASM283320v1_genomic.fna |
| <i>Bifidobacterium longum</i> | DPC6323 | SAMN07958366 | 2.39696 | 60.2 | 1936 | GCF_002833215.1_ASM283321v1_genomic.fna |
| <i>Bifidobacterium longum</i> | DPC6320 | SAMN07958364 | 2.33037 | 59.9 | 1832 | GCF_002833255.1_ASM283325v1_genomic.fna |
| <i>Bifidobacterium longum</i> | APC1476 | SAMN07958355 | 2.53254 | 60   | 2119 | GCF_002833265.1_ASM283326v1_genomic.fna |
| <i>Bifidobacterium longum</i> | APC1466 | SAMN07958351 | 2.41998 | 59.8 | 2003 | GCF_002833285.1_ASM283328v1_genomic.fna |
| <i>Bifidobacterium longum</i> | APC1461 | SAMN07958347 | 2.41899 | 60   | 1888 | GCF_002833315.1_ASM283331v1_genomic.fna |
| <i>Bifidobacterium longum</i> | UMB0788 | SAMN08193649 | 2.45493 | 60.2 | 2042 | GCF_002861445.1_ASM286144v1_genomic.fna |
| <i>Bifidobacterium longum</i> | DS9_3   | SAMN06464100 | 2.39717 | 59.9 | 1980 | GCF_003094635.1_ASM309463v1_genomic.fna |
| <i>Bifidobacterium longum</i> | DS15_3  | SAMN06464097 | 2.39818 | 59.9 | 1981 | GCF_003094855.1_ASM309485v1_genomic.fna |
| <i>Bifidobacterium longum</i> | DS18_3  | SAMN06464098 | 2.44826 | 59.7 | 2022 | GCF_003094935.1_ASM309493v1_genomic.fna |
| <i>Bifidobacterium longum</i> | DS1_3   | SAMN06464096 | 2.41728 | 60   | 1979 | GCF_003094955.1_ASM309495v1_genomic.fna |
| <i>Bifidobacterium longum</i> | DS7_3   | SAMN06464099 | 2.23729 | 60   | 1789 | GCF_003094975.1_ASM309497v1_genomic.fna |
| <i>Bifidobacterium longum</i> | UMA026  | SAMN08102330 | 2.39256 | 60.1 | 1904 | GCF_003130775.1_ASM313077v1_genomic.fna |
| <i>Bifidobacterium longum</i> | N3A01   | SAMN07189849 | 2.30522 | 59.9 | 1733 | GCF_003369995.1_ASM336999v1_genomic.fna |
| <i>Bifidobacterium longum</i> | N6D05   | SAMN07189852 | 2.72332 | 59.7 | 2209 | GCF_003370005.1_ASM337000v1_genomic.fna |

|                               |           |              |         |      |      |   |
|-------------------------------|-----------|--------------|---------|------|------|---|
| <i>Bifidobacterium longum</i> | N2G10     | SAMN07189848 | 2.27838 | 59.8 | 1891 | GCF_003370025.1_ASM337002v1_genomic.fna |
| <i>Bifidobacterium longum</i> | N2F05     | SAMN07189847 | 2.33342 | 59.9 | 1787 | GCF_003370035.1_ASM337003v1_genomic.fna |
| <i>Bifidobacterium longum</i> | N2E12     | SAMN07189846 | 2.34466 | 60   | 1745 | GCF_003370065.1_ASM337006v1_genomic.fna |
| <i>Bifidobacterium longum</i> | W35-1     | SAMN07189845 | 2.29837 | 59.9 | 1761 | GCF_003370095.1_ASM337009v1_genomic.fna |
| <i>Bifidobacterium longum</i> | N5E04     | SAMN07189851 | 2.45599 | 59.3 | 1701 | GCF_003370205.1_ASM337020v1_genomic.fna |
| <i>Bifidobacterium longum</i> | N3E01-2   | SAMN07189850 | 2.34278 | 59.7 | 1716 | GCF_003370225.1_ASM337022v1_genomic.fna |
| <i>Bifidobacterium longum</i> | 239-2     | SAMN07189844 | 2.27516 | 59.7 | 1677 | GCF_003370255.1_ASM337025v1_genomic.fna |
| <i>Bifidobacterium longum</i> | TM04-17   | SAMN09736971 | 2.4148  | 60   | 2013 | GCF_003436505.1_ASM343650v1_genomic.fna |
| <i>Bifidobacterium longum</i> | TM02-7    | SAMN09736966 | 2.39325 | 60.3 | 1927 | GCF_003436595.1_ASM343659v1_genomic.fna |
| <i>Bifidobacterium longum</i> | TF07-39   | SAMN09736908 | 2.45182 | 60.1 | 2017 | GCF_003437095.1_ASM343709v1_genomic.fna |
| <i>Bifidobacterium longum</i> | TF07-34   | SAMN09736907 | 2.3738  | 60.1 | 1910 | GCF_003437105.1_ASM343710v1_genomic.fna |
| <i>Bifidobacterium longum</i> | TF07-31   | SAMN09736906 | 2.44332 | 60   | 2000 | GCF_003437135.1_ASM343713v1_genomic.fna |
| <i>Bifidobacterium longum</i> | TM01-1    | SAMN09736962 | 2.35075 | 60.3 | 1909 | GCF_003437455.1_ASM343745v1_genomic.fna |
| <i>Bifidobacterium longum</i> | TF08-4AC  | SAMN09736919 | 2.4296  | 60.1 | 1954 | GCF_003437695.1_ASM343769v1_genomic.fna |
| <i>Bifidobacterium longum</i> | TF06-45A  | SAMN09736897 | 2.52562 | 59.6 | 2162 | GCF_003437715.1_ASM343771v1_genomic.fna |
| <i>Bifidobacterium longum</i> | TF01-22   | SAMN09736866 | 2.38449 | 60.2 | 1928 | GCF_003437995.1_ASM343799v1_genomic.fna |
| <i>Bifidobacterium longum</i> | OM05-2BH  | SAMN09736802 | 2.43685 | 60.1 | 2042 | GCF_003438385.1_ASM343838v1_genomic.fna |
| <i>Bifidobacterium longum</i> | TF06-12AC | SAMN09736888 | 2.52763 | 59.6 | 2164 | GCF_003438485.1_ASM343848v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AF27-1BH  | SAMN09734529 | 2.33708 | 60.1 | 1892 | GCF_003457975.1_ASM345797v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AF26-10   | SAMN09734508 | 2.34746 | 60.2 | 1913 | GCF_003458335.1_ASM345833v1_genomic.fna |
| <i>Bifidobacterium longum</i> | OF01-16   | SAMN09736665 | 2.2483  | 60   | 1785 | GCF_003463285.1_ASM346328v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AF14-34   | SAMN09734258 | 2.40908 | 60.1 | 1963 | GCF_003464575.1_ASM346457v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AF14-22   | SAMN09734253 | 2.40721 | 60.1 | 1959 | GCF_003464685.1_ASM346468v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AF13-41   | SAMN09734240 | 2.32031 | 60.4 | 1868 | GCF_003464805.1_ASM346480v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AF11-41   | SAMN09734211 | 2.38362 | 60.3 | 1944 | GCF_003465095.1_ASM346509v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AF13-34   | SAMN09734235 | 2.31949 | 60.4 | 1873 | GCF_003465365.1_ASM346536v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AF11-12   | SAMN09734206 | 2.68534 | 60.3 | 2252 | GCF_003465455.1_ASM346545v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AF08-2    | SAMN09734194 | 2.54012 | 60.2 | 2121 | GCF_003465545.1_ASM346554v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AF05-2    | SAMN09734186 | 2.42691 | 60.4 | 2015 | GCF_003465635.1_ASM346563v1_genomic.fna |

|                               |           |              |         |         |      |   |
|-------------------------------|-----------|--------------|---------|---------|------|---|
| <i>Bifidobacterium longum</i> | AF05-16   | SAMN09734185 | 2.42575 | 60.4    | 2017 | GCF_003465665.1_ASM346566v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AF04-13   | SAMN09734175 | 2.37602 | 60.1    | 1913 | GCF_003465745.1_ASM346574v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AF03-27   | SAMN09734172 | 2.44611 | 60.2    | 1939 | GCF_003465785.1_ASM346578v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AF03-20   | SAMN09734170 | 2.44578 | 60.2    | 1935 | GCF_003466045.1_ASM346604v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AF03-10   | SAMN09734168 | 2.44408 | 60.2    | 1936 | GCF_003466075.1_ASM346607v1_genomic.fna |
| <i>Bifidobacterium longum</i> | TM06-1    | SAMN09736986 | 2.40404 | 60.2    | 1941 | GCF_003466425.1_ASM346642v1_genomic.fna |
| <i>Bifidobacterium longum</i> | TM05-14   | SAMN09736978 | 2.50681 | 59.9    | 2090 | GCF_003466505.1_ASM346650v1_genomic.fna |
| <i>Bifidobacterium longum</i> | TM04-48B  | SAMN09736975 | 2.37324 | 60      | 1967 | GCF_003466545.1_ASM346654v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AM39-8AC  | SAMN09736517 | 2.34569 | 60.1    | 1905 | GCF_003467395.1_ASM346739v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AM34-3    | SAMN09736466 | 2.37749 | 60.1    | 1905 | GCF_003467905.1_ASM346790v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AM42-13AT | SAMN09736542 | 2.22637 | 60.1    | 1784 | GCF_003468005.1_ASM346800v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AM39-10AC | SAMN09736509 | 2.23371 | 60      | 1773 | GCF_003468265.1_ASM346826v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AM31-13LB | SAMN09736426 | 2.43452 | 60.2    | 1998 | GCF_003468805.1_ASM346880v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AM30-9LB  | SAMN09736422 | 2.29747 | 60.1    | 1901 | GCF_003468825.1_ASM346882v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AM21-20   | SAMN09734892 | 2.33249 | 60      | 1862 | GCF_003471245.1_ASM347124v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AM20-3    | SAMN09734882 | 2.2981  | 60      | 1808 | GCF_003471345.1_ASM347134v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AM20-39   | SAMN09734884 | 2.29653 | 60      | 1815 | GCF_003471355.1_ASM347135v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AM20-19AC | SAMN09734881 | 2.29489 | 60      | 1807 | GCF_003471385.1_ASM347138v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AM16-2    | SAMN09734826 | 2.28838 | 60      | 1861 | GCF_003471915.1_ASM347191v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AM12-16   | SAMN09734785 | 2.30797 | 60      | 1832 | GCF_003472305.1_ASM347230v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AM11-2    | SAMN09734779 | 2.32334 | 60.2    | 1881 | GCF_003472405.1_ASM347240v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AM10-15B  | SAMN09734765 | 2.41411 | 60.2    | 1973 | GCF_003472605.1_ASM347260v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AM11-5    | SAMN09734782 | 2.35711 | 60.1    | 1911 | GCF_003473205.1_ASM347320v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AF36-1    | SAMN09734632 | 2.37886 | 60.1    | 1944 | GCF_003474905.1_ASM347490v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AF35-13AC | SAMN09734620 | 2.3945  | 60.1    | 1940 | GCF_003475025.1_ASM347502v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AF34-9AC  | SAMN09734618 | 2.4028  | 60      | 1936 | GCF_003475055.1_ASM347505v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AF30-12   | SAMN09734565 | 2.26564 | 59.9    | 1811 | GCF_003475835.1_ASM347583v1_genomic.fna |
| <i>Bifidobacterium longum</i> | AF30-11   | SAMN09734564 | 2.2659  | 59.9    | 1811 | GCF_003475865.1_ASM347586v1_genomic.fna |
| <i>Bifidobacterium longum</i> | ICIS-505  | SAMN06606733 | 2.44884 | 59.8086 | 2001 | GCF_003790375.1_ASM379037v1_genomic.fna |

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|--|---------------------|---------------------|----------------|----------------|-------------|---|
| <i>Bifidobacterium longum</i>                | BB-79               | SAMN08120363        | 2.20609        | 59.9           | 1797        | GCF_004125375.1_ASM412537v1_genomic.fna                             |
| <i>Bifidobacterium longum</i>                | bk_0021             | SAMN10239587        | 2.32045        | 59.9           | 1918        | GCF_004167725.1_ASM416772v1_genomic.fna                             |
| <i>Bifidobacterium longum</i>                | ZJ1                 | SAMN11513273        | 2.41467        | -              | -           | GCF_005406285.1_ASM540628v1_genomic.fna                             |
| <i>Bifidobacterium longum</i>                | BSD2780061688st2_H1 | SAMN10863273        | 2.2799         | 59.9           | -           | GCF_005844115.1_ASM584411v1_genomic.fna                             |
| <i>Bifidobacterium longum</i>                | 1001271st1_B4       | SAMN10863261        | 2.44231        | 60.2           | -           | GCF_005844345.1_ASM584434v1_genomic.fna                             |
| <i>Bifidobacterium longum</i>                | 1001175st1_G10      | SAMN10863239        | 2.33608        | 59.9           | -           | GCF_005844715.1_ASM584471v1_genomic.fna                             |
| <i>Bifidobacterium longum</i>                | Su859               | SAMN04489749        | 2.39298        | 60             | 1872        | GCF_900103055.1_IMG-taxon_2636416037_annotated_assembly_genomic.fna |
| <i>Bifidobacterium longum</i>                | DSM 20219           | SAMN04489748        | 2.44902        | 60.3           | 1945        | GCF_900104835.1_IMG-taxon_2634166334_annotated_assembly_genomic.fna |
| <i>Bifidobacterium longum</i>                | Bifido_09           | SAMEA51821668       | 2.66124        | 59.9           | 2208        | GCF_900157055.1_Bifido_09_v1_genomic.fna                            |
| <i>Bifidobacterium longum</i>                | PC1                 | SAMEA51825418       | 2.79457        | 59.8           | 2389        | GCF_900157065.1_PC1_v1_genomic.fna                                  |
| <i>Bifidobacterium longum</i>                | Bifido_S1           | SAMEA51824668       | 2.81203        | 59.7           | 2410        | GCF_900157075.1_Bifido_S1_v1_genomic.fna                            |
| <i>Bifidobacterium longum</i>                | Bifido_04           | SAMEA51817918       | 2.57939        | 59.7           | 2108        | GCF_900157085.1_Bifido_04_v1_genomic.fna                            |
| <i>Bifidobacterium longum</i>                | Bifido_01           | SAMEA51815668       | 2.33463        | 59.9           | 1907        | GCF_900157095.1_Bifido_01_v1_genomic.fna                            |
| <i>Bifidobacterium longum</i>                | Bifido_05           | SAMEA51818668       | 2.33474        | 59.9           | 1868        | GCF_900157115.1_Bifido_05_v1_genomic.fna                            |
| <i>Bifidobacterium longum</i>                | Bifido_03           | SAMEA51817168       | 2.41363        | 60.1           | 1960        | GCF_900157145.1_Bifido_03_v1_genomic.fna                            |
| <i>Bifidobacterium longum</i>                | Bifido_06           | SAMEA51819418       | 2.42182        | 60             | 1987        | GCF_900157155.1_Bifido_06_v1_genomic.fna                            |
| <i>Bifidobacterium longum</i>                | Bifido_12           | SAMEA51823918       | 2.07288        | 60.5           | 1619        | GCF_900157165.1_Bifido_12_v1_genomic.fna                            |
| <i>Bifidobacterium longum</i>                | PC4                 | SAMEA51826168       | 2.78899        | 59.8           | 2405        | GCF_900157185.1_PC4_v1_genomic.fna                                  |
| <i>Bifidobacterium longum</i>                | Bifido_02           | SAMEA51816418       | 2.33429        | 60.1           | 1844        | GCF_900157195.1_Bifido_02_v1_genomic.fna                            |
| <i>Bifidobacterium longum</i>                | 1                   | SAMEA4827164        | 2.20609        | 59.9           | 1800        | GCF_900519135.1_BB-79_genomic.fna                                   |
| <i>Bifidobacterium longum</i>                | NCTC11818           | SAMEA4412687        | 2.38516        | 60.3           | 1915        | GCF_900637335.1_50618_H02_genomic.fna                               |
| <i>Bifidobacterium longum</i> AGR2137        | AGR2137             | SAMN02441228        | 2.27038        | 59.9           | 1779        | GCF_000421385.1_ASM42138v1_genomic.fna                              |
| <i>Bifidobacterium longum</i> D2957          | D2957               | SAMN02472064        | 2.33023        | 60.4           | 1830        | GCF_000478525.1_blongD2957_genomic.fna                              |
| <i>Bifidobacterium longum</i> DJO10A         | DJO10A              | SAMN02603512        | 2.38953        | 60.1182        | 1946        | GCF_000008945.1_ASM894v1_genomic.fna                                |
| <i>Bifidobacterium longum</i> DJO10A         | DJO10A              | SAMN02441414        | 2.37528        | 59.9           | 1815        | GCF_000166895.2_ASM16689v2_genomic.fna                              |
| <i>Bifidobacterium longum</i> E18            | E18                 | SAMN02471972        | 2.37297        | 60             | 1942        | GCF_000497735.1_BLONGv1.0_genomic.fna                               |
| <b><i>Bifidobacterium longum</i> NCC2705</b> | <b>NCC2705</b>      | <b>SAMN02603675</b> | <b>2.26027</b> | <b>60.1075</b> | <b>1728</b> | <b>GCF_000007525.1_ASM752v1_genomic.fna</b>                         |

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|--|----------------|--------------|---------|------|------|---|
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> | BIC1206122787  | SAMEA2747183 | 2.78904 | 59.8 | 2408 | GCF_000825005.1_BIC1206122787.V1_genomic.fna  |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> | BIC1307292462  | SAMEA2747184 | 2.87962 | 59.9 | 2453 | GCF_000825025.1_BIC1307292462.V1_genomic.fna  |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> | BIC1401111250  | SAMEA2747185 | 2.79389 | 59.8 | 2409 | GCF_000825045.1_BIC1401111250.V1_genomic.fna  |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> | BIC1401212621a | SAMEA2747186 | 2.79157 | 59.8 | 2413 | GCF_000825065.1_BIC1401212621a.V1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> | BIC1401212621b | SAMEA2747187 | 2.82188 | 59.9 | 2429 | GCF_000825085.1_BIC1401212621b.V1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> | BIB1401242951  | SAMEA2747188 | 2.78753 | 59.8 | 2407 | GCF_000825105.1_BIB1401242951.V1_genomic.fna  |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> | BIB1401272845a | SAMEA2747189 | 2.79152 | 59.8 | 2404 | GCF_000825125.1_BIB1401272845a.V1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> | BIB1401272845b | SAMEA2747190 | 2.78684 | 59.8 | 2405 | GCF_000825145.1_BIB1401272845b.V1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> | CECT 7210      | SAMEA3158508 | 2.4677  | 59.9 | 2033 | GCF_001051015.2_ASM105101v2_genomic.fna       |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> | BT1            | SAMN03271683 | 2.57811 | 59.4 | 2035 | GCF_001281305.1_ASM128130v1_genomic.fna       |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> | IN-07          | SAMD00047616 | 2.74983 | 60   | 2170 | GCF_001686105.1_ASM168610v1_genomic.fna       |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> | IN-F29         | SAMD00047617 | 2.64362 | 59.9 | 2106 | GCF_001686125.1_ASM168612v1_genomic.fna       |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> | TPY12-1        | SAMN05578879 | 2.64013 | 59.7 | 2144 | GCF_001870755.1_ASM187075v1_genomic.fna       |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> | 1888B          | SAMN06621708 | 2.57973 | 59.4 | 2038 | GCF_002076025.1_Bbif1888B_genomic.fna         |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> | CECT 7210      | SAMEA3158508 | 2.4677  | 59.9 | 2033 | GCF_002900845.1_ASM290084v1_genomic.fna       |

|  |            |                |         |        |      |  |
|--|------------|----------------|---------|--------|------|--|
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i>                                   | UBBI-01    | SAMN11370925   | 2.73164 | 59.4   | 2259 | GCF_004803425.1_ASM480342v1_genomic.fna    |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i>                                   | Bi-26      | SAMN10380491   | 2.56944 | -      | -    | GCF_004919065.1_ASM491906v1_genomic.fna    |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i>                                   | NCTC13219  | SAMEA104318167 | 2.60259 | 60     | 2224 | GCF_900445755.1_59024_E01_genomic.fna      |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i>                                   | NCTC11817  | SAMEA44530168  | 2.83275 | 59.9   | 2438 | GCF_900637215.1_49888_B01_genomic.fna      |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> 157F                              | 157F       | SAMD00060953   | 2.40883 | 60.111 | 1994 | GCF_000196575.1_ASM19657v1_genomic.fna     |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> ATCC 15697 = JCM 1222 = DSM 20088 | ATCC 15697 | SAMN02598380   | 2.83275 | 59.9   | 2438 | GCF_000020425.1_ASM2042v1_genomic.fna      |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> ATCC 15697 = JCM 1222 = DSM 20088 | JCM 1222   | SAMD00060952   | 2.82896 | 59.9   | 2443 | GCF_000269965.1_ASM26996v1_genomic.fna     |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> ATCC 15697 = JCM 1222 = DSM 20088 | DSM 20088  | SAMN02442011   | 2.78032 | 59.8   | 2386 | GCF_000771105.1_DSM-20088_genomic.fna      |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> CCUG 52486                        | CCUG 52486 | SAMN02463677   | 2.48085 | 60     | 2067 | GCF_000155415.1_ASM15541v1_genomic.fna     |
| <i>Bifidobacterium longum</i> subsp. <i>infantis</i> EK3                               | EK3        | SAMN02862995   | 2.56481 | 59.4   | 2081 | GCF_000730125.1_ASM73012v1_genomic.fna     |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i>                                     | LMG 13197  | SAMN02673437   | 2.3847  | 60.3   | 1852 | GCF_000741245.1_Biflon_sub.lon_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i>                                     | VMKB44     | SAMN03105207   | 2.50193 | 60.3   | 2074 | GCF_000786175.1_ASM78617v1_genomic.fna     |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i>                                     | BLOI2      | SAMN03775040   | 2.41759 | 60     | 1955 | GCF_001275745.1_assBLOI2_genomic.fna       |

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|--|-----------|--------------|---------|------|------|---|
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | NCIMB8809 | SAMN03785818 | 2.34099 | 60.1 | 1855 | GCF_001446255.1_ASM144625v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | CCUG30698 | SAMN03785819 | 2.458   | 60.2 | 2005 | GCF_001446275.1_ASM144627v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | 9         | SAMN04129541 | 2.23377 | 60   | 1789 | GCF_001447955.1_ASM144795v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | 7         | SAMN04129533 | 2.23558 | 60   | 1789 | GCF_001447975.1_ASM144797v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MC-42     | SAMN04263942 | 2.28825 | 59.8 | 1818 | GCF_001516925.1_ASM151692v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | LO-06     | SAMD00047618 | 2.43747 | 60   | 1964 | GCF_001686145.1_ASM168614v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | LO-10     | SAMD00047619 | 2.54024 | 60.3 | 2052 | GCF_001686165.1_ASM168616v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | LO-21     | SAMD00047620 | 2.65603 | 60.1 | 2054 | GCF_001686185.1_ASM168618v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | LO-C29    | SAMD00047621 | 2.48387 | 60   | 1963 | GCF_001686205.1_ASM168620v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | LO-K29a   | SAMD00047622 | 2.44918 | 60   | 1954 | GCF_001686225.1_ASM168622v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | LO-K29b   | SAMD00047623 | 2.37271 | 60.1 | 1891 | GCF_001686245.1_ASM168624v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | AH1206    | SAMN04576213 | 2.42129 | 60.2 | 2007 | GCF_001725985.1_ASM172598v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | 296B      | SAMN05916052 | 2.25318 | 59.9 | 1850 | GCF_001892965.1_ASM189296v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | W11       | SAMN06109230 | 2.32998 | 59.9 | 1844 | GCF_001940535.1_BlonW11v1_genomic.fna   |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | DS32_3    | SAMN08949007 | 2.23593 | 60.1 | 1791 | GCF_003094995.1_ASM309499v1_genomic.fna |

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|--|--------------|--------------|---------|------|------|---|
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | BORI         | SAMN09691177 | 2.31102 | 59.9 | 1804 | GCF_003342655.1_ASM334265v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | VKPM Ac-1636 | SAMN10644101 | 2.32174 | 60.2 | 1890 | GCF_003990235.1_ASM399023v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | C11A10B      | SAMN09355370 | 2.49303 | 60.1 | 2069 | GCF_004324325.1_ASM432432v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10114     | SAMN06368664 | 2.45459 | 59.8 | 2033 | GCF_004332625.1_ASM433262v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10113     | SAMN06368663 | 2.46411 | 60   | 2070 | GCF_004332635.1_ASM433263v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10115     | SAMN06368665 | 2.43372 | 60.3 | 2059 | GCF_004332645.1_ASM433264v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10111     | SAMN06368661 | 2.43826 | 60   | 2059 | GCF_004332655.1_ASM433265v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10108     | SAMN06368660 | 2.41875 | 60.3 | 2005 | GCF_004332665.1_ASM433266v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10101     | SAMN06368655 | 2.41806 | 60.1 | 1976 | GCF_004332725.1_ASM433272v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10106     | SAMN06368658 | 2.41503 | 60.1 | 1976 | GCF_004332735.1_ASM433273v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10099     | SAMN06368653 | 2.34007 | 60.1 | 1916 | GCF_004332745.1_ASM433274v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10102     | SAMN06368656 | 2.53875 | 60.1 | 2101 | GCF_004332755.1_ASM433275v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10107     | SAMN06368659 | 2.38475 | 59.8 | 1971 | GCF_004332765.1_ASM433276v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10097     | SAMN06368651 | 2.28035 | 60   | 1849 | GCF_004332825.1_ASM433282v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10098     | SAMN06368652 | 2.32667 | 59.9 | 1864 | GCF_004332835.1_ASM433283v1_genomic.fna |

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|--|----------|--------------|---------|------|------|---|
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10095 | SAMN06368649 | 2.35682 | 60.3 | 1938 | GCF_004332855.1_ASM433285v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10093 | SAMN06368647 | 2.45894 | 60.2 | 2035 | GCF_004332865.1_ASM433286v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10094 | SAMN06368648 | 2.50962 | 59.9 | 2109 | GCF_004332895.1_ASM433289v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10092 | SAMN06368646 | 2.23483 | 59.9 | 1789 | GCF_004332925.1_ASM433292v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10112 | SAMN06368662 | 2.27757 | 60   | 1848 | GCF_004332935.1_ASM433293v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10116 | SAMN06368666 | 2.62898 | 60   | 2209 | GCF_004332945.1_ASM433294v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10100 | SAMN06368654 | 2.518   | 60.1 | 2081 | GCF_004332965.1_ASM433296v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10103 | SAMN06368657 | 2.39468 | 59.9 | 1976 | GCF_004333005.1_ASM433300v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10091 | SAMN06368645 | 2.39421 | 60   | 1972 | GCF_004333015.1_ASM433301v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10090 | SAMN06368644 | 2.34731 | 59.8 | 1931 | GCF_004333035.1_ASM433303v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10096 | SAMN06368650 | 2.57129 | 59.7 | 2133 | GCF_004333045.1_ASM433304v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10089 | SAMN06368643 | 2.32481 | 60.3 | 1883 | GCF_004333065.1_ASM433306v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10087 | SAMN06368642 | 2.30319 | 60   | 1853 | GCF_004333105.1_ASM433310v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10086 | SAMN06368641 | 2.28382 | 59.8 | 1824 | GCF_004333115.1_ASM433311v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10084 | SAMN06368639 | 2.26435 | 60.1 | 1836 | GCF_004333125.1_ASM433312v1_genomic.fna |

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| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10081 | SAMN06368637 | 2.32346 | 59.9 | 1953 | GCF_004333165.1_ASM433316v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10080 | SAMN06368636 | 2.52893 | 60.2 | 2049 | GCF_004333175.1_ASM433317v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10078 | SAMN06368634 | 2.27198 | 59.8 | 1803 | GCF_004333205.1_ASM433320v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10079 | SAMN06368635 | 2.38272 | 59.9 | 1972 | GCF_004333215.1_ASM433321v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10076 | SAMN06368632 | 2.56355 | 60.2 | 2172 | GCF_004333235.1_ASM433323v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10075 | SAMN06368631 | 2.38497 | 60.1 | 1970 | GCF_004333265.1_ASM433326v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10073 | SAMN06368629 | 2.2843  | 59.7 | 1866 | GCF_004333275.1_ASM433327v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10071 | SAMN06368627 | 2.28772 | 60   | 1831 | GCF_004333305.1_ASM433330v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10070 | SAMN06368626 | 2.50822 | 59.6 | 2069 | GCF_004333325.1_ASM433332v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10069 | SAMN06368625 | 2.36718 | 59.9 | 1925 | GCF_004333335.1_ASM433333v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10068 | SAMN06368624 | 2.40787 | 59.7 | 1940 | GCF_004333365.1_ASM433336v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10067 | SAMN06368623 | 2.39437 | 59.6 | 1950 | GCF_004333375.1_ASM433337v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10066 | SAMN06368622 | 2.29383 | 59.8 | 1889 | GCF_004333385.1_ASM433338v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10064 | SAMN06368621 | 2.26578 | 60   | 1839 | GCF_004333425.1_ASM433342v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10062 | SAMN06368620 | 2.32592 | 59.8 | 1890 | GCF_004333445.1_ASM433344v1_genomic.fna |

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|--|----------|--------------|---------|------|------|---|
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10055 | SAMN06368614 | 2.48603 | 60.1 | 2047 | GCF_004333455.1_ASM433345v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10060 | SAMN06368619 | 2.31311 | 60.2 | 1877 | GCF_004333465.1_ASM433346v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10056 | SAMN06368615 | 2.29975 | 60   | 1886 | GCF_004333475.1_ASM433347v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10053 | SAMN06368612 | 2.42582 | 60.3 | 1993 | GCF_004333515.1_ASM433351v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10052 | SAMN06368611 | 2.42874 | 60.1 | 1986 | GCF_004333535.1_ASM433353v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10050 | SAMN06368609 | 2.28037 | 59.8 | 1827 | GCF_004333555.1_ASM433355v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10048 | SAMN06368608 | 2.45602 | 59.8 | 1993 | GCF_004333565.1_ASM433356v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10046 | SAMN06368606 | 2.28641 | 59.9 | 1810 | GCF_004333575.1_ASM433357v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10045 | SAMN06368605 | 2.43778 | 60.3 | 2022 | GCF_004333625.1_ASM433362v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10043 | SAMN06368603 | 2.62386 | 59.5 | 2152 | GCF_004333635.1_ASM433363v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10044 | SAMN06368604 | 2.51281 | 60.3 | 2087 | GCF_004333645.1_ASM433364v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10042 | SAMN06368602 | 2.32056 | 60.1 | 1913 | GCF_004333675.1_ASM433367v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10041 | SAMN06368601 | 2.37064 | 60.1 | 1942 | GCF_004333695.1_ASM433369v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10035 | SAMN06368596 | 2.4575  | 59.8 | 2058 | GCF_004333715.1_ASM433371v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10036 | SAMN06368597 | 2.24998 | 59.9 | 1850 | GCF_004333735.1_ASM433373v1_genomic.fna |

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|--|----------|--------------|---------|------|------|---|
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10034 | SAMN06368595 | 2.25363 | 60   | 1805 | GCF_004333765.1_ASM433376v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10033 | SAMN06368594 | 2.39204 | 60   | 1955 | GCF_004333775.1_ASM433377v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10031 | SAMN06368593 | 2.40115 | 60.1 | 1959 | GCF_004333785.1_ASM433378v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10029 | SAMN06368591 | 2.3461  | 59.9 | 1915 | GCF_004333795.1_ASM433379v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10025 | SAMN06368588 | 2.40884 | 60.1 | 1951 | GCF_004333845.1_ASM433384v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10023 | SAMN06368587 | 2.30816 | 60.3 | 1875 | GCF_004333855.1_ASM433385v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10021 | SAMN06368585 | 2.23575 | 60   | 1818 | GCF_004333875.1_ASM433387v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10022 | SAMN06368586 | 2.41904 | 59.7 | 2000 | GCF_004333895.1_ASM433389v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10018 | SAMN06368583 | 2.33041 | 60   | 1911 | GCF_004333905.1_ASM433390v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10015 | SAMN06368580 | 2.63029 | 59.9 | 2198 | GCF_004333925.1_ASM433392v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10017 | SAMN06368582 | 2.44883 | 59.7 | 2016 | GCF_004333935.1_ASM433393v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10014 | SAMN06368579 | 2.46621 | 60.2 | 2064 | GCF_004333975.1_ASM433397v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10012 | SAMN06368578 | 2.47987 | 59.6 | 2016 | GCF_004333995.1_ASM433399v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10010 | SAMN06368576 | 2.45245 | 60.4 | 2013 | GCF_004334005.1_ASM433400v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10008 | SAMN06368574 | 2.54367 | 60   | 2151 | GCF_004334035.1_ASM433403v1_genomic.fna |

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|--|----------|--------------|---------|------|------|---|
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10007 | SAMN06368573 | 2.48463 | 60.2 | 2046 | GCF_004334045.1_ASM433404v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10004 | SAMN06368571 | 2.55173 | 60   | 2072 | GCF_004334065.1_ASM433406v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10003 | SAMN06368570 | 2.52677 | 60.1 | 2074 | GCF_004334075.1_ASM433407v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10085 | SAMN06368640 | 2.3663  | 60   | 1931 | GCF_004334105.1_ASM433410v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10083 | SAMN06368638 | 2.47557 | 60.2 | 1987 | GCF_004334145.1_ASM433414v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10077 | SAMN06368633 | 2.41162 | 60   | 1998 | GCF_004334155.1_ASM433415v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10074 | SAMN06368630 | 2.41001 | 59.8 | 2024 | GCF_004334165.1_ASM433416v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10072 | SAMN06368628 | 2.23388 | 60   | 1785 | GCF_004334205.1_ASM433420v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10058 | SAMN06368617 | 2.32956 | 60.2 | 1909 | GCF_004334215.1_ASM433421v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10059 | SAMN06368618 | 2.43718 | 60   | 2054 | GCF_004334235.1_ASM433423v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10054 | SAMN06368613 | 2.29564 | 60   | 1885 | GCF_004334245.1_ASM433424v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10057 | SAMN06368616 | 2.18862 | 59.9 | 1764 | GCF_004334255.1_ASM433425v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10051 | SAMN06368610 | 2.30363 | 60.1 | 1882 | GCF_004334285.1_ASM433428v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10047 | SAMN06368607 | 2.36451 | 59.9 | 1898 | GCF_004334325.1_ASM433432v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10039 | SAMN06368599 | 2.38905 | 60   | 1956 | GCF_004334335.1_ASM433433v1_genomic.fna |

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| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10040 | SAMN06368600 | 2.44996 | 60.2 | 2042 | GCF_004334345.1_ASM433434v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10030 | SAMN06368592 | 2.51844 | 60.1 | 2049 | GCF_004334355.1_ASM433435v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10038 | SAMN06368598 | 2.36701 | 59.9 | 2007 | GCF_004334365.1_ASM433436v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10028 | SAMN06368590 | 2.42541 | 60.2 | 2022 | GCF_004334425.1_ASM433442v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10019 | SAMN06368584 | 2.30453 | 60.1 | 1888 | GCF_004334435.1_ASM433443v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10027 | SAMN06368589 | 2.50583 | 59.9 | 2081 | GCF_004334445.1_ASM433444v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10016 | SAMN06368581 | 2.37118 | 60   | 1930 | GCF_004334465.1_ASM433446v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10011 | SAMN06368577 | 2.39746 | 59.9 | 1961 | GCF_004334485.1_ASM433448v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10009 | SAMN06368575 | 2.5237  | 60.1 | 2061 | GCF_004334515.1_ASM433451v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10006 | SAMN06368572 | 2.45014 | 60.4 | 2026 | GCF_004334535.1_ASM433453v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10002 | SAMN06368569 | 2.63451 | 60   | 2226 | GCF_004334545.1_ASM433454v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10212 | SAMN06368681 | 2.36547 | 59.9 | 1943 | GCF_004334555.1_ASM433455v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10127 | SAMN06368677 | 2.35673 | 60.1 | 1914 | GCF_004334615.1_ASM433461v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10130 | SAMN06368680 | 2.36857 | 60   | 1931 | GCF_004334625.1_ASM433462v1_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> | MCC10126 | SAMN06368676 | 2.55307 | 59.8 | 2096 | GCF_004334635.1_ASM433463v1_genomic.fna |

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|--|----------|--------------|---------|------|------|--|
| <i>Bifidobacterium longum</i> subsp. <i>longum</i>       | MCC10124 | SAMN06368674 | 2.45702 | 60.1 | 2015 | GCF_004334645.1_ASM433464v1_genomic.fna    |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i>       | MCC10121 | SAMN06368671 | 2.38447 | 60   | 1954 | GCF_004334695.1_ASM433469v1_genomic.fna    |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i>       | MCC10118 | SAMN06368668 | 2.34975 | 59.9 | 1934 | GCF_004334705.1_ASM433470v1_genomic.fna    |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i>       | MCC10120 | SAMN06368670 | 2.48377 | 60.2 | 2047 | GCF_004334715.1_ASM433471v1_genomic.fna    |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i>       | MCC10117 | SAMN06368667 | 2.30167 | 59.9 | 1829 | GCF_004334745.1_ASM433474v1_genomic.fna    |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i>       | MCC10129 | SAMN06368679 | 2.27353 | 60.1 | 1854 | GCF_004334775.1_ASM433477v1_genomic.fna    |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i>       | MCC10128 | SAMN06368678 | 2.50961 | 59.9 | 2112 | GCF_004334785.1_ASM433478v1_genomic.fna    |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i>       | MCC10125 | SAMN06368675 | 2.44774 | 60.2 | 2011 | GCF_004334795.1_ASM433479v1_genomic.fna    |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i>       | MCC10123 | SAMN06368673 | 2.5065  | 59.7 | 2074 | GCF_004334815.1_ASM433481v1_genomic.fna    |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i>       | MCC10122 | SAMN06368672 | 2.46043 | 60.1 | 1999 | GCF_004334855.1_ASM433485v1_genomic.fna    |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i>       | MCC10119 | SAMN06368669 | 2.48689 | 60.1 | 2074 | GCF_004334865.1_ASM433486v1_genomic.fna    |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> 1-5B  | 1-5B     | SAMN02862991 | 2.36751 | 60.1 | 1929 | GCF_000730105.1_ASM73010v1_genomic.fna     |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> 1-6B  | 1-6B     | SAMN00829154 | 2.68677 | 59.6 | 2233 | GCF_000261245.1_Blongum16Bv1.0_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> 17-1B | 17-1B    | SAMN02862993 | 2.4672  | 60.2 | 1983 | GCF_000730035.1_ASM73003v1_genomic.fna     |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> 2-2B  | 2-2B     | SAMN00829155 | 2.6257  | 59.7 | 2111 | GCF_000261205.1_Blongum22Bv1.0_genomic.fna |

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|---|------------|--------------|---------|---------|------|--|
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> 35B        | 35B        | SAMN00829158 | 2.51443 | 60.1    | 2000 | GCF_000261225.1_Blongum35Bv1.0_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> 44B        | 44B        | SAMN00829148 | 2.55922 | 59.7    | 2144 | GCF_000261265.1_Blongum44Bv1.0_genomic.fna |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> 7-1B       | 7-1B       | SAMN02862992 | 2.40709 | 59.8    | 1939 | GCF_000730055.1_ASM73005v1_genomic.fna     |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> 72B        | 72B        | SAMN02862994 | 2.37445 | 60.3    | 1961 | GCF_000730045.1_ASM73004v1_genomic.fna     |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> ATCC 55813 | ATCC 55813 | SAMN00001475 | 2.39636 | 60.1    | 1908 | GCF_000003135.1_ASM313v1_genomic.fna       |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> BBMN68     | BBMN68     | SAMN02603469 | 2.26594 | 59.9    | 1809 | GCF_000166315.1_ASM16631v1_genomic.fna     |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> CECT 7347  | CECT 7347  | SAMEA3146249 | 2.32722 | 60      | 1855 | GCF_001050555.1_ASM105055v1_genomic.fna    |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> CMCC P0001 | CMCC P0001 | SAMN02470970 | 2.42435 | 59.7    | 1892 | GCF_000410595.1_ASM41059v1_genomic.fna     |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> EK13       | EK13       | SAMN02862997 | 2.47453 | 60      | 2067 | GCF_000730135.1_ASM73013v1_genomic.fna     |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> EK5        | EK5        | SAMN02862996 | 2.23129 | 59.7    | 1795 | GCF_000730025.1_ASM73002v1_genomic.fna     |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> F8         | F8         | SAMEA3138379 | 2.38499 | 59.9    | 1929 | GCF_000210755.1_ASM21075v1_genomic.fna     |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> GT15       | GT15       | SAMN03093230 | 2.33752 | 60      | 1844 | GCF_000772485.1_ASM77248v1_genomic.fna     |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> JCM 1217   | JCM 1217   | SAMD00060951 | 2.38516 | 60.3    | 1920 | GCF_000196555.1_ASM19655v1_genomic.fna     |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> JDM301     | JDM301     | SAMN02603181 | 2.47784 | 59.8    | 1955 | GCF_000092325.1_ASM9232v1_genomic.fna      |
| <i>Bifidobacterium longum</i> subsp. <i>longum</i> KACC 91563 | KACC 91563 | SAMN02603656 | 2.39576 | 59.8115 | 1906 | GCF_000219455.1_ASM21945v1_genomic.fna     |

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|---|-----------|----------------|---------|------|------|---|
| <i>Bifidobacterium longum</i> subsp. <i>suis</i>              | LMG 21814 | SAMN02673438   | 2.33583 | 60   | 1823 | GCF_000741625.1_Biflon_sub.sui_genomic.fna                              |
| <i>Bifidobacterium longum</i> subsp. <i>suis</i>              | BSM11-5   | SAMN05578880   | 2.60288 | 59.9 | 2043 | GCF_001870705.1_ASM187070v1_genomic.fna                                 |
| <i>Bifidobacterium longum</i> subsp. <i>suis</i><br>DSM 20211 | DSM 20211 | SAMN02442020   | 2.38997 | 60   | 1885 | GCF_000771285.1_DSM-20211_genomic.fna                                   |
| <i>Bifidobacterium magnum</i>                                 | LMG 11591 | SAMN02673439   | 1.82248 | 58.7 | 1462 | GCF_000741255.1_Bifmag_genomic.fna                                      |
| <i>Bifidobacterium magnum</i> DSM<br>20222                    | DSM 20222 | SAMN02441586   | 1.82526 | 58.7 | 1476 | GCF_000420565.1_ASM42056v1_genomic.fna                                  |
| <i>Bifidobacterium magnum</i> DSM<br>20222                    | DSM 20222 | SAMN02442024   | 1.81923 | 58.7 | 1473 | GCF_000771365.1_DSM-20222_genomic.fna                                   |
| <i>Bifidobacterium merycicum</i>                              | LMG 11341 | SAMN02673440   | 2.28023 | 60.3 | 1710 | GCF_000741615.1_Bifmer_genomic.fna                                      |
| <i>Bifidobacterium merycicum</i>                              | RUG133    | SAMEA104666290 | 1.90377 | 61.1 | 1424 | GCF_900315825.1_Rumen_uncultured_genome_RUG133_genomic.fna              |
| <i>Bifidobacterium merycicum</i> DSM<br>6492                  | DSM 6492  | SAMN02442042   | 2.27843 | 60.3 | 1734 | GCF_000770945.1_DSM-6492_genomic.fna                                    |
| <i>Bifidobacterium merycicum</i> DSM<br>6492                  | DSM 6492  | SAMN02745589   | 2.27468 | 60.4 | 1745 | GCF_900129045.1_IMG-<br>taxon_2563366502_annotated_assembly_genomic.fna |
| <i>Bifidobacterium minimum</i>                                | LMG 11592 | SAMN02673441   | 1.89286 | 62.7 | 1434 | GCF_000741645.1_Bifmin_genomic.fna                                      |
| <i>Bifidobacterium minimum</i> DSM<br>20102                   | DSM 20102 | SAMN02440587   | 1.86732 | 62.7 | 1447 | GCF_000421685.1_ASM42168v1_genomic.fna                                  |
| <i>Bifidobacterium minimum</i> DSM<br>20102                   | DSM 20102 | SAMN02442018   | 1.86381 | 62.7 | 1435 | GCF_000771245.1_DSM-20102_genomic.fna                                   |
| <i>Bifidobacterium mongoliense</i>                            | BMONG18   | SAMN09711768   | 2.13251 | 62.7 | 1658 | GCF_003788965.1_ASM378896v1_genomic.fna                                 |
| <i>Bifidobacterium mongoliense</i> DSM<br>21395               | DSM 21395 | SAMN02673442   | 2.17049 | 62.8 | 1674 | GCF_000741285.1_Bifmon_genomic.fna                                      |
| <i>Bifidobacterium mongoliense</i> DSM<br>21395               | DSM 21395 | SAMN02442032   | 2.15405 | 62.8 | 1686 | GCF_000771525.1_DSM-21395_genomic.fna                                   |
| <i>Bifidobacterium moukalabense</i>                           | GG01      | SAMD00158983   | 2.52266 | 59.9 | -    | GCF_005405645.1_ASM540564v1_genomic.fna                                 |
| <i>Bifidobacterium moukalabense</i>                           | GB01      | SAMD00158984   | 2.52308 | 59.9 | -    | GCF_005405665.1_ASM540566v1_genomic.fna                                 |
| <i>Bifidobacterium moukalabense</i>                           | GB03      | SAMD00158985   | 2.52357 | 59.9 | -    | GCF_005405685.1_ASM540568v1_genomic.fna                                 |
| <i>Bifidobacterium moukalabense</i>                           | GB04      | SAMD00158986   | 2.52286 | 59.9 | -    | GCF_005405705.1_ASM540570v1_genomic.fna                                 |
| <i>Bifidobacterium moukalabense</i>                           | GB62      | SAMD00158987   | 2.54813 | 59.8 | -    | GCF_005405725.1_ASM540572v1_genomic.fna                                 |

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|--|------------------|---------------------|----------------|-------------|-------------|---|
| <i>Bifidobacterium moukalabense</i>                      | GB63             | SAMD00158988        | 2.54573        | 59.8        | -           | GCF_005405745.1_ASM540574v1_genomic.fna     |
| <i>Bifidobacterium moukalabense</i>                      | GB65             | SAMD00158989        | 2.59608        | 59.9        | -           | GCF_005405765.1_ASM540576v1_genomic.fna     |
| <i>Bifidobacterium moukalabense</i>                      | CD14             | SAMD00158990        | 2.4513         | 59.8        | -           | GCF_005405785.1_ASM540578v1_genomic.fna     |
| <i>Bifidobacterium moukalabense</i>                      | CD16             | SAMD00158991        | 2.40562        | 59.8        | -           | GCF_005405805.1_ASM540580v1_genomic.fna     |
| <i>Bifidobacterium moukalabense</i>                      | CD33             | SAMD00158992        | 2.51575        | 59.9        | -           | GCF_005405825.1_ASM540582v1_genomic.fna     |
| <i>Bifidobacterium moukalabense</i>                      | EB43             | SAMD00158993        | 2.45141        | 59.8        | -           | GCF_005405845.1_ASM540584v1_genomic.fna     |
| <i>Bifidobacterium moukalabense</i>                      | EB44             | SAMD00158994        | 2.40379        | 59.8        | -           | GCF_005405865.1_ASM540586v1_genomic.fna     |
| <b><i>Bifidobacterium moukalabense</i><br/>DSM 27321</b> | <b>DSM 27321</b> | <b>SAMN02641635</b> | <b>2.51533</b> | <b>59.9</b> | <b>1987</b> | <b>GCF_000522505.1_DSM27321_genomic.fna</b> |
| <i>Bifidobacterium pseudocatenulatum</i>                 | 121.5            | SAMN04497914        | 1.24379        | 56.7        | 986         | GCA_001576885.1_ASM157688v1_genomic.fna     |
| <i>Bifidobacterium pseudocatenulatum</i>                 | CF01-1           | SAMN09736656        | 2.37824        | 56.4        | 1541        | GCA_003463615.1_ASM346361v1_genomic.fna     |
| <i>Bifidobacterium pseudocatenulatum</i>                 | CECT 7765        | SAMEA2743237        | 2.25434        | 56.4        | 1735        | GCF_000940535.1_BPSEU7765_v1_genomic.fna    |
| <i>Bifidobacterium pseudocatenulatum</i>                 | 2789STDY5834840  | SAMEA3545306        | 2.30387        | 56.5        | 1871        | GCF_001405035.1_13470_2_59_genomic.fna      |
| <i>Bifidobacterium pseudocatenulatum</i>                 | CA-05            | SAMD00047609        | 2.22312        | 56.4        | 1679        | GCF_001685965.1_ASM168596v1_genomic.fna     |
| <i>Bifidobacterium pseudocatenulatum</i>                 | CA-B29           | SAMD00047610        | 2.3007         | 56.4        | 1761        | GCF_001685985.1_ASM168598v1_genomic.fna     |
| <i>Bifidobacterium pseudocatenulatum</i>                 | CA-C29           | SAMD00047611        | 2.18207        | 56.3        | 1669        | GCF_001686005.1_ASM168600v1_genomic.fna     |
| <i>Bifidobacterium pseudocatenulatum</i>                 | CA-D29           | SAMD00047612        | 2.26468        | 56.3        | 1750        | GCF_001686025.1_ASM168602v1_genomic.fna     |
| <i>Bifidobacterium pseudocatenulatum</i>                 | CA-K29a          | SAMD00047613        | 2.45851        | 56.4        | 1952        | GCF_001686045.1_ASM168604v1_genomic.fna     |
| <i>Bifidobacterium pseudocatenulatum</i>                 | CA-K29b          | SAMD00047614        | 2.45334        | 56.7        | 1945        | GCF_001686065.1_ASM168606v1_genomic.fna     |
| <i>Bifidobacterium pseudocatenulatum</i>                 | 1896B            | SAMN06621714        | 2.19747        | 56.2        | 1673        | GCF_002075945.1_Bbif1896B_genomic.fna       |
| <i>Bifidobacterium pseudocatenulatum</i>                 | 1E               | SAMN05933032        | 2.37266        | 56.9        | 1848        | GCF_002271255.1_Bpse1Ev1_genomic.fna        |
| <i>Bifidobacterium pseudocatenulatum</i>                 | TM10-1           | SAMN09737021        | 2.22534        | 56.2        | 1704        | GCF_003436025.1_ASM343602v1_genomic.fna     |
| <i>Bifidobacterium pseudocatenulatum</i>                 | TM08-2           | SAMN09737009        | 2.33019        | 56.5        | 1539        | GCF_003436105.1_ASM343610v1_genomic.fna     |
| <i>Bifidobacterium pseudocatenulatum</i>                 | TM07-3AT         | SAMN09737005        | 2.24252        | 56.3        | 1707        | GCF_003436315.1_ASM343631v1_genomic.fna     |
| <i>Bifidobacterium pseudocatenulatum</i>                 | TM04-13          | SAMN09736969        | 2.26457        | 56.5        | 1735        | GCF_003436545.1_ASM343654v1_genomic.fna     |
| <i>Bifidobacterium pseudocatenulatum</i>                 | TM01-4           | SAMN09736963        | 2.18974        | 56.3        | 1289        | GCF_003436675.1_ASM343667v1_genomic.fna     |
| <i>Bifidobacterium pseudocatenulatum</i>                 | TF08-3AT         | SAMN09736917        | 2.26167        | 56.3        | 1756        | GCF_003436955.1_ASM343695v1_genomic.fna     |
| <i>Bifidobacterium pseudocatenulatum</i>                 | TF07-45          | SAMN09736909        | 2.38374        | 56.6        | 1890        | GCF_003437075.1_ASM343707v1_genomic.fna     |
| <i>Bifidobacterium pseudocatenulatum</i>                 | TF07-23          | SAMN09736905        | 2.33833        | 56.7        | 1809        | GCF_003437155.1_ASM343715v1_genomic.fna     |

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| <i>Bifidobacterium pseudocatenulatum</i> | TM05-11     | SAMN09736977 | 2.29419 | 56.4 | 1806 | GCF_003437435.1_ASM343743v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | TF05-2AC    | SAMN09736882 | 2.20629 | 56.6 | 1725 | GCF_003437825.1_ASM343782v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | TF05-19AC   | SAMN09736879 | 2.1764  | 56.4 | 1680 | GCF_003437835.1_ASM343783v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | OM10-8      | SAMN09736863 | 2.20095 | 56.3 | 1382 | GCF_003438015.1_ASM343801v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | OM05-2      | SAMN09736800 | 2.3654  | 56.6 | 1856 | GCF_003438405.1_ASM343840v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | OF05-12     | SAMN09736713 | 2.36975 | 56.8 | 1898 | GCF_003439655.1_ASM343965v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | AF26-1      | SAMN09734507 | 2.1833  | 56.6 | 1712 | GCF_003458965.1_ASM345896v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | AF20-20AC   | SAMN09734414 | 2.24914 | 56.5 | 1745 | GCF_003459475.1_ASM345947v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | AF18-2AC    | SAMN09734359 | 2.37026 | 56.7 | 1521 | GCF_003459865.1_ASM345986v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | AF17-20AC   | SAMN09734331 | 2.23889 | 56.2 | 1713 | GCF_003460425.1_ASM346042v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | OF01-21AC   | SAMN09736671 | 2.25277 | 56.5 | 1431 | GCF_003463265.1_ASM346326v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | OF01-8      | SAMN09736676 | 2.28785 | 56.6 | 1795 | GCF_003463425.1_ASM346342v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | OF01-2      | SAMN09736669 | 2.24892 | 56.5 | 1740 | GCF_003463455.1_ASM346345v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | OF01-12     | SAMN09736662 | 2.28465 | 56.6 | 1793 | GCF_003463505.1_ASM346350v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | AF12-8LB-d  | SAMN09734227 | 2.20298 | 56.2 | 1702 | GCF_003464925.1_ASM346492v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | AF12-10-6.0 | SAMN09734213 | 2.20223 | 56.2 | 1706 | GCF_003465065.1_ASM346506v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | AF11-18     | SAMN09734208 | 2.26795 | 56.2 | 1745 | GCF_003465135.1_ASM346513v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | AF12-8A-LB  | SAMN09734226 | 2.20378 | 56.2 | 1702 | GCF_003465385.1_ASM346538v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | AF03-28     | SAMN09734173 | 2.36028 | 56.6 | 1835 | GCF_003465775.1_ASM346577v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | AF02-36-1   | SAMN09734165 | 2.1851  | 56.3 | 1669 | GCF_003466105.1_ASM346610v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | AM43-10     | SAMN09736560 | 2.19896 | 56.5 | 1682 | GCF_003467065.1_ASM346706v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | AM38-8      | SAMN09736506 | 2.30925 | 56.2 | 1786 | GCF_003467515.1_ASM346751v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | AM36-5BH    | SAMN09736486 | 2.1639  | 56.2 | 1676 | GCF_003467755.1_ASM346775v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | AM36-2AC    | SAMN09736481 | 2.16318 | 56.2 | 1675 | GCF_003467785.1_ASM346778v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | AM33-6      | SAMN09736456 | 2.26145 | 56.4 | 1764 | GCF_003468555.1_ASM346855v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | AM26-14LB   | SAMN09736330 | 2.21856 | 56.2 | 1724 | GCF_003470125.1_ASM347012v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | AM19-19     | SAMN09734878 | 2.18198 | 56.1 | 1374 | GCF_003470545.1_ASM347054v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | AM20-9-6.0  | SAMN09734886 | 2.15943 | 56.3 | 1684 | GCF_003471295.1_ASM347129v1_genomic.fna |
| <i>Bifidobacterium pseudocatenulatum</i> | AM20-6      | SAMN09734885 | 2.23064 | 56.6 | 1773 | GCF_003471325.1_ASM347132v1_genomic.fna |

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|--|-----------------|---------------------|----------------|-------------|-------------|--|
| <i>Bifidobacterium pseudocatenulatum</i>   | AM20-1          | SAMN09734879        | 2.23797        | 56.6        | 1771        | GCF_003471415.1_ASM347141v1_genomic.fna        |
| <i>Bifidobacterium pseudocatenulatum</i>   | AM18-42         | SAMN09734871        | 2.22506        | 56.2        | 1695        | GCF_003471505.1_ASM347150v1_genomic.fna        |
| <i>Bifidobacterium pseudocatenulatum</i>   | AM11-10         | SAMN09734778        | 2.33619        | 56.5        | 1848        | GCF_003472415.1_ASM347241v1_genomic.fna        |
| <i>Bifidobacterium pseudocatenulatum</i>   | AM10-24         | SAMN09734769        | 2.14238        | 56.4        | 1662        | GCF_003472545.1_ASM347254v1_genomic.fna        |
| <i>Bifidobacterium pseudocatenulatum</i>   | AM10-2          | SAMN09734766        | 2.14287        | 56.4        | 1661        | GCF_003472575.1_ASM347257v1_genomic.fna        |
| <i>Bifidobacterium pseudocatenulatum</i>   | AM08-25         | SAMN09734749        | 2.33946        | 56.4        | 1787        | GCF_003472685.1_ASM347268v1_genomic.fna        |
| <i>Bifidobacterium pseudocatenulatum</i>   | AM08-2          | SAMN09734748        | 2.32705        | 56.5        | 1779        | GCF_003472725.1_ASM347272v1_genomic.fna        |
| <i>Bifidobacterium pseudocatenulatum</i>   | AM13-8          | SAMN09734801        | 2.21638        | 56.3        | 1717        | GCF_003473025.1_ASM347302v1_genomic.fna        |
| <i>Bifidobacterium pseudocatenulatum</i>   | AM13-2          | SAMN09734796        | 2.21441        | 56.3        | 1715        | GCF_003473115.1_ASM347311v1_genomic.fna        |
| <i>Bifidobacterium pseudocatenulatum</i>   | AF45-10BH       | SAMN09734713        | 2.27871        | 56.6        | 1485        | GCF_003474015.1_ASM347401v1_genomic.fna        |
| <i>Bifidobacterium pseudocatenulatum</i>   | AF41-3MH        | SAMN09734692        | 2.26022        | 56.5        | 1378        | GCF_003474525.1_ASM347452v1_genomic.fna        |
| <i>Bifidobacterium pseudocatenulatum</i>   | AF36-12AT       | SAMN09734638        | 2.35922        | 56.6        | 1889        | GCF_003474835.1_ASM347483v1_genomic.fna        |
| <i>Bifidobacterium pseudocatenulatum</i>   | 12              | SAMN08116046        | 2.19239        | 56.5        | 1657        | GCF_003952825.1_ASM395282v1_genomic.fna        |
| <i>Bifidobacterium pseudocatenulatum</i>   | ca_0067         | SAMN10239588        | 2.10619        | 56.3        | 1626        | GCF_004167565.1_ASM416756v1_genomic.fna        |
| <i>Bifidobacterium pseudocatenulatum</i>   | 1001271st1_F3   | SAMN10863262        | 2.18083        | 56.2        | -           | GCF_005844335.1_ASM584433v1_genomic.fna        |
| <i>Bifidobacterium pseudocatenulatum</i><br>DSM 20438 = JCM 1200 = LMG 10505     | DSM 20438       | SAMN00008796        | 2.30481        | 56.3        | 1750        | GCF_000173435.1_ASM17343v1_genomic.fna         |
| <i>Bifidobacterium pseudocatenulatum</i><br>DSM 20438 = JCM 1200 = LMG 10505     | LMG 10505       | SAMN02673443        | 2.28377        | 56.4        | 1700        | GCF_000741685.1_Bifpsetum_genomic.fna          |
| <i>Bifidobacterium pseudocatenulatum</i><br>DSM 20438 = JCM 1200 = LMG 10505     | DSM 20438       | SAMN02442029        | 2.28449        | 56.4        | 1746        | GCF_000771445.1_DSM-20438_genomic.fna          |
| <b><i>Bifidobacterium pseudocatenulatum</i> DSM 20438 = JCM 1200 = LMG 10505</b> | <b>JCM 1200</b> | <b>SAMD00061045</b> | <b>2.31375</b> | <b>56.4</b> | <b>1759</b> | <b>GCF_001025215.1_ASM102521v1_genomic.fna</b> |
| <i>Bifidobacterium pseudocatenulatum</i><br>IPLA36007                            | IPLA36007       | SAMN02649570        | 2.32818        | 56.3        | 1814        | GCF_000708005.1_B.p.IPLA36007_genomic.fna      |
| <i>Bifidobacterium pseudolongum</i>  | UBA1157         | SAMN06457169        | 1.82503        | 62.1        | -           | GCA_002311215.1_ASM231121v1_genomic.fna        |

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|---|--------------|---------------------|---------------|-------------|-------------|---|
| <i>Bifidobacterium pseudolongum</i>                           | UMB-MBP-01   | SAMN07357905        | 2.0081        | 63.4        | 1585        | GCF_002282915.1_ASM228291v1_genomic.fna       |
| <i>Bifidobacterium pseudolongum</i>                           | AF13-3LB     | SAMN09734239        | 2.21544       | 63          | 1798        | GCF_003464845.1_ASM346484v1_genomic.fna       |
| <i>Bifidobacterium pseudolongum</i>                           | WYJ21-P61    | SAMN10024806        | 2.05379       | 63.3        | 1658        | GCF_003612445.1_ASM361244v1_genomic.fna       |
| <i>Bifidobacterium pseudolongum</i>                           | NM87_A27A    | SAMN11366404        | 2.21056       | 63.2        | 1787        | GCF_004801625.1_ASM480162v1_genomic.fna       |
| <i>Bifidobacterium pseudolongum</i><br>AGR2145                | AGR2145      | SAMN02440890        | 1.9922        | 63.3        | 1566        | GCF_000421365.1_ASM42136v1_genomic.fna        |
| <b><i>Bifidobacterium pseudolongum</i></b><br><b>PV8-2</b>    | <b>PV8-2</b> | <b>SAMN03253091</b> | <b>2.0327</b> | <b>63.3</b> | <b>1608</b> | <b>GCF_000800475.2_ASM80047v2_genomic.fna</b> |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | LMG 11569    | SAMN02673444        | 1.93525       | 63.4        | 1512        | GCF_000741295.1_Bifpse_sub.glo_genomic.fna    |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 1744B        | SAMN07731043        | 2.14358       | 63.1        | 1674        | GCF_002846675.1_ASM284667v1_genomic.fna       |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 1619B        | SAMN07731042        | 2.05041       | 63.3        | 1637        | GCF_002846685.1_ASM284668v1_genomic.fna       |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 1549B        | SAMN07731038        | 1.9902        | 63.2        | 1569        | GCF_002846715.1_ASM284671v1_genomic.fna       |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 1520B        | SAMN07731037        | 2.00848       | 63.1        | 1575        | GCF_002846775.1_ASM284677v1_genomic.fna       |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 1524B        | SAMN07731045        | 2.06241       | 63.1        | 1634        | GCF_002846815.1_ASM284681v1_genomic.fna       |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 1747B        | SAMN07731044        | 2.14308       | 63.2        | 1722        | GCF_002846835.1_ASM284683v1_genomic.fna       |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 1734B        | SAMN07731041        | 2.11186       | 63.3        | 1692        | GCF_002846845.1_ASM284684v1_genomic.fna       |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 1691B        | SAMN07731040        | 2.14872       | 63.1        | 1679        | GCF_002846875.1_ASM284687v1_genomic.fna       |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2114B        | SAMN10615463        | 2.0472        | 63.1        | 1598        | GCF_004154995.1_ASM415499v1_genomic.fna       |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2083B        | SAMN10615453        | 2.05982       | 63.1        | 1616        | GCF_004155045.1_ASM415504v1_genomic.fna       |

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|---|--------|--------------|---------|------|------|---|
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2019B  | SAMN10615444 | 1.94314 | 63.3 | 1538 | GCF_004155095.1_ASM415509v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2004B  | SAMN10615440 | 1.91072 | 63.3 | 1507 | GCF_004155115.1_ASM415511v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2071B  | SAMN10615451 | 2.08465 | 63.2 | 1687 | GCF_004155135.1_ASM415513v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2012B  | SAMN10615442 | 2.07061 | 63.3 | 1682 | GCF_004155145.1_ASM415514v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 1678B  | SAMN10615431 | 2.03349 | 63   | 1606 | GCF_004155155.1_ASM415515v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2029B  | SAMN10615446 | 2.13264 | 63.1 | 1671 | GCF_004155165.1_ASM415516v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 1511B  | SAMN10615419 | 1.97106 | 63.2 | 1542 | GCF_004155235.1_ASM415523v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2017B  | SAMN10615443 | 2.18994 | 63   | 1812 | GCF_004155275.1_ASM415527v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2000B  | SAMN10615436 | 2.11231 | 63.2 | 1710 | GCF_004155285.1_ASM415528v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2113B  | SAMN10615462 | 1.99635 | 63.1 | 1581 | GCF_004155295.1_ASM415529v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2003B  | SAMN10615439 | 2.1486  | 63.2 | 1741 | GCF_004155305.1_ASM415530v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 22506  | SAMN10615465 | 1.91307 | 63.3 | 1494 | GCF_004155325.1_ASM415532v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 1805B  | SAMN10615435 | 2.1027  | 63.1 | 1672 | GCF_004155375.1_ASM415537v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 102017 | SAMN10615468 | 1.88411 | 63.2 | 1487 | GCF_004155405.1_ASM415540v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 102015 | SAMN10615467 | 1.91818 | 63.1 | 1524 | GCF_004155425.1_ASM415542v1_genomic.fna |

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|---|-------|--------------|---------|------|------|---|
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 22511 | SAMN10615466 | 2.01887 | 62.9 | 1572 | GCF_004155435.1_ASM415543v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2109B | SAMN10615461 | 2.03922 | 63.2 | 1617 | GCF_004155475.1_ASM415547v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2098B | SAMN10615458 | 1.99835 | 63.1 | 1580 | GCF_004155495.1_ASM415549v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2105B | SAMN10615460 | 1.96489 | 63.3 | 1553 | GCF_004155505.1_ASM415550v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2089B | SAMN10615456 | 2.04748 | 63.1 | 1586 | GCF_004155525.1_ASM415552v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2093B | SAMN10615457 | 2.13296 | 63.1 | 1684 | GCF_004155535.1_ASM415553v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2072B | SAMN10615452 | 2.08284 | 63.2 | 1685 | GCF_004155565.1_ASM415556v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2048B | SAMN10615448 | 2.03004 | 63.3 | 1637 | GCF_004155595.1_ASM415559v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2032B | SAMN10615447 | 2.13219 | 63.1 | 1672 | GCF_004155615.1_ASM415561v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2009B | SAMN10615441 | 2.10753 | 63   | 1668 | GCF_004155625.1_ASM415562v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2023B | SAMN10615445 | 1.98377 | 63.6 | 1571 | GCF_004155635.1_ASM415563v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 2001B | SAMN10615437 | 2.09532 | 63.2 | 1670 | GCF_004155645.1_ASM415564v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 1791B | SAMN10615434 | 2.13055 | 62.8 | 1690 | GCF_004155695.1_ASM415569v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 1770B | SAMN10615432 | 2.11457 | 63   | 1685 | GCF_004155705.1_ASM415570v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> | 1578B | SAMN10615425 | 1.95007 | 63.5 | 1530 | GCF_004155745.1_ASM415574v1_genomic.fna |

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|---|-----------|--------------|---------|------|------|---|
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i>           | 1565B     | SAMN10615423 | 1.95659 | 63.3 | 1558 | GCF_004155795.1_ASM415579v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i>           | 1550B     | SAMN10615422 | 2.00091 | 63.3 | 1599 | GCF_004155805.1_ASM415580v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i>           | 1546B     | SAMN10615421 | 1.95552 | 63.3 | 1556 | GCF_004155845.1_ASM415584v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i>           | 112206    | SAMN10615469 | 1.94749 | 63.2 | 1528 | GCF_004155855.1_ASM415585v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i>           | 2088B     | SAMN10615455 | 1.99177 | 63.1 | 1577 | GCF_004156075.1_ASM415607v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i>           | 2115B     | SAMN10615464 | 2.01678 | 63.1 | 1584 | GCF_004156085.1_ASM415608v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i>           | 2049B     | SAMN10615449 | 2.18995 | 63   | 1810 | GCF_004156115.1_ASM415611v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i>           | 2086B     | SAMN10615454 | 1.99682 | 63.1 | 1581 | GCF_004156135.1_ASM415613v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i>           | 1616B     | SAMN10615428 | 2.03179 | 63.3 | 1614 | GCF_004156145.1_ASM415614v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i>           | 2103B     | SAMN10615459 | 2.08059 | 63.2 | 1667 | GCF_004156175.1_ASM415617v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i>           | 1655B     | SAMN10615430 | 2.03177 | 63   | 1610 | GCF_004156195.1_ASM415619v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i>           | 1577B     | SAMN10615424 | 1.94992 | 63.5 | 1530 | GCF_004156215.1_ASM415621v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i>           | 2002B     | SAMN10615438 | 2.05796 | 63.3 | 1646 | GCF_004156235.1_ASM415623v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i>           | 1780B     | SAMN10615433 | 1.98148 | 63.2 | 1552 | GCF_004168525.1_ASM416852v1_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> DSM 20092 | DSM 20092 | SAMN02743881 | 1.91305 | 63.4 | 1504 | GCF_000687595.1_ASM68759v1_genomic.fna  |

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|---|-----------|--------------|---------|------|------|--|
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> DSM 20092     | DSM 20092 | SAMN02442013 | 1.91504 | 63.4 | 1499 | GCF_000771145.1_DSM-20092_genomic.fna      |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>globosum</i> DSM 20092     | DSM 20092 | SAMN05912980 | 1.97816 | 63.3 | 1532 | GCF_002706665.1_ASM270666v1_genomic.fna    |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>pseudolongum</i>           | LMG 11571 | SAMN02673445 | 1.89868 | 63.1 | 1475 | GCF_000741325.1_Bifpse_sub.pse_genomic.fna |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>pseudolongum</i>           | 1595B     | SAMN07731039 | 1.93642 | 63   | 1515 | GCF_002846725.1_ASM284672v1_genomic.fna    |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>pseudolongum</i>           | 1370B     | SAMN07731036 | 1.90204 | 63   | 1514 | GCF_002846755.1_ASM284675v1_genomic.fna    |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>pseudolongum</i>           | 2054B     | SAMN10615450 | 1.97429 | 63   | 1565 | GCF_004155015.1_ASM415501v1_genomic.fna    |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>pseudolongum</i>           | 1604B     | SAMN10615426 | 1.88204 | 63   | 1487 | GCF_004155395.1_ASM415539v1_genomic.fna    |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>pseudolongum</i>           | 1612B     | SAMN10615427 | 1.8915  | 63.1 | 1512 | GCF_004155715.1_ASM415571v1_genomic.fna    |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>pseudolongum</i>           | 1629B     | SAMN10615429 | 1.85243 | 63   | 1475 | GCF_004155725.1_ASM415572v1_genomic.fna    |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>pseudolongum</i>           | 1513B     | SAMN10615420 | 1.85577 | 63.2 | 1473 | GCF_004155835.1_ASM415583v1_genomic.fna    |
| <i>Bifidobacterium pseudolongum</i><br>subsp. <i>pseudolongum</i> DSM 20099 | DSM 20099 | SAMN02442017 | 1.901   | 63.1 | 1509 | GCF_000771225.1_DSM-20099_genomic.fna      |
| <i>Bifidobacterium psychraerophilum</i>                                     | LMG 21775 | SAMN02673446 | 2.61508 | 58.8 | 2081 | GCF_000741705.1_Bifpsy_genomic.fna         |
| <i>Bifidobacterium psychraerophilum</i><br>DSM 22366                        | DSM 22366 | SAMN02442034 | 2.62112 | 58.7 | 2083 | GCF_000771565.1_DSM-22366_genomic.fna      |
| <i>Bifidobacterium psychraerophilum</i><br>DSM 22366                        | DSM 22366 | SAMN05192537 | 2.63149 | 58.8 | 2085 | GCF_002813205.1_ASM281320v1_genomic.fna    |
| <i>Bifidobacterium pullorum</i>   | LMG 21816 | SAMN02673447 | 2.15356 | 64.2 | 1559 | GCF_000741335.1_Bifpul_genomic.fna         |
| <i>Bifidobacterium pullorum</i> DSM<br>20433                                | DSM 20433 | SAMN02442026 | 2.10095 | 64.3 | 1613 | GCF_000771405.1_DSM-20433_genomic.fna      |

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|--|-----------|--------------|---------|------|------|---|
| <i>Bifidobacterium reuteri</i> DSM 23975               | DSM 23975 | SAMN02673448 | 2.84757 | 60.5 | 2061 | GCF_000741695.1_Bifreu_genomic.fna      |
| <i>Bifidobacterium reuteri</i> DSM 23975               | DSM 23975 | SAMN02442040 | 2.836   | 60.5 | 2079 | GCF_000771685.1_DSM-23975_genomic.fna   |
| <i>Bifidobacterium ruminantium</i>                     | LMG 21811 | SAMN02673449 | 2.24981 | 59.2 | 1735 | GCF_000741365.1_Bifrum_genomic.fna      |
| <i>Bifidobacterium ruminantium</i> DSM 6489            | DSM 6489  | SAMN02743880 | 2.21856 | 59.2 | 1723 | GCF_000687635.1_ASM68763v1_genomic.fna  |
| <i>Bifidobacterium ruminantium</i> DSM 6489            | DSM 6489  | SAMN02442041 | 2.23033 | 59.2 | 1727 | GCF_000770925.1_DSM-6489_genomic.fna    |
| <i>Bifidobacterium saeculare</i> DSM 6531 = LMG 14934  | LMG 14934 | SAMN02673450 | 2.26328 | 63.7 | 1723 | GCF_000741375.1_Bifsae_genomic.fna      |
| <i>Bifidobacterium saeculare</i> DSM 6531 = LMG 14934  | DSM 6531  | SAMN02442043 | 2.25126 | 63.8 | 1741 | GCF_000770965.1_DSM-6531_genomic.fna    |
| <i>Bifidobacterium saguini</i> DSM 23967               | DSM 23967 | SAMN02673451 | 2.78704 | 56.4 | 2178 | GCF_000741715.1_Bifsag_genomic.fna      |
| <i>Bifidobacterium saguini</i> DSM 23967               | DSM 23967 | SAMN02442037 | 2.77343 | 56.3 | 2204 | GCF_000771625.1_DSM-23967_genomic.fna   |
| <i>Bifidobacterium scardovii</i>                       | LMG 21589 | SAMN02673452 | 3.14179 | 64.6 | 2375 | GCF_000741405.1_Bifscs_genomic.fna      |
| <i>Bifidobacterium scardovii</i>                       | 981_BLON  | SAMN03198202 | 3.12129 | 64.8 | 2354 | GCF_001059475.1_ASM105947v1_genomic.fna |
| <i>Bifidobacterium scardovii</i> JCM 12489 = DSM 13734 | DSM 13734 | SAMN02442005 | 3.14662 | 64.7 | 2375 | GCF_000770985.1_DSM-13734_genomic.fna   |
| <i>Bifidobacterium scardovii</i> JCM 12489 = DSM 13734 | DSM 13734 | SAMN03443793 | 3.14395 | 64.6 | 2374 | GCF_001005065.1_ASM100506v1_genomic.fna |
| <i>Bifidobacterium scardovii</i> JCM 12489 = DSM 13734 | JCM 12489 | SAMD00061046 | 3.15835 | 64.6 | 2397 | GCF_001042635.1_ASM104263v1_genomic.fna |
| <i>Bifidobacterium stercoris</i> JCM 15918             | DSM 24849 | SAMN02673454 | 2.30461 | 59.4 | 1831 | GCF_000741415.1_Bifste_genomic.fna      |
| <i>Bifidobacterium stercoris</i> JCM 15918             | JCM 15918 | SAMN02442044 | 2.29198 | 59.4 | 1829 | GCF_000771705.1_JCM-15918_genomic.fna   |
| <i>Bifidobacterium subtile</i>                         | LMG 11597 | SAMN02673455 | 2.79009 | 60.9 | 2163 | GCF_000741775.1_Bifsub_genomic.fna      |

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|--|-----------|--------------|---------|------|------|--|
| <i>Bifidobacterium subtile</i> DSM 20096   | DSM 20096 | SAMN02440843 | 2.76527 | 60.9 | 2139 | GCF_000426405.1_ASM42640v1_genomic.fna     |
| <i>Bifidobacterium subtile</i> DSM 20096   | DSM 20096 | SAMN02442015 | 2.762   | 60.9 | 2129 | GCF_000771185.1_DSM-20096_genomic.fna      |
| <i>Bifidobacterium thermacidophilum</i> subsp. <i>porcinum</i>                   | LMG 21689 | SAMN02673456 | 2.07937 | 60.2 | 1738 | GCF_000741445.1_Bifthe_sub.por_genomic.fna |
| <i>Bifidobacterium thermacidophilum</i> subsp. <i>porcinum</i> DSM 17755         | DSM 17755 | SAMN02442008 | 2.06257 | 60.2 | 1504 | GCF_000771045.1_DSM-17755_genomic.fna      |
| <i>Bifidobacterium thermacidophilum</i> subsp. <i>thermacidophilum</i>           | LMG 21395 | SAMN02673457 | 2.23307 | 60.4 | 1614 | GCF_000741455.1_Bifthe_sub.the_genomic.fna |
| <i>Bifidobacterium thermacidophilum</i> subsp. <i>thermacidophilum</i> DSM 15837 | DSM 15837 | SAMN02441522 | 2.22359 | 60.4 | 1642 | GCF_000426425.1_ASM42642v1_genomic.fna     |
| <i>Bifidobacterium thermacidophilum</i> subsp. <i>thermacidophilum</i> DSM 15837 | DSM 15837 | SAMN02442006 | 2.22099 | 60.4 | 1634 | GCF_000771005.1_DSM-15837_genomic.fna      |
| <i>Bifidobacterium thermophilum</i>  | JCM 1207  | SAMN02673459 | 2.0995  | 59.9 | 1700 | GCF_000741495.1_Bifthelum_genomic.fna      |
| <i>Bifidobacterium thermophilum</i>  | 1543B     | SAMN07731047 | 2.31613 | 60.4 | 1687 | GCF_002846655.1_ASM284665v1_genomic.fna    |
| <i>Bifidobacterium thermophilum</i>  | 1542B     | SAMN07731046 | 2.35913 | 60.3 | 1702 | GCF_002846785.1_ASM284678v1_genomic.fna    |
| <i>Bifidobacterium thermophilum</i> DSM 20210                                    | DSM 20210 | SAMN02442019 | 2.22484 | 59.7 | 1622 | GCF_000771265.1_DSM-20210_genomic.fna      |
| <i>Bifidobacterium thermophilum</i> DSM 20212                                    | DSM 20212 | SAMN02743878 | 2.25235 | 60.1 | 1626 | GCF_000687575.1_ASM68757v1_genomic.fna     |
| <i>Bifidobacterium thermophilum</i> RBL67  | RBL67     | SAMN02603226 | 2.29164 | 60.1 | 1641 | GCF_000347695.1_ASM34769v1_genomic.fna     |
| <i>Bifidobacterium tsurumiense</i>   | JCM 13495 | SAMN02673458 | 2.16443 | 52.8 | 1568 | GCF_000741765.1_Biftsu_genomic.fna         |
| <i>Bifidobacterium tsurumiense</i> DSM 17777                                     | DSM 17777 | SAMN02440869 | 2.16654 | 52.9 | 1643 | GCF_000429745.1_ASM42974v1_genomic.fna     |
| <i>Bifidobacterium tsurumiense</i> DSM 17777                                     | DSM 17777 | SAMN02442009 | 2.15769 | 52.8 | 1631 | GCF_000771065.1_DSM-17777_genomic.fna      |

**Table S2 The information of sequences used in phylogenetic reconstruction of BSH genes**

| <b>gene_ID after Prokka annoation</b> | <b>Tree_leaf_name</b>                                   | <b>Sequence length(bp)</b> |
|---------------------------------------|---|----------------------------|
| GCF_000020425.1_ASM2042v1_01534       | BSH-T4_Bifidobacterium_longum_subsp.infantis_ATCC_15697 | 954                        |
| GCF_000154085.1_ASM15408v1_00676      | BSH-T4_Bifidobacterium_adolescentis_L2-32               | 951                        |
| GCF_000155395.1_ASM15539v1_01343      | BSH-T4_Bifidobacterium_bifidum_NCIMB_41171              | 951                        |
| GCF_000003135.1_ASM313v1_01131        | BSH-T4_Bifidobacterium_longum_subsp.longum_ATCC_55813   | 954                        |
| GCF_000092765.1_ASM9276v1_00856       | BSH-T4_Bifidobacterium_animalis_subsp.lactis_V9         | 945                        |
| GCF_000092325.1_ASM9232v1_00966       | BSH-T4_Bifidobacterium_longum_subsp.longum_JDM301       | 954                        |
| GCF_000155415.1_ASM15541v1_01368      | BSH-T4_Bifidobacterium_longum_subsp.infantis_CCUG_52486 | 954                        |
| GCF_000158015.1_ASM15801v1_01810      | BSH-T4_Bifidobacterium_breve_DSM_20213=JCM_1192         | 954                        |
| GCF_000213865.1_ASM21386v1_00885      | gene2_breve_cbh   | 954                        |
| GCF_002838705.1_ASM283870v1_01187     | gene3_breve_cbh   | 954                        |
| GCF_004333385.1_ASM433338v1_01029     | gene4_longum_cbh  | 954                        |
| GCF_003471385.1_ASM347138v1_01646     | gene5_longum_cbh  | 954                        |
| GCF_003094895.1_ASM309489v1_00267     | gene6_animalis_cbh                                      | 945                        |
| GCF_002076025.1_Bbif1888B_00643       | gene7_longum_cbh  | 954                        |
| GCF_000708005.1_B.p.IPLA36007_01076   | gene8_pseudocatenulatum_cbh                             | 951                        |
| GCF_001546275.1_ASM154627v1_01274     | gene9_longum_cbh  | 954                        |
| GCF_003094775.1_ASM309477v1_00268     | gene10_animalis_cbh                                     | 945                        |
| GCF_001595435.1_ASM159543v1_01315     | gene11_bifidum_cbh                                      | 951                        |
| GCF_001686145.1_ASM168614v1_00435     | gene12_longum_cbh                                       | 954                        |
| GCF_003437325.1_ASM343732v1_01767     | gene13_bifidum_cbh                                      | 951                        |
| GCF_001686185.1_ASM168618v1_00585     | gene14_longum_cbh                                       | 954                        |
| GCF_003094875.1_ASM309487v1_00205     | gene15_animalis_cbh                                     | 945                        |
| GCF_000466525.1_ASM46652v1_01831      | gene16_bifidum_cbh                                      | 951                        |
| GCF_000741685.1_Bifpsetum_00413       | gene17_pseudocatenulatum_cbh                            | 951                        |
| GCF_004333175.1_ASM433317v1_00908     | gene18_longum_cbh                                       | 954                        |
| GCF_003465545.1_ASM346554v1_00470     | gene19_longum_cbh                                       | 954                        |

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|---|------------------------------|-----|
| GCF_002914865.1_ASM291486v1_00859                             | gene20_breve_cbh             | 954 |
| GCF_000008945.1_ASM894v1_00542                                | gene21_longum_cbh            | 954 |
| GCF_001686045.1_ASM168604v1_00991                             | gene22_pseudocatenulatum_cbh | 951 |
| GCF_001685985.1_ASM168598v1_01691                             | gene23_pseudocatenulatum_cbh | 951 |
| GCF_002833175.1_ASM283317v1_00873                             | gene24_longum_cbh            | 954 |
| GCF_003458965.1_ASM345896v1_00380                             | gene25_pseudocatenulatum_cbh | 951 |
| GCF_004333785.1_ASM433378v1_00985                             | gene26_longum_cbh            | 954 |
| GCF_000825025.1_BIC1307292462.V1_01591                        | gene27_longum_cbh            | 954 |
| GCF_000771285.1_DSM-20211_00261                               | gene28_longum_cbh            | 954 |
| GCF_002838465.1_ASM283846v1_00986                             | gene29_breve_cbh             | 954 |
| GCF_002846775.1_ASM284677v1_01664                             | gene30_pseudolongum_cbh      | 945 |
| GCF_004155155.1_ASM415515v1_01629                             | gene31_pseudolongum_cbh      | 945 |
| GCF_000730135.1_ASM73013v1_01262                              | gene32_longum_cbh            | 954 |
| GCF_004155705.1_ASM415570v1_01215                             | gene33_pseudolongum_cbh      | 945 |
| GCF_003471245.1_ASM347124v1_01561                             | gene34_longum_cbh            | 954 |
| GCF_001264155.1_ASM126415v1_00297                             | gene35_breve_cbh             | 954 |
| GCA_003573955.1_ASM357395v1_01796                             | gene36_bifidum_cbh           | 951 |
| GCF_900105745.1_IMG-taxon_2634166294_annotated_assembly_00315 | gene37_dentium_cbh           | 951 |
| GCF_000771705.1_JCM-15918_01091                               | gene38_adolescentis_cbh      | 951 |
| GCF_004156085.1_ASM415608v1_00978                             | gene39_pseudolongum_cbh      | 945 |
| GCF_002271275.1_Bbre7Ev1_01597                                | gene40_breve_cbh             | 954 |
| GCF_900519135.1_BB-79_00175                                   | gene41_longum_cbh            | 954 |
| GCF_000741085.1_Bifbif_01391                                  | gene42_bifidum_cbh           | 951 |
| GCF_001686125.1_ASM168612v1_00303                             | gene43_longum_cbh            | 954 |
| GCF_003437435.1_ASM343743v1_00261                             | gene44_pseudocatenulatum_cbh | 951 |
| GCF_003465385.1_ASM346538v1_01137                             | gene45_pseudocatenulatum_cbh | 951 |
| GCF_002838305.1_ASM283830v1_00993                             | gene46_breve_cbh             | 954 |
| GCF_004333855.1_ASM433385v1_00973                             | gene47_longum_cbh            | 954 |

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|--------------------------------------|------------------------------|-----|
| GCF_002838485.1_ASM283848v1_00984    | gene48_breve_cbh             | 954 |
| GCF_000220885.1_ASM22088v1_00858     | gene49_animalis_cbh          | 945 |
| GCF_003472405.1_ASM347240v1_01159    | gene50_longum_cbh            | 954 |
| GCF_004333555.1_ASM433355v1_00909    | gene51_longum_cbh            | 954 |
| GCF_004333215.1_ASM433321v1_00977    | gene52_longum_cbh            | 954 |
| GCF_004156115.1_ASM415611v1_01211    | gene53_pseudolongum_cbh      | 945 |
| GCF_003369995.1_ASM336999v1_00956    | gene54_longum_cbh            | 954 |
| GCF_003438565.1_ASM343856v1_00713    | gene55_animalis_cbh          | 945 |
| GCF_000471945.1_ASM47194v1_00903     | gene56_animalis_cbh          | 945 |
| GCF_001020415.1_Bbif09v4_01394       | gene57_bifidum_cbh           | 951 |
| GCF_004154645.1_ASM415464v1_00052    | gene58_animalis_cbh          | 945 |
| GCF_004334625.1_ASM433462v1_01037    | gene59_longum_cbh            | 954 |
| GCF_002838565.1_ASM283856v1_01090    | gene60_breve_cbh             | 954 |
| GCF_004155135.1_ASM415513v1_01814    | gene61_pseudolongum_cbh      | 945 |
| GCF_004334635.1_ASM433463v1_00938    | gene62_longum_cbh            | 954 |
| GCF_001446255.1_ASM144625v1_00848    | gene63_longum_cbh            | 954 |
| GCF_000771485.1_DSM-20456_01070      | gene64_bifidum_cbh           | 951 |
| GCF_001020355.1_Bbif01v4_01617       | gene65_bifidum_cbh           | 951 |
| GCF_002846725.1_ASM284672v1_00386    | gene66_pseudolongum_cbh      | 945 |
| GCF_000210755.1_ASM21075v1_01006     | gene67_longum_cbh            | 954 |
| GCF_900157055.1_Bifido_09_v1_02090   | gene68_longum_cbh            | 954 |
| GCF_001719085.1_ASM171908v1_01034    | gene69_longum_cbh            | 954 |
| GCF_004334855.1_ASM433485v1_01189    | gene70_longum_cbh            | 954 |
| GCF_002282915.1_ASM228291v1_00888    | gene71_pseudolongum_cbh      | 945 |
| GCF_002108155.1_BadoLMG11579v1_00956 | gene72_adolescentis_cbh      | 951 |
| GCF_001685925.1_ASM168592v1_01330    | gene73_breve_cbh             | 954 |
| GCF_003472685.1_ASM347268v1_00182    | gene74_pseudocatenulatum_cbh | 951 |
| GCF_004155405.1_ASM415540v1_01094    | gene75_pseudolongum_cbh      | 945 |
| GCF_004154535.1_ASM415453v1_00901    | gene76_animalis_cbh          | 945 |

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|-----------------------------------|------------------------------|-----|
| GCF_004155835.1_ASM415583v1_00921 | gene77_pseudolongum_cbh      | 945 |
| GCF_004333065.1_ASM433306v1_00917 | gene78_longum_cbh            | 954 |
| GCF_003370225.1_ASM337022v1_00173 | gene79_longum_cbh            | 954 |
| GCF_002833075.1_ASM283307v1_00865 | gene80_longum_cbh            | 954 |
| GCF_002075955.1_Bbif1893B_00594   | gene81_dentium_cbh           | 951 |
| GCF_000786175.1_ASM78617v1_01140  | gene82_longum_cbh            | 954 |
| GCF_000687595.1_ASM68759v1_00101  | gene83_pseudolongum_cbh      | 945 |
| GCF_003439655.1_ASM343965v1_00873 | gene84_pseudocatenulatum_cbh | 951 |
| GCF_003436955.1_ASM343695v1_00478 | gene85_pseudocatenulatum_cbh | 951 |
| GCF_001263845.1_ASM126384v1_00942 | gene86_breve_cbh             | 954 |
| GCF_003457765.1_ASM345776v1_00961 | gene87_adolescentis_cbh      | 951 |
| GCF_002833265.1_ASM283326v1_00916 | gene88_longum_cbh            | 954 |
| GCF_004334715.1_ASM433471v1_00998 | gene89_longum_cbh            | 954 |
| GCF_003473105.1_ASM347310v1_00933 | gene90_adolescentis_cbh      | 951 |
| GCF_004334515.1_ASM433451v1_00967 | gene91_longum_cbh            | 954 |
| GCF_001685865.1_ASM168586v1_01161 | gene92_breve_cbh             | 954 |
| GCF_001039715.1_BAN2_01181        | gene93_animalis_cbh          | 945 |
| GCF_004154555.1_ASM415455v1_00861 | gene94_animalis_cbh          | 945 |
| GCF_004799295.1_ASM479929v1_01479 | gene95_bifidum_cbh           | 951 |
| GCF_002076055.1_Bbif1891B_00902   | gene96_breve_cbh             | 954 |
| GCF_002838245.1_ASM283824v1_00938 | gene97_breve_cbh             | 954 |
| GCF_000226175.1_ASM22617v2_00349  | gene98_breve_cbh             | 954 |
| GCF_002846755.1_ASM284675v1_01235 | gene99_pseudolongum_cbh      | 945 |
| GCF_003094835.1_ASM309483v1_00058 | gene100_animalis_cbh         | 945 |
| GCF_000224965.2_ASM22496v2_00857  | gene101_animalis_cbh         | 945 |
| GCF_004333925.1_ASM433392v1_01065 | gene102_longum_cbh           | 954 |
| GCF_000730035.1_ASM73003v1_01770  | gene103_longum_cbh           | 954 |
| GCF_003370035.1_ASM337003v1_00283 | gene104_longum_cbh           | 954 |
| GCF_003436655.1_ASM343665v1_01328 | gene105_bifidum_cbh          | 951 |

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|-----------------------------------|-------------------------------|-----|
| GCF_000414215.1_ASM41421v1_00859  | gene106_animalis_cbh          | 945 |
| GCF_001020325.1_Bbif10v4_01344    | gene107_bifidum_cbh           | 951 |
| GCF_004155295.1_ASM415529v1_01134 | gene108_pseudolongum_cbh      | 945 |
| GCF_002220485.1_ASM222048v1_00860 | gene109_animalis_cbh          | 945 |
| GCF_001685705.1_ASM168570v1_00724 | gene110_breve_cbh             | 954 |
| GCF_002276185.1_ASM227618v1_01566 | gene111_longum_cbh            | 954 |
| GCF_000772485.1_ASM77248v1_00997  | gene112_longum_cbh            | 954 |
| GCF_002075945.1_Bbif1896B_00380   | gene113_pseudocatenulatum_cbh | 951 |
| GCF_003095035.1_ASM309503v1_01061 | gene114_bifidum_cbh           | 951 |
| GCF_002075935.1_Bbif1897B_01326   | gene115_longum_cbh            | 954 |
| GCF_004333735.1_ASM433373v1_01267 | gene116_longum_cbh            | 954 |
| GCF_002846875.1_ASM284687v1_00560 | gene117_pseudolongum_cbh      | 945 |
| GCF_000021425.1_ASM2142v1_01453   | gene118_animalis_cbh          | 945 |
| GCF_000522505.1_DSM27321_01002    | gene119_moukalabense_cbh      | 951 |
| GCF_002838405.1_ASM283840v1_00946 | gene120_breve_cbh             | 954 |
| GCF_003467905.1_ASM346790v1_00323 | gene121_longum_cbh            | 954 |
| GCF_004333675.1_ASM433367v1_00882 | gene122_longum_cbh            | 954 |
| GCF_003970855.1_ASM397085v1_00912 | gene123_animalis_cbh          | 945 |
| GCF_900157065.1_PC1_v1_01688      | gene124_longum_cbh            | 954 |
| GCF_000817045.1_ASM81704v1_00859  | gene125_animalis_cbh          | 945 |
| GCF_000568975.1_ASM56897v1_01046  | gene127_breve_cbh             | 954 |
| GCF_002838285.1_ASM283828v1_00963 | gene128_breve_cbh             | 954 |
| GCF_001685785.1_ASM168578v1_01106 | gene129_breve_cbh             | 954 |
| GCF_003436575.1_ASM343657v1_00338 | gene130_bifidum_cbh           | 951 |
| GCF_003472725.1_ASM347272v1_00918 | gene131_pseudocatenulatum_cbh | 951 |
| GCF_001189355.1_assBREI4_01110    | gene132_breve_cbh             | 954 |
| GCF_900157185.1_PC4_v1_02285      | gene133_longum_cbh            | 954 |
| GCF_003436595.1_ASM343659v1_00665 | gene134_longum_cbh            | 954 |
| GCF_001685905.1_ASM168590v1_00064 | gene135_breve_cbh             | 954 |

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|--|--------------------------|-----|
| GCF_000277345.1_ASM27734v1_00857       | gene136_animalis_cbh     | 945 |
| GCF_004334615.1_ASM433461v1_00970      | gene137_longum_cbh       | 954 |
| GCF_000410595.1_ASM41059v1_00558       | gene138_longum_cbh       | 954 |
| GCF_001756865.1_ASM175686v1_00668      | gene139_adolescentis_cbh | 951 |
| GCF_001686225.1_ASM168622v1_00331      | gene140_longum_cbh       | 954 |
| GCF_000569015.1_ASM56901v1_01072       | gene141_breve_cbh        | 954 |
| GCF_001685825.1_ASM168582v1_01753      | gene142_breve_cbh        | 954 |
| GCF_004334065.1_ASM433406v1_01154      | gene143_longum_cbh       | 954 |
| GCF_004156135.1_ASM415613v1_00433      | gene144_pseudolongum_cbh | 945 |
| GCF_000825045.1_BIC1401111250.V1_01587 | gene145_longum_cbh       | 954 |
| GCF_003094635.1_ASM309463v1_01638      | gene146_longum_cbh       | 954 |
| GCF_005844365.1_ASM584436v1_00578      | gene147_bifidum_cbh      | 951 |
| GCF_003094995.1_ASM309499v1_00603      | gene148_longum_cbh       | 954 |
| GCF_003471355.1_ASM347135v1_01294      | gene149_longum_cbh       | 954 |
| GCF_003573895.1_ASM357389v1_00220      | gene150_bifidum_cbh      | 951 |
| GCF_000299595.1_ASM29959v1_01017       | gene151_bifidum_cbh      | 951 |
| GCF_003095075.1_ASM309507v1_00205      | gene152_animalis_cbh     | 945 |
| GCF_005405705.1_ASM540570v1_00014      | gene153_moukalabense_cbh | 951 |
| GCF_004125375.1_ASM412537v1_01602      | gene154_longum_cbh       | 954 |
| GCF_002107995.1_BadoLMG10734v1_01056   | gene155_adolescentis_cbh | 951 |
| GCF_003475835.1_ASM347583v1_00879      | gene156_longum_cbh       | 954 |
| GCF_002107925.1_Bado42Bv1_01134        | gene157_adolescentis_cbh | 951 |
| GCF_001263915.1_ASM126391v1_01374      | gene158_breve_cbh        | 954 |
| GCF_000741125.1_Bifbre_01806           | gene159_breve_cbh        | 954 |
| GCF_004332755.1_ASM433275v1_00950      | gene160_longum_cbh       | 954 |
| GCF_000166895.2_ASM16689v2_01779       | gene161_longum_cbh       | 954 |
| GCF_004156175.1_ASM415617v1_00554      | gene162_pseudolongum_cbh | 945 |
| GCF_004155635.1_ASM415563v1_01092      | gene163_pseudolongum_cbh | 945 |
| GCF_003473205.1_ASM347320v1_01122      | gene164_longum_cbh       | 954 |

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|---|-------------------------------|------|
| GCF_004334255.1_ASM433425v1_00853                             | gene165_longum_cbh            | 954  |
| GCF_004167735.1_ASM416773v1_00102                             | gene166_dentium_cbh           | 951  |
| GCF_004155495.1_ASM415549v1_00974                             | gene167_pseudolongum_cbh      | 945  |
| GCF_001516925.1_ASM151692v1_00302                             | gene168_longum_cbh            | 954  |
| GCF_005845205.1_ASM584520v1_00739                             | gene169_adolescentis_cbh      | 951  |
| GCF_003474015.1_ASM347401v1_00473                             | gene170_pseudocatenulatum_cbh | 951  |
| GCF_005405665.1_ASM540566v1_00014                             | gene171_moukalabense_cbh      | 951  |
| GCF_003370205.1_ASM337020v1_01838                             | gene172_longum_cbh            | 1122 |
| GCF_000737885.1_ASM73788v1_00958                              | gene173_adolescentis_cbh      | 951  |
| GCF_001311295.1_ASM131129v1_02819                             | gene174_breve_cbh             | 954  |
| GCF_003466505.1_ASM346650v1_00543                             | gene175_longum_cbh            | 954  |
| GCF_002108075.1_BadoAL462v1_01241                             | gene176_adolescentis_cbh      | 951  |
| GCF_001406215.1_13470_2_69_00145                              | gene177_adolescentis_cbh      | 951  |
| GCF_003467395.1_ASM346739v1_01045                             | gene178_longum_cbh            | 954  |
| GCF_002271255.1_Bpse1Ev1_00420                                | gene179_pseudocatenulatum_cbh | 951  |
| GCF_004167585.1_ASM416758v1_00413                             | gene180_adolescentis_cbh      | 951  |
| GCF_004154525.1_ASM415452v1_00895                             | gene181_animalis_cbh          | 945  |
| GCF_004154565.1_ASM415456v1_00900                             | gene182_animalis_cbh          | 945  |
| GCF_001020275.1_Bbif07v4_01535                                | gene183_bifidum_cbh           | 951  |
| GCF_900157145.1_Bifido_03_v1_01699                            | gene184_longum_cbh            | 954  |
| GCF_003470585.1_ASM347058v1_01837                             | gene185_bifidum_cbh           | 951  |
| GCF_004333905.1_ASM433390v1_00925                             | gene186_longum_cbh            | 954  |
| GCF_900112465.1_IMG-taxon_2654588208_annotated_assembly_01196 | gene187_bifidum_cbh           | 951  |
| GCF_002833215.1_ASM283321v1_00877                             | gene188_longum_cbh            | 954  |
| GCF_004332935.1_ASM433293v1_00856                             | gene189_longum_cbh            | 954  |
| GCF_002833255.1_ASM283325v1_00884                             | gene190_longum_cbh            | 954  |
| GCF_005844245.1_ASM584424v1_01250                             | gene191_animalis_cbh          | 945  |
| GCF_002832995.1_ASM283299v1_00927                             | gene192_longum_cbh            | 954  |

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| GCF_004154435.1_ASM415443v1_00861       | gene193_animalis_cbh          | 945  |
| GCF_900157085.1_Bifido_04_v1_01008      | gene194_longum_cbh_1          | 1023 |
| GCF_000569035.1_ASM56903v1_00958        | gene195_breve_cbh             | 954  |
| GCF_004154655.1_ASM415465v1_00906       | gene196_animalis_cbh          | 945  |
| GCF_000024445.1_ASM2444v1_01089         | gene197_dentium_cbh           | 951  |
| GCF_003467065.1_ASM346706v1_00631       | gene198_pseudocatenulatum_cbh | 951  |
| GCF_002833015.1_ASM283301v1_00811       | gene199_longum_cbh            | 954  |
| GCF_000497735.1_BLONGv1.0_01002         | gene200_longum_cbh            | 954  |
| GCF_003370105.1_ASM337010v1_01890       | gene201_breve_cbh             | 954  |
| GCF_005405805.1_ASM540580v1_00338       | gene202_moukalabense_cbh      | 951  |
| GCF_003438485.1_ASM343848v1_00042       | gene203_longum_cbh            | 954  |
| GCF_004334535.1_ASM433453v1_00917       | gene204_longum_cbh            | 954  |
| GCF_001281345.1_ASM128134v1_00896       | gene205_bifidum_cbh           | 951  |
| GCF_000025245.1_ASM2524v1_01358         | gene206_animalis_cbh          | 945  |
| GCF_003437825.1_ASM343782v1_00501       | gene207_pseudocatenulatum_cbh | 951  |
| GCF_900157085.1_Bifido_04_v1_02183      | gene208_longum_cbh            | 954  |
| GCF_004332825.1_ASM433282v1_00859       | gene209_longum_cbh            | 954  |
| GCF_003462885.1_ASM346288v1_00958       | gene210_adolescentis_cbh      | 951  |
| GCF_004155525.1_ASM415552v1_00969       | gene211_pseudolongum_cbh      | 945  |
| GCF_900157125.1_Bifido_07_v1_00402      | gene212_breve_cbh             | 954  |
| GCF_004333035.1_ASM433303v1_01153       | gene213_longum_cbh            | 954  |
| GCF_002838345.1_ASM283834v1_00996       | gene214_breve_cbh             | 954  |
| GCF_000825145.1_BIB1401272845b.V1_01570 | gene215_longum_cbh            | 954  |
| GCF_000612705.1_CECT8145_00714          | gene216_animalis_cbh          | 945  |
| GCF_004154545.1_ASM415454v1_00966       | gene217_animalis_cbh          | 945  |
| GCF_003437715.1_ASM343771v1_00373       | gene218_longum_cbh            | 954  |
| GCF_004333265.1_ASM433326v1_00963       | gene219_longum_cbh            | 954  |
| GCF_001940535.1_BlonW11v1_01159         | gene220_longum_cbh            | 954  |
| GCF_000164965.1_ASM16496v1_00902        | gene221_bifidum_cbh           | 951  |

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| GCF_004334645.1_ASM433464v1_00980                             | gene222_longum_cbh            | 954 |
| GCF_001686105.1_ASM168610v1_01446                             | gene223_longum_cbh            | 954 |
| GCF_000569075.1_ASM56907v1_00982                              | gene224_breve_cbh             | 954 |
| GCF_004333475.1_ASM433347v1_00920                             | gene225_longum_cbh            | 954 |
| GCF_900445615.1_49964_F01_00169                               | gene226_adolescentis_cbh      | 951 |
| GCF_003370005.1_ASM337000v1_02031                             | gene227_longum_cbh            | 954 |
| GCF_900157105.1_Bifido_10_v1_00991                            | gene228_breve_cbh             | 954 |
| GCF_002833205.1_ASM283320v1_00870                             | gene229_longum_cbh            | 954 |
| GCF_003469145.1_ASM346914v1_00502                             | gene230_adolescentis_cbh      | 951 |
| GCF_004154475.1_ASM415447v1_00899                             | gene232_animalis_cbh          | 945 |
| GCF_002706665.1_ASM270666v1_00981                             | gene233_pseudolongum_cbh      | 945 |
| GCF_003463425.1_ASM346342v1_00156                             | gene234_pseudocatenulatum_cbh | 951 |
| GCF_005405785.1_ASM540578v1_00987                             | gene235_moukalabense_cbh      | 951 |
| GCF_002833035.1_ASM283303v1_00916                             | gene236_longum_cbh            | 954 |
| GCF_004333895.1_ASM433389v1_01009                             | gene237_longum_cbh            | 954 |
| GCF_005405685.1_ASM540568v1_00237                             | gene238_moukalabense_cbh      | 951 |
| GCF_004333455.1_ASM433345v1_00928                             | gene239_longum_cbh            | 954 |
| GCF_002914895.1_ASM291489v1_00105                             | gene240_animalis_cbh          | 945 |
| GCF_003370195.1_ASM337019v1_02061                             | gene241_breve_cbh             | 954 |
| GCF_000240765.1_BifAniBS01_1.0_00903                          | gene242_animalis_cbh          | 945 |
| GCF_003472345.1_ASM347234v1_00243                             | gene243_bifidum_cbh           | 951 |
| GCF_000300215.1_ASM30021v1_00072                              | gene244_bifidum_cbh           | 951 |
| GCF_005405645.1_ASM540564v1_00014                             | gene245_moukalabense_cbh      | 951 |
| GCF_002846845.1_ASM284684v1_01404                             | gene246_pseudolongum_cbh      | 945 |
| GCF_000771105.1_DSM-20088_00685                               | gene247_longum_cbh            | 954 |
| GCF_001050555.1_ASM105055v1_01078                             | gene248_longum_cbh            | 954 |
| GCF_900104835.1_IMG-taxon_2634166334_annotated_assembly_01147 | gene249_longum_cbh            | 954 |
| GCF_003471415.1_ASM347141v1_00463                             | gene250_pseudocatenulatum_cbh | 951 |

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| GCF_000261245.1_Blongum16Bv1.0_01873 | gene251_longum_cbh            | 954 |
| GCF_001447975.1_ASM144797v1_00008    | gene252_longum_cbh            | 954 |
| GCF_004319685.1_ASM431968v1_01059    | gene253_breve_cbh             | 954 |
| GCF_001263945.1_ASM126394v1_00941    | gene254_animalis_cbh          | 945 |
| GCF_004333335.1_ASM433333v1_00940    | gene255_longum_cbh            | 954 |
| GCF_004154455.1_ASM415445v1_00758    | gene256_animalis_cbh          | 945 |
| GCF_003475865.1_ASM347586v1_00366    | gene257_longum_cbh            | 954 |
| GCF_002838605.1_ASM283860v1_00997    | gene258_breve_cbh             | 954 |
| GCF_003458335.1_ASM345833v1_01918    | gene259_longum_cbh            | 954 |
| GCF_000022965.1_ASM2296v1_00859      | gene260_animalis_cbh          | 945 |
| GCF_004334425.1_ASM433442v1_00901    | gene261_longum_cbh            | 954 |
| GCF_003466485.1_ASM346648v1_00874    | gene262_bifidum_cbh           | 951 |
| GCF_000730055.1_ASM73005v1_00729     | gene263_longum_cbh            | 954 |
| GCF_004155375.1_ASM415537v1_00983    | gene264_pseudolongum_cbh      | 945 |
| GCF_003437785.1_ASM343778v1_00875    | gene265_bifidum_cbh           | 951 |
| GCF_005405845.1_ASM540584v1_00987    | gene266_moukalabense_cbh      | 951 |
| GCF_001446275.1_ASM144627v1_00888    | gene267_longum_cbh            | 954 |
| GCF_003094715.1_ASM309471v1_01219    | gene268_bifidum_cbh           | 951 |
| GCF_001870705.1_ASM187070v1_01160    | gene269_longum_cbh            | 954 |
| GCA_003473345.1_ASM347334v1_01130    | gene270_adolescentis_cbh      | 951 |
| GCF_000260715.1_ASM26071v1_00880     | gene271_animalis_cbh          | 945 |
| GCF_004167725.1_ASM416772v1_01547    | gene272_longum_cbh            | 954 |
| GCF_003474045.1_ASM347404v1_00675    | gene273_bifidum_cbh           | 951 |
| GCF_001688645.2_ASM168864v2_01421    | gene274_animalis_cbh          | 945 |
| GCF_003370265.1_ASM337026v1_01802    | gene275_breve_cbh             | 954 |
| GCF_004802595.1_ASM480259v1_01328    | gene276_breve_cbh             | 954 |
| GCF_003465775.1_ASM346577v1_01255    | gene278_pseudocatenulatum_cbh | 951 |
| GCF_001546235.1_ASM154623v1_01989    | gene279_breve_cbh             | 954 |
| GCF_004332665.1_ASM433266v1_00901    | gene280_longum_cbh            | 954 |

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| GCF_003475055.1_ASM347505v1_01592    | gene281_longum_cbh            | 954 |
| GCF_000730025.1_ASM73002v1_01624     | gene282_longum_cbh            | 954 |
| GCF_001686165.1_ASM168616v1_01275    | gene283_longum_cbh            | 954 |
| GCF_002838425.1_ASM283842v1_01046    | gene284_breve_cbh             | 954 |
| GCF_003471915.1_ASM347191v1_00592    | gene285_longum_cbh            | 954 |
| GCF_004332735.1_ASM433273v1_01018    | gene286_longum_cbh            | 954 |
| GCF_003466395.1_ASM346639v1_00935    | gene287_bifidum_cbh           | 951 |
| GCF_001263855.1_ASM126385v1_01883    | gene288_breve_cbh             | 954 |
| GCF_003790375.1_ASM379037v1_01203    | gene289_longum_cbh            | 954 |
| GCF_004334445.1_ASM433444v1_00829    | gene290_longum_cbh            | 954 |
| GCF_004334165.1_ASM433416v1_01091    | gene291_longum_cbh            | 954 |
| GCF_003094955.1_ASM309495v1_01706    | gene292_longum_cbh            | 954 |
| GCF_005844115.1_ASM584411v1_01667    | gene293_longum_cbh            | 954 |
| GCF_000741325.1_Bifpse_sub.pse_00532 | gene294_pseudolongum_cbh      | 945 |
| GCF_005406285.1_ASM540628v1_00863    | gene295_longum_cbh            | 954 |
| GCF_004155435.1_ASM415543v1_00164    | gene296_pseudolongum_cbh      | 945 |
| GCF_004332945.1_ASM433294v1_01093    | gene297_longum_cbh            | 954 |
| GCF_005844205.1_ASM584420v1_00725    | gene298_bifidum_cbh           | 951 |
| GCF_003459865.1_ASM345986v1_00932    | gene299_pseudocatenulatum_cbh | 951 |
| GCF_000818055.1_ASM81805v1_00858     | gene300_animalis_cbh          | 945 |
| GCF_004156215.1_ASM415621v1_01026    | gene301_pseudolongum_cbh      | 945 |
| GCF_001020405.1_Bbif06v4_01321       | gene302_bifidum_cbh           | 951 |
| GCF_000173435.1_ASM17343v1_00683     | gene303_pseudocatenulatum_cbh | 951 |
| GCF_004683745.1_ASM468374v1_00604    | gene304_dentium_cbh           | 951 |
| GCF_900157115.1_Bifido_05_v1_00745   | gene305_longum_cbh            | 954 |
| GCF_004332835.1_ASM433283v1_00832    | gene306_longum_cbh            | 954 |
| GCF_001025175.1_ASM102517v1_00932    | gene307_breve_cbh             | 954 |
| GCF_003472605.1_ASM347260v1_00606    | gene308_longum_cbh            | 954 |
| GCF_003095115.1_ASM309511v1_00268    | gene309_animalis_cbh          | 945 |

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| GCF_001892965.1_ASM189296v1_00306  | gene310_longum_cbh            | 954 |
| GCF_000817995.1_ASM81799v1_00999   | gene311_adolescentis_cbh      | 951 |
| GCF_000220135.1_ASM22013v1_01061   | gene312_breve_cbh             | 954 |
| GCF_900157075.1_Bifido_S1_v1_01762 | gene313_longum_cbh            | 954 |
| GCF_001264035.1_ASM126403v1_00687  | gene314_breve_cbh             | 954 |
| GCF_003471345.1_ASM347134v1_01471  | gene315_longum_cbh            | 954 |
| GCF_002832945.1_ASM283294v1_00923  | gene316_longum_cbh            | 954 |
| GCF_004135895.1_ASM413589v1_00858  | gene317_animalis_cbh          | 945 |
| GCF_004334865.1_ASM433486v1_01034  | gene318_longum_cbh            | 954 |
| GCF_004333275.1_ASM433327v1_00900  | gene319_longum_cbh            | 954 |
| GCF_003856735.1_ASM385673v1_01016  | gene320_adolescentis_cbh      | 951 |
| GCF_004333165.1_ASM433316v1_00885  | gene321_longum_cbh            | 954 |
| GCF_004334105.1_ASM433410v1_01063  | gene322_longum_cbh            | 954 |
| GCF_004155285.1_ASM415528v1_00336  | gene323_pseudolongum_cbh      | 945 |
| GCF_004332895.1_ASM433289v1_01287  | gene324_longum_cbh            | 954 |
| GCF_000569055.1_ASM56905v1_01001   | gene325_breve_cbh             | 954 |
| GCF_003437135.1_ASM343713v1_00176  | gene326_longum_cbh            | 954 |
| GCF_001264055.1_ASM126405v1_00778  | gene327_animalis_cbh          | 945 |
| GCF_003467515.1_ASM346751v1_01205  | gene328_pseudocatenulatum_cbh | 951 |
| GCF_003437945.1_ASM343794v1_00965  | gene329_bifidum_cbh           | 951 |
| GCF_003467985.1_ASM346798v1_00227  | gene330_bifidum_cbh           | 951 |
| GCF_000478525.1_blongD2957_01382   | gene331_longum_cbh            | 954 |
| GCF_900157135.1_Bifido_11_v1_01133 | gene332_animalis_cbh          | 945 |
| GCF_002833065.1_ASM283306v1_00952  | gene333_longum_cbh            | 954 |
| GCF_004154445.1_ASM415444v1_00819  | gene334_animalis_cbh          | 945 |
| GCF_002803775.1_ASM280377v1_00691  | gene335_animalis_cbh          | 945 |
| GCF_003468825.1_ASM346882v1_01707  | gene336_longum_cbh            | 954 |
| GCF_004333765.1_ASM433376v1_00854  | gene337_longum_cbh            | 954 |
| GCF_004334205.1_ASM433420v1_00877  | gene338_longum_cbh            | 954 |

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| GCF_001293145.1_ASM129314v1_00939  | gene339_longum_cbh            | 954 |
| GCF_002108095.1_BadoAD467v1_01075  | gene340_adolescentis_cbh      | 951 |
| GCF_003472305.1_ASM347230v1_01622  | gene341_longum_cbh            | 954 |
| GCF_003436635.1_ASM343663v1_01327  | gene342_bifidum_cbh           | 951 |
| GCF_003094735.1_ASM309473v1_01695  | gene343_bifidum_cbh           | 951 |
| GCF_003436315.1_ASM343631v1_00476  | gene344_pseudocatenulatum_cbh | 951 |
| GCF_004155395.1_ASM415539v1_00911  | gene345_pseudolongum_cbh      | 945 |
| GCF_001406735.1_13414_6_46_00239   | gene346_adolescentis_cbh      | 951 |
| GCF_004167565.1_ASM416756v1_00471  | gene347_pseudocatenulatum_cbh | 951 |
| GCF_002833285.1_ASM283328v1_00838  | gene348_longum_cbh            | 954 |
| GCF_003464845.1_ASM346484v1_01086  | gene349_pseudolongum_cbh      | 945 |
| GCF_000165905.1_ASM16590v1_00869   | gene350_bifidum_cbh           | 951 |
| GCF_005405725.1_ASM540572v1_01512  | gene351_moukalabense_cbh      | 951 |
| GCF_003472575.1_ASM347257v1_00517  | gene352_pseudocatenulatum_cbh | 951 |
| GCF_002838545.1_ASM283854v1_00973  | gene353_breve_cbh             | 954 |
| GCF_001264095.1_ASM126409v1_00464  | gene354_breve_cbh             | 954 |
| GCF_004334775.1_ASM433477v1_01088  | gene355_longum_cbh            | 954 |
| GCF_003437105.1_ASM343710v1_00969  | gene356_longum_cbh            | 954 |
| GCF_003436505.1_ASM343650v1_01880  | gene357_longum_cbh            | 954 |
| GCF_000771305.1_DSM-20213_01580    | gene358_breve_cbh             | 954 |
| GCF_002846685.1_ASM284668v1_01350  | gene359_pseudolongum_cbh      | 945 |
| GCF_004333645.1_ASM433364v1_00845  | gene360_longum_cbh            | 954 |
| GCF_001892925.1_ASM189292v1_01496  | gene361_animalis_cbh          | 945 |
| GCF_002838225.1_ASM283822v1_01024  | gene362_breve_cbh             | 954 |
| GCF_900157165.1_Bifido_12_v1_01552 | gene363_longum_cbh            | 954 |
| GCF_004154625.1_ASM415462v1_00474  | gene364_animalis_cbh          | 945 |
| GCF_004334555.1_ASM433455v1_00900  | gene365_longum_cbh            | 954 |
| GCF_004334005.1_ASM433400v1_00910  | gene366_longum_cbh            | 954 |
| GCF_003464575.1_ASM346457v1_00180  | gene367_longum_cbh            | 954 |

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| GCF_003465425.1_ASM346542v1_01692           | gene368_bifidum_cbh           | 951 |
| GCF_003437455.1_ASM343745v1_01474           | gene369_longum_cbh            | 954 |
| GCF_000568875.1_Mira_de-novo_assembly_00857 | gene370_breve_cbh             | 954 |
| GCF_000730205.1_ASM73020v1_00968            | gene371_longum_cbh            | 954 |
| GCF_003094815.1_ASM309481v1_00205           | gene372_animalis_cbh          | 945 |
| GCF_900637095.1_48450_G02_01392             | gene373_bifidum_cbh           | 951 |
| GCF_003465785.1_ASM346578v1_00838           | gene374_longum_cbh            | 954 |
| GCF_003813065.1_ASM381306v1_00941           | gene375_breve_cbh             | 954 |
| GCF_003471595.1_ASM347159v1_01794           | gene376_bifidum_cbh           | 951 |
| GCF_003462895.1_ASM346289v1_00960           | gene377_adolescentis_cbh      | 951 |
| GCF_003465065.1_ASM346506v1_01050           | gene378_pseudocatenulatum_cbh | 951 |
| GCF_003437075.1_ASM343707v1_01854           | gene379_pseudocatenulatum_cbh | 951 |
| GCF_001025135.1_ASM102513v1_00880           | gene380_bifidum_cbh           | 951 |
| GCF_004333425.1_ASM433342v1_00850           | gene381_longum_cbh            | 954 |
| GCA_002762435.1_ASM276243v1_00968           | gene382_animalis_cbh          | 945 |
| GCF_001685765.1_ASM168576v1_01300           | gene383_breve_cbh             | 954 |
| GCF_002838265.1_ASM283826v1_00995           | gene384_breve_cbh             | 954 |
| GCF_003437155.1_ASM343715v1_00102           | gene385_pseudocatenulatum_cbh | 951 |
| GCF_002846675.1_ASM284667v1_00145           | gene386_pseudolongum_cbh      | 945 |
| GCA_001576885.1_ASM157688v1_00660           | gene387_pseudocatenulatum_cbh | 951 |
| GCF_004155805.1_ASM415580v1_00958           | gene388_pseudolongum_cbh      | 945 |
| GCF_003472415.1_ASM347241v1_00229           | gene389_pseudocatenulatum_cbh | 951 |
| GCF_003370295.1_ASM337029v1_00373           | gene390_breve_cbh             | 954 |
| GCF_000771225.1_DSM-20099_01152             | gene391_pseudolongum_cbh      | 945 |
| GCF_002076075.1_Bbif1889B_00631             | gene392_breve_cbh             | 954 |
| GCF_003474835.1_ASM347483v1_01789           | gene393_pseudocatenulatum_cbh | 951 |
| GCF_004333845.1_ASM433384v1_00909           | gene394_longum_cbh            | 954 |
| GCF_004332745.1_ASM433274v1_00926           | gene395_longum_cbh            | 954 |
| GCF_001264135.1_ASM126413v1_01272           | gene396_breve_cbh             | 954 |

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| GCF_000261225.1_Blongum35Bv1.0_00190    | gene397_longum_cbh            | 951 |
| GCF_004155095.1_ASM415509v1_00207       | gene398_pseudolongum_cbh      | 945 |
| GCF_003606305.1_ASM360630v1_00857       | gene399_animalis_cbh          | 945 |
| GCF_004155845.1_ASM415584v1_01235       | gene400_pseudolongum_cbh      | 945 |
| GCF_004334795.1_ASM433479v1_00942       | gene401_longum_cbh            | 954 |
| GCF_004332925.1_ASM433292v1_00853       | gene402_longum_cbh            | 954 |
| GCA_003508295.1_ASM350829v1_01073       | gene403_dentium_cbh           | 951 |
| GCF_003438405.1_ASM343840v1_00796       | gene404_pseudocatenulatum_cbh | 951 |
| GCF_003437175.1_ASM343717v1_00936       | gene405_bifidum_cbh           | 951 |
| GCF_004334705.1_ASM433470v1_00942       | gene406_longum_cbh            | 954 |
| GCF_003472545.1_ASM347254v1_01156       | gene407_pseudocatenulatum_cbh | 951 |
| GCF_000825065.1_BIC1401212621a.V1_01575 | gene408_longum_cbh            | 954 |
| GCF_004334235.1_ASM433423v1_01021       | gene409_longum_cbh            | 954 |
| GCF_003468415.1_ASM346841v1_00723       | gene410_bifidum_cbh           | 951 |
| GCF_005405765.1_ASM540576v1_01122       | gene411_moukalabense_cbh      | 951 |
| GCF_004333695.1_ASM433369v1_00877       | gene412_longum_cbh            | 954 |
| GCF_000010425.1_ASM1042v1_00929         | gene413_adolescentis_cbh      | 951 |
| GCF_004155015.1_ASM415501v1_01060       | gene414_pseudolongum_cbh      | 945 |
| GCF_003465635.1_ASM346563v1_01705       | gene415_longum_cbh            | 954 |
| GCF_003468555.1_ASM346855v1_00479       | gene416_pseudocatenulatum_cbh | 951 |
| GCF_001263985.1_ASM126398v1_00332       | gene417_animalis_cbh          | 945 |
| GCF_004334465.1_ASM433446v1_00939       | gene418_longum_cbh            | 954 |
| GCF_004334435.1_ASM433443v1_00961       | gene419_longum_cbh            | 954 |
| GCF_004333975.1_ASM433397v1_00860       | gene420_longum_cbh            | 954 |
| GCF_003095015.1_ASM309501v1_01321       | gene421_animalis_cbh          | 945 |
| GCF_004333775.1_ASM433377v1_00880       | gene422_longum_cbh            | 954 |
| GCF_004333465.1_ASM433346v1_00935       | gene423_longum_cbh            | 954 |
| GCF_004155725.1_ASM415572v1_00913       | gene424_pseudolongum_cbh      | 945 |
| GCF_900637175.1_49569_F01_01089         | gene425_dentium_cbh           | 951 |

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| GCF_004333005.1_ASM433300v1_00927    | gene426_longum_cbh            | 954 |
| GCF_004332965.1_ASM433296v1_00899    | gene427_longum_cbh            | 954 |
| GCF_004334035.1_ASM433403v1_00960    | gene428_longum_cbh            | 954 |
| GCF_001020265.1_Bbif05v4_01332       | gene429_bifidum_cbh           | 951 |
| GCF_003458805.1_ASM345880v1_00875    | gene430_adolescentis_cbh      | 951 |
| GCF_003437735.1_ASM343773v1_01693    | gene431_adolescentis_cbh      | 951 |
| GCF_001051015.2_ASM105101v2_00576    | gene432_longum_cbh            | 954 |
| GCF_003370125.1_ASM337012v1_01326    | gene433_breve_cbh             | 954 |
| GCF_002861445.1_ASM286144v1_00765    | gene434_longum_cbh            | 954 |
| GCF_002107955.1_Bado70Bv1_01125      | gene435_adolescentis_cbh      | 951 |
| GCF_004332655.1_ASM433265v1_00927    | gene436_longum_cbh            | 954 |
| GCF_003428375.1_ASM342837v1_00960    | gene437_animalis_cbh          | 945 |
| GCF_900157095.1_Bifido_01_v1_01892   | gene438_longum_cbh            | 954 |
| GCF_002833185.1_ASM283318v1_00829    | gene439_longum_cbh            | 954 |
| GCF_004333875.1_ASM433387v1_00853    | gene440_longum_cbh            | 954 |
| GCF_002838665.1_ASM283866v1_00997    | gene441_breve_cbh             | 954 |
| GCF_004155305.1_ASM415530v1_00255    | gene442_pseudolongum_cbh      | 945 |
| GCA_001576955.1_ASM157695v1_00385    | gene443_longum_cbh            | 954 |
| GCF_004155145.1_ASM415514v1_00584    | gene444_pseudolongum_cbh      | 945 |
| GCF_000185665.1_ASM18566v1_01575     | gene445_longum_cbh            | 954 |
| GCF_002832985.1_ASM283298v1_01001    | gene446_longum_cbh            | 954 |
| GCF_001025215.1_ASM102521v1_00937    | gene447_pseudocatenulatum_cbh | 951 |
| GCF_004333325.1_ASM433332v1_01157    | gene448_longum_cbh            | 954 |
| GCF_000741245.1_Biflon_sub.lon_00850 | gene449_longum_cbh            | 954 |
| GCF_002075865.1_Bbif1900B_00430      | gene450_breve_cbh             | 954 |
| GCF_002108015.1_Bado487Bv1_01034     | gene451_adolescentis_cbh      | 951 |
| GCF_003095055.1_ASM309505v1_00839    | gene452_animalis_cbh          | 945 |
| GCF_004156235.1_ASM415623v1_00248    | gene453_pseudolongum_cbh      | 945 |
| GCF_000277325.1_ASM27732v1_00859     | gene454_animalis_cbh          | 945 |

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| GCF_001447955.1_ASM144795v1_00825                             | gene455_longum_cbh       | 954  |
| GCF_004333235.1_ASM433323v1_01097                             | gene456_longum_cbh       | 954  |
| GCF_000172135.1_ASM17213v1_01839                              | gene457_dentium_cbh      | 951  |
| GCF_000730105.1_ASM73010v1_01076                              | gene458_longum_cbh       | 954  |
| GCF_000146775.1_ASM14677v1_00706                              | gene459_dentium_cbh      | 951  |
| GCF_001686125.1_ASM168612v1_00931                             | gene460_longum_cbh_1     | 1023 |
| GCF_003370095.1_ASM337009v1_01744                             | gene461_longum_cbh       | 954  |
| GCF_003472265.1_ASM347226v1_01063                             | gene463_adolescentis_cbh | 951  |
| GCF_900102865.1_IMG-taxon_2651870312_annotated_assembly_00704 | gene465_breve_cbh        | 954  |
| GCF_000149165.1_ASM14916v1_02018                              | gene466_dentium_cbh      | 951  |
| GCF_000166315.1_ASM16631v1_00548                              | gene467_longum_cbh       | 954  |
| GCF_003466045.1_ASM346604v1_00812                             | gene468_longum_cbh       | 954  |
| GCA_004154635.1_ASM415463v1_01325                             | gene469_animalis_cbh     | 945  |
| GCF_003475025.1_ASM347502v1_00929                             | gene470_longum_cbh       | 954  |
| GCF_003438385.1_ASM343838v1_01374                             | gene471_longum_cbh       | 954  |
| GCF_004155715.1_ASM415571v1_00920                             | gene472_pseudolongum_cbh | 945  |
| GCF_003370255.1_ASM337025v1_00211                             | gene473_longum_cbh       | 954  |
| GCF_003860285.1_ASM386028v1_01021                             | gene474_breve_cbh        | 954  |
| GCF_003612445.1_ASM361244v1_00523                             | gene475_pseudolongum_cbh | 945  |
| GCF_002838725.1_ASM283872v1_01038                             | gene476_breve_cbh        | 954  |
| GCF_004332865.1_ASM433286v1_00902                             | gene477_longum_cbh       | 954  |
| GCF_001686085.1_ASM168608v1_00662                             | gene478_dentium_cbh      | 951  |
| GCF_003457975.1_ASM345797v1_01022                             | gene479_longum_cbh       | 954  |
| GCF_004155535.1_ASM415553v1_00127                             | gene480_pseudolongum_cbh | 945  |
| GCF_005405865.1_ASM540586v1_00311                             | gene481_moukalabense_cbh | 951  |
| GCF_003468805.1_ASM346880v1_00538                             | gene482_longum_cbh       | 954  |
| GCF_000421365.1_ASM42136v1_00122                              | gene483_pseudolongum_cbh | 945  |
| GCF_004168525.1_ASM416852v1_01250                             | gene484_pseudolongum_cbh | 945  |

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| GCF_001870755.1_ASM187075v1_00677    | gene485_longum_cbh            | 954 |
| GCF_002838325.1_ASM283832v1_00958    | gene486_breve_cbh             | 954 |
| GCF_004167365.1_ASM416736v1_00484    | gene487_bifidum_cbh           | 951 |
| GCF_001546225.1_ASM154622v1_01866    | gene488_bifidum_cbh           | 951 |
| GCF_003130775.1_ASM313077v1_00142    | gene489_longum_cbh            | 954 |
| GCF_004155745.1_ASM415574v1_01027    | gene490_pseudolongum_cbh      | 945 |
| GCF_002114145.1_ASM211414v1_01345    | gene491_bifidum_cbh           | 951 |
| GCF_001405035.1_13470_2_59_01084     | gene492_pseudocatenulatum_cbh | 951 |
| GCF_002900845.1_ASM290084v1_00576    | gene493_longum_cbh            | 954 |
| GCF_004333375.1_ASM433337v1_00926    | gene494_longum_cbh            | 954 |
| GCF_900637335.1_50618_H02_00851      | gene495_longum_cbh            | 954 |
| GCF_004334215.1_ASM433421v1_00883    | gene496_longum_cbh            | 954 |
| GCF_004332765.1_ASM433276v1_01089    | gene497_longum_cbh            | 954 |
| GCF_003436025.1_ASM343602v1_00461    | gene498_pseudocatenulatum_cbh | 951 |
| GCF_000741295.1_Bifpse_sub.glo_00833 | gene499_pseudolongum_cbh      | 945 |
| GCF_001405355.1_13414_6_61_00313     | gene500_bifidum_cbh           | 951 |
| GCF_004333045.1_ASM433304v1_00938    | gene501_longum_cbh            | 954 |
| GCF_003437695.1_ASM343769v1_00564    | gene502_longum_cbh            | 954 |
| GCF_003790385.1_ASM379038v1_01405    | gene503_bifidum_cbh           | 951 |
| GCF_004155115.1_ASM415511v1_01381    | gene504_pseudolongum_cbh      | 945 |
| GCF_004155565.1_ASM415556v1_01140    | gene505_pseudolongum_cbh      | 945 |
| GCF_002846835.1_ASM284683v1_00832    | gene506_pseudolongum_cbh      | 945 |
| GCF_003464805.1_ASM346480v1_00372    | gene507_longum_cbh            | 954 |
| GCF_003436185.1_ASM343618v1_00770    | gene508_adolescentis_cbh      | 951 |
| GCF_000829295.1_ASM82929v1_00863     | gene509_longum_cbh            | 954 |
| GCF_002107975.1_BadoAL124v1_00973    | gene510_adolescentis_cbh      | 951 |
| GCF_000695895.1_ASM69589v1_00858     | gene511_animalis_cbh          | 945 |
| GCF_003472245.1_ASM347224v1_01810    | gene512_adolescentis_cbh      | 951 |
| GCF_004334145.1_ASM433414v1_00899    | gene513_longum_cbh            | 954 |

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| GCF_004155325.1_ASM415532v1_01549           | gene514_pseudolongum_cbh     | 945 |
| GCF_002838385.1_ASM283838v1_00994           | gene515_breve_cbh            | 954 |
| GCF_004154425.1_ASM415442v1_00225           | gene516_animalis_cbh         | 945 |
| GCF_001275745.1_assBLOI2_00575              | gene517_longum_cbh           | 954 |
| GCF_000196575.1_ASM19657v1_00983            | gene518_longum_cbh           | 954 |
| GCF_003370065.1_ASM337006v1_01918           | gene519_longum_cbh           | 954 |
| GCF_004332635.1_ASM433263v1_01011           | gene520_longum_cbh           | 954 |
| GCF_004334335.1_ASM433433v1_01153           | gene521_longum_cbh           | 954 |
| GCF_005405745.1_ASM540574v1_01410           | gene522_moukalabense_cbh     | 951 |
| GCF_003429385.1_ASM342938v1_00940           | gene523_adolescentis_cbh     | 951 |
| GCF_000568895.1_Mira_de-novo_assembly_01281 | gene524_breve_cbh            | 954 |
| GCF_004334325.1_ASM433432v1_00859           | gene525_longum_cbh           | 954 |
| GCF_900157045.1_Bifido_08_v1_01355          | gene526_animalis_cbh         | 945 |
| GCF_002833125.1_ASM283312v1_00864           | gene527_longum_cbh           | 954 |
| GCF_002833115.1_ASM283311v1_00861           | gene528_longum_cbh           | 954 |
| GCF_000825005.1_BIC1206122787.V1_01580      | gene529_longum_cbh           | 954 |
| GCF_003474905.1_ASM347490v1_01325           | gene530_longum_cbh           | 954 |
| GCF_000261265.1_Blongum44Bv1.0_01178        | gene531_longum_cbh           | 954 |
| GCF_001281305.1_ASM128130v1_01891           | gene532_longum_cbh           | 954 |
| GCF_004333105.1_ASM433310v1_00827           | gene533_longum_cbh           | 954 |
| GCF_000825125.1_BIB1401272845a.V1_01577     | gene534_longum_cbh           | 954 |
| GCF_001264045.1_ASM126404v1_00901           | gene535_breve_cbh            | 954 |
| GCF_004333715.1_ASM433371v1_00865           | gene536_longum_cbh           | 954 |
| GCF_003460425.1_ASM346042v1_00476           | gene537_pseudocatenuatum_cbh | 951 |
| GCF_003466545.1_ASM346654v1_02010           | gene538_longum_cbh           | 954 |
| GCF_004167905.1_ASM416790v1_00325           | gene539_animalis_cbh         | 945 |
| GCF_001263865.1_ASM126386v1_00422           | gene540_animalis_cbh         | 945 |
| GCF_004332645.1_ASM433264v1_00971           | gene541_longum_cbh           | 954 |
| GCF_003466075.1_ASM346607v1_00839           | gene542_longum_cbh           | 954 |

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| GCF_000411435.1_Bifi_brev_HPH0326_V1_01851        | gene543_breve_cbh             | 954 |
| GCF_003437835.1_ASM343783v1_00205                 | gene544_pseudocatenulatum_cbh | 951 |
| GCF_001042595.1_ASM104259v1_01090                 | gene545_dentium_cbh           | 951 |
| GCF_004333995.1_ASM433399v1_01000                 | gene546_longum_cbh            | 954 |
| GCF_003094855.1_ASM309485v1_01847                 | gene547_longum_cbh            | 954 |
| GCF_003094975.1_ASM309497v1_01002                 | gene548_longum_cbh            | 954 |
| GCF_005844335.1_ASM584433v1_00235                 | gene549_pseudocatenulatum_cbh | 951 |
| GCF_004155165.1_ASM415516v1_00980                 | gene550_pseudolongum_cbh      | 945 |
| GCF_003095095.1_ASM309509v1_01329                 | gene551_breve_cbh             | 954 |
| GCF_000273525.1_PB_Bifi_bifi_NCIMB_41171_V1_00693 | gene552_bifidum_cbh           | 951 |
| GCF_001685745.1_ASM168574v1_01087                 | gene553_breve_cbh             | 954 |
| GCF_000466545.1_ASM46654v1_01301                  | gene554_breve_cbh             | 954 |
| GCF_003466425.1_ASM346642v1_01995                 | gene555_longum_cbh            | 954 |
| GCF_003436545.1_ASM343654v1_00622                 | gene556_pseudocatenulatum_cbh | 951 |
| GCF_001264105.1_ASM126410v1_01400                 | gene557_breve_cbh             | 954 |
| GCF_002832955.1_ASM283295v1_00853                 | gene558_longum_cbh            | 954 |
| GCF_004333575.1_ASM433357v1_00854                 | gene559_longum_cbh            | 954 |
| GCF_003390755.1_ASM339075v1_01258                 | gene560_animalis_cbh          | 945 |
| GCF_000022705.1_ASM2270v1_00858                   | gene561_animalis_cbh          | 945 |
| GCF_003436135.1_ASM343613v1_00870                 | gene562_bifidum_cbh           | 951 |
| GCF_003468385.1_ASM346838v1_00956                 | gene563_adolescentis_cbh      | 951 |
| GCF_004333015.1_ASM433301v1_00907                 | gene564_longum_cbh            | 954 |
| GCF_004333365.1_ASM433336v1_00935                 | gene565_longum_cbh            | 954 |
| GCF_003468005.1_ASM346800v1_01294                 | gene566_longum_cbh            | 954 |
| GCF_003466105.1_ASM346610v1_00469                 | gene567_pseudocatenulatum_cbh | 951 |
| GCF_001990225.1_ASM199022v1_01012                 | gene568_breve_cbh             | 954 |
| GCF_001264015.1_ASM126401v1_00486                 | gene569_animalis_cbh          | 945 |
| GCF_002846815.1_ASM284681v1_00797                 | gene570_pseudolongum_cbh      | 945 |
| GCF_000940535.1_BPSEU7765_v1_00966                | gene571_pseudocatenulatum_cbh | 951 |

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| GCF_004334815.1_ASM433481v1_00908 | gene572_longum_cbh            | 954 |
| GCF_004333205.1_ASM433320v1_01000 | gene573_longum_cbh            | 954 |
| GCF_003952825.1_ASM395282v1_00968 | gene574_pseudocatenulatum_cbh | 951 |
| GCF_900445755.1_59024_E01_01561   | gene575_longum_cbh            | 954 |
| GCF_003465205.1_ASM346520v1_01135 | gene576_adolescentis_cbh      | 951 |
| GCF_001595465.1_ASM159546v1_00462 | gene577_longum_cbh            | 954 |
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| GCF_001725985.1_ASM172598v1_00931 | gene579_longum_cbh            | 954 |
| GCF_002075875.1_Bbif1898B_01614   | gene580_longum_cbh            | 954 |
| GCF_000196555.1_ASM19655v1_00851  | gene581_longum_cbh            | 954 |
| GCF_004155855.1_ASM415585v1_01261 | gene582_pseudolongum_cbh      | 945 |
| GCF_003990235.1_ASM399023v1_01819 | gene583_longum_cbh            | 954 |
| GCF_002845845.1_ASM284584v1_00234 | gene584_bifidum_cbh           | 951 |
| GCF_004334745.1_ASM433474v1_01082 | gene585_longum_cbh            | 954 |
| GCF_003466335.1_ASM346633v1_01133 | gene586_adolescentis_cbh      | 951 |
| GCF_004155795.1_ASM415579v1_01008 | gene587_pseudolongum_cbh      | 945 |
| GCF_003466365.1_ASM346636v1_00921 | gene588_bifidum_cbh           | 951 |
| GCF_002838505.1_ASM283850v1_01120 | gene589_breve_cbh             | 954 |
| GCF_004333635.1_ASM433363v1_00951 | gene590_longum_cbh            | 954 |
| GCF_004154695.1_ASM415469v1_00810 | gene591_animalis_cbh          | 945 |
| GCF_004334365.1_ASM433436v1_00897 | gene592_longum_cbh            | 954 |
| GCF_004156145.1_ASM415614v1_00449 | gene593_pseudolongum_cbh      | 945 |
| GCF_003464925.1_ASM346492v1_01388 | gene594_pseudocatenulatum_cbh | 951 |
| GCF_003471505.1_ASM347150v1_00623 | gene595_pseudocatenulatum_cbh | 951 |
| GCF_003471295.1_ASM347129v1_00756 | gene596_pseudocatenulatum_cbh | 951 |
| GCF_000269965.1_ASM26996v1_01533  | gene597_longum_cbh            | 954 |
| GCF_001020245.1_Bbif04v4_01402    | gene598_bifidum_cbh           | 951 |
| GCF_003470545.1_ASM347054v1_00490 | gene599_pseudocatenulatum_cbh | 951 |
| GCF_001686005.1_ASM168600v1_01005 | gene600_pseudocatenulatum_cbh | 951 |

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| GCF_004334045.1_ASM433404v1_00954  | gene601_longum_cbh            | 954 |
| GCF_001263835.1_ASM126383v1_00044  | gene602_animalis_cbh          | 945 |
| GCF_002833135.1_ASM283313v1_00953  | gene603_longum_cbh            | 954 |
| GCF_001685965.1_ASM168596v1_01500  | gene604_pseudocatenulatum_cbh | 951 |
| GCF_004919065.1_ASM491906v1_00430  | gene605_longum_cbh            | 954 |
| GCF_001686025.1_ASM168602v1_00133  | gene606_pseudocatenulatum_cbh | 951 |
| GCF_000702865.1_ASM70286v1_01079   | gene607_adolescentis_cbh      | 951 |
| GCF_000007525.1_ASM752v1_00497     | gene608_longum_cbh            | 954 |
| GCF_003094795.1_ASM309479v1_00882  | gene609_bifidum_cbh           | 951 |
| GCF_000247755.1_ASM24775v2_00253   | gene610_breve_cbh             | 954 |
| GCF_004154995.1_ASM415499v1_01138  | gene611_pseudolongum_cbh      | 945 |
| GCF_004334695.1_ASM433469v1_01014  | gene612_longum_cbh            | 954 |
| GCF_000172535.1_Blac_1.0_01397     | gene613_animalis_cbh          | 945 |
| GCF_002027265.1_ASM202726v1_00786  | gene614_breve_cbh             | 954 |
| GCF_002108035.1_Bado703Bv1_01891   | gene615_adolescentis_cbh      | 951 |
| GCF_004334785.1_ASM433478v1_01020  | gene616_longum_cbh            | 954 |
| GCF_004333445.1_ASM433344v1_01027  | gene617_longum_cbh            | 954 |
| GCF_003465745.1_ASM346574v1_01462  | gene618_longum_cbh            | 954 |
| GCF_000219455.1_ASM21945v1_01045   | gene619_longum_cbh            | 954 |
| GCF_004155475.1_ASM415547v1_00986  | gene620_pseudolongum_cbh      | 945 |
| GCF_003438945.1_ASM343894v1_00025  | gene621_animalis_cbh          | 945 |
| GCF_004334285.1_ASM433428v1_00911  | gene622_longum_cbh            | 954 |
| GCF_900637215.1_49888_B01_01534    | gene623_longum_cbh            | 954 |
| GCF_003473115.1_ASM347311v1_01070  | gene624_pseudocatenulatum_cbh | 951 |
| GCF_003471555.1_ASM347155v1_01793  | gene625_bifidum_cbh           | 951 |
| GCF_003094755.1_ASM309475v1_01705  | gene626_bifidum_cbh           | 951 |
| GCF_003464325.1_ASM346432v1_00907  | gene627_adolescentis_cbh      | 951 |
| GCF_900157195.1_Bifido_02_v1_00872 | gene628_longum_cbh            | 954 |
| GCF_004155235.1_ASM415523v1_00864  | gene629_pseudolongum_cbh      | 945 |

|                                      |                               |     |
|--------------------------------------|-------------------------------|-----|
| GCF_001281425.1_ASM128142v1_00948    | gene630_breve_cbh             | 954 |
| GCF_900637145.1_49569_E01_00933      | gene631_breve_cbh             | 954 |
| GCF_000771145.1_DSM-20092_00545      | gene632_pseudolongum_cbh      | 945 |
| GCF_003467335.1_ASM346733v1_01053    | gene633_adolescentis_cbh      | 951 |
| GCF_004334545.1_ASM433454v1_00973    | gene634_longum_cbh            | 954 |
| GCF_000741415.1_Bifste_00377         | gene635_adolescentis_cbh      | 951 |
| GCF_000771725.1_DSM-20436_00887      | gene636_dentium_cbh           | 951 |
| GCF_003463455.1_ASM346345v1_01205    | gene637_pseudocatenulatum_cbh | 951 |
| GCF_000771445.1_DSM-20438_00223      | gene638_pseudocatenulatum_cbh | 951 |
| GCF_003390735.1_ASM339073v1_01223    | gene639_bifidum_cbh           | 951 |
| GCF_003464685.1_ASM346468v1_00180    | gene640_longum_cbh            | 954 |
| GCF_001020375.1_Bbif03v4_01378       | gene641_bifidum_cbh           | 951 |
| GCF_004334245.1_ASM433424v1_00945    | gene642_longum_cbh            | 954 |
| GCF_003463505.1_ASM346350v1_01124    | gene643_pseudocatenulatum_cbh | 951 |
| GCF_004332725.1_ASM433272v1_00927    | gene645_longum_cbh            | 954 |
| GCF_003370155.1_ASM337015v1_00520    | gene646_breve_cbh             | 954 |
| GCF_002838685.1_ASM283868v1_00997    | gene647_breve_cbh             | 954 |
| GCF_004333305.1_ASM433330v1_00851    | gene648_longum_cbh            | 954 |
| GCF_001685945.1_ASM168594v1_01578    | gene649_breve_cbh             | 954 |
| GCF_001686245.1_ASM168624v1_01450    | gene650_longum_cbh            | 954 |
| GCF_004332625.1_ASM433262v1_00936    | gene651_longum_cbh            | 954 |
| GCF_004334485.1_ASM433448v1_00962    | gene652_longum_cbh            | 954 |
| GCF_004334345.1_ASM433434v1_00904    | gene653_longum_cbh            | 954 |
| GCF_002076095.1_Bbif1886B_00569      | gene654_longum_cbh            | 954 |
| GCF_002838365.1_ASM283836v1_01151    | gene655_breve_cbh             | 954 |
| GCF_002108135.1_BadoLMG10733v1_00950 | gene656_adolescentis_cbh      | 951 |
| GCF_003472095.1_ASM347209v1_01018    | gene657_adolescentis_cbh      | 951 |
| GCF_003437995.1_ASM343799v1_00615    | gene658_longum_cbh            | 954 |
| GCF_003465455.1_ASM346545v1_01357    | gene659_longum_cbh            | 954 |

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|---|-------------------------------|------|
| GCF_003467755.1_ASM346775v1_00249                             | gene660_pseudocatenulatum_cbh | 951  |
| GCF_900103055.1_IMG-taxon_2636416037_annotated_assembly_01196 | gene661_longum_cbh            | 954  |
| GCF_004333935.1_ASM433393v1_01001                             | gene662_longum_cbh            | 954  |
| GCF_004334075.1_ASM433407v1_00987                             | gene663_longum_cbh            | 954  |
| GCF_002221565.2_ASM222156v2_00398                             | gene664_animalis_cbh          | 945  |
| GCF_002871815.1_ASM287181v1_01711                             | gene665_breve_cbh             | 954  |
| GCF_002838625.1_ASM283862v1_00997                             | gene666_breve_cbh             | 954  |
| GCF_002838445.1_ASM283844v1_01189                             | gene667_breve_cbh             | 954  |
| GCF_003470125.1_ASM347012v1_00475                             | gene668_pseudocatenulatum_cbh | 951  |
| GCF_000741625.1_Biflon_sub.sui_00938                          | gene669_longum_cbh            | 954  |
| GCF_002861455.1_ASM286145v1_01655                             | gene670_breve_cbh             | 954  |
| GCF_004803425.1_ASM480342v1_00864                             | gene671_longum_cbh_1          | 1023 |
| GCF_000741485.1_Bifani_sub.ani_00750                          | gene672_animalis_cbh          | 945  |
| GCF_003437345.1_ASM343734v1_01709                             | gene673_bifidum_cbh           | 951  |
| GCF_004333125.1_ASM433312v1_00854                             | gene674_longum_cbh            | 954  |
| GCF_001406455.1_13414_6_8_00971                               | gene675_adolescentis_cbh      | 951  |
| GCF_000568955.1_ASM56895v1_00907                              | gene676_breve_cbh             | 954  |
| GCF_004333795.1_ASM433379v1_00965                             | gene677_longum_cbh            | 954  |
| GCF_004333535.1_ASM433353v1_00912                             | gene678_longum_cbh            | 954  |
| GCF_003463285.1_ASM346328v1_00175                             | gene679_longum_cbh            | 954  |
| GCF_004155625.1_ASM415562v1_00604                             | gene680_pseudolongum_cbh      | 945  |
| GCF_001685845.1_ASM168584v1_00850                             | gene681_breve_cbh             | 954  |
| GCF_004155615.1_ASM415561v1_00989                             | gene682_pseudolongum_cbh      | 945  |
| GCF_004156075.1_ASM415607v1_01285                             | gene683_pseudolongum_cbh      | 945  |
| GCF_002076015.1_Bbif1890B_01851                               | gene684_longum_cbh            | 954  |
| GCF_004155045.1_ASM415504v1_01204                             | gene685_pseudolongum_cbh      | 945  |
| GCF_001020255.1_Bbif02v4_01371                                | gene686_bifidum_cbh           | 951  |
| GCF_003473145.1_ASM347314v1_00706                             | gene687_bifidum_cbh           | 951  |

|                                     |                               |     |
|-------------------------------------|-------------------------------|-----|
| GCF_003465665.1_ASM346566v1_01887   | gene688_longum_cbh            | 954 |
| GCF_900157155.1_Bifido_06_v1_00698  | gene689_longum_cbh            | 954 |
| GCF_004155275.1_ASM415527v1_01175   | gene690_pseudolongum_cbh      | 945 |
| GCF_003467785.1_ASM346778v1_00249   | gene691_pseudocatenulatum_cbh | 951 |
| GCF_001685725.1_ASM168572v1_00700   | gene692_breve_cbh             | 954 |
| GCF_001685685.1_ASM168568v1_00196   | gene693_bifidum_cbh           | 951 |
| GCF_005844345.1_ASM584434v1_01233   | gene694_longum_cbh            | 954 |
| GCF_002108045.1_BadoAD28v1_01562    | gene695_adolescentis_cbh      | 951 |
| GCF_000421385.1_ASM42138v1_01339    | gene696_longum_cbh            | 954 |
| GCF_002075965.1_Bbif1892B_00509     | gene697_adolescentis_cbh      | 951 |
| GCF_003473025.1_ASM347302v1_00990   | gene698_pseudocatenulatum_cbh | 951 |
| GCF_002108165.1_BadoLMG188971_01806 | gene699_adolescentis_cbh      | 951 |
| GCF_004156195.1_ASM415619v1_01630   | gene700_pseudolongum_cbh      | 945 |
| GCF_002838585.1_ASM283858v1_01039   | gene701_breve_cbh             | 954 |
| GCF_004333565.1_ASM433356v1_00964   | gene702_longum_cbh            | 954 |
| GCF_002833315.1_ASM283331v1_00963   | gene703_longum_cbh            | 954 |
| GCF_002914815.1_ASM291481v1_00105   | gene704_animalis_cbh          | 945 |
| GCF_003342655.1_ASM334265v1_00891   | gene705_longum_cbh            | 954 |
| GCF_003437775.1_ASM343777v1_00031   | gene706_adolescentis_cbh      | 951 |
| GCF_003094645.1_ASM309464v1_01540   | gene707_bifidum_cbh           | 951 |
| GCF_003468265.1_ASM346826v1_00125   | gene708_longum_cbh            | 954 |
| GCF_001685805.1_ASM168580v1_01277   | gene709_breve_cbh             | 954 |
| GCF_002076105.1_Bbif1887B_00694     | gene710_bifidum_cbh           | 951 |
| GCF_000816205.1_ASM81620v1_00862    | gene711_animalis_cbh          | 945 |
| GCF_001263935.1_ASM126393v1_00019   | gene712_breve_cbh             | 954 |
| GCF_001020335.1_Bbif08v4_01448      | gene713_bifidum_cbh           | 951 |
| GCF_003437755.1_ASM343775v1_01007   | gene714_adolescentis_cbh      | 951 |
| GCF_002838745.1_ASM283874v1_00997   | gene715_breve_cbh             | 954 |
| GCF_003030905.1_ASM303090v1_01080   | gene716_adolescentis_cbh      | 951 |

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|--|-------------------------------|-----|
| GCF_001686065.1_ASM168606v1_01219      | gene717_pseudocatenulatum_cbh | 951 |
| GCF_002846715.1_ASM284671v1_00484      | gene718_pseudolongum_cbh      | 945 |
| GCF_004155425.1_ASM415542v1_00185      | gene719_pseudolongum_cbh      | 945 |
| GCF_002838525.1_ASM283852v1_00968      | gene720_breve_cbh             | 954 |
| GCF_001686205.1_ASM168620v1_00330      | gene721_longum_cbh            | 954 |
| GCF_003471325.1_ASM347132v1_00243      | gene722_pseudocatenulatum_cbh | 951 |
| GCF_004155695.1_ASM415569v1_00197      | gene723_pseudolongum_cbh      | 945 |
| GCF_001263975.1_ASM126397v1_00603      | gene724_animalis_cbh          | 945 |
| GCF_003470615.1_ASM347061v1_01793      | gene725_bifidum_cbh           | 951 |
| GCF_005405825.1_ASM540582v1_00764      | gene726_moukalabense_cbh      | 951 |
| GCF_002833055.1_ASM283305v1_00866      | gene727_longum_cbh            | 954 |
| GCF_000265095.1_ASM26509v1_00853       | gene728_bifidum_cbh           | 951 |
| GCF_000730045.1_ASM73004v1_01187       | gene729_longum_cbh            | 954 |
| GCF_005844715.1_ASM584471v1_00835      | gene730_longum_cbh            | 954 |
| GCF_004333115.1_ASM433311v1_00900      | gene731_longum_cbh            | 954 |
| GCF_000730125.1_ASM73012v1_00390       | gene732_longum_cbh            | 954 |
| GCF_004324325.1_ASM432432v1_02023      | gene733_longum_cbh            | 954 |
| GCF_004334155.1_ASM433415v1_01060      | gene734_longum_cbh            | 954 |
| GCF_004803425.1_ASM480342v1_02124      | gene735_longum_cbh            | 954 |
| GCF_002838645.1_ASM283864v1_00996      | gene736_breve_cbh             | 954 |
| GCF_004155595.1_ASM415559v1_01034      | gene737_pseudolongum_cbh      | 945 |
| GCF_003459475.1_ASM345947v1_00555      | gene738_pseudocatenulatum_cbh | 951 |
| GCF_000261205.1_Blongum22Bv1.0_01260   | gene739_longum_cbh            | 954 |
| GCF_003465095.1_ASM346509v1_01381      | gene740_longum_cbh            | 954 |
| GCF_004333515.1_ASM433351v1_00917      | gene741_longum_cbh            | 954 |
| GCF_003094915.1_ASM309491v1_01025      | gene742_animalis_cbh          | 945 |
| GCF_003094935.1_ASM309493v1_00004      | gene743_longum_cbh            | 954 |
| GCF_004334355.1_ASM433435v1_00897      | gene744_longum_cbh            | 954 |
| GCF_000825105.1_BIB1401242951.V1_01574 | gene745_longum_cbh            | 954 |

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|--|--|------|
| GCF_001010915.1_ASM101091v1_01480                  | gene746_adolescentis_cbh   | 951  |
| GCF_004333625.1_ASM433362v1_00880                  | gene747_longum_cbh   | 954  |
| GCF_003437095.1_ASM343709v1_00383                  | gene748_longum_cbh   | 954  |
| GCF_004332855.1_ASM433285v1_00966                  | gene749_longum_cbh   | 954  |
| GCA_001576865.1_ASM157686v1_01088                  | gene750_bifidum_cbh  | 951  |
| GCF_003465365.1_ASM346536v1_00951                  | gene751_longum_cbh   | 954  |
| GCF_004155645.1_ASM415564v1_01190                  | gene753_pseudolongum_cbh   | 945  |
| GCF_000825085.1_BIC1401212621b.V1_01604            | gene754_longum_cbh   | 954  |
| GCF_001685885.1_ASM168588v1_00231                  | gene755_breve_cbh  | 954  |
| GCF_003671995.1_ASM367199v1_00881                  | gene756_animalis_cbh   | 945  |
| GCF_003465135.1_ASM346513v1_00583                  | gene757_pseudocatenulatum_cbh                                    | 951  |
| GCF_000021185.1_ASM2118v1_00504                    | BSH-T2_Listeria_monocytogenes_HCC23                              | 1011 |
| GCF_000072485.1_ASM7248v1_02093                    | BSH-T6_Stenotrophomonas_maltophilia_K279a                        | 1053 |
| GCF_000146405.1_ASM14640v1_00655                   | BSH-T2_Streptococcus_equinus_ATCC_700338                         | 981  |
| GCF_000146525.1_ASM14652v1_00812                   | BSH-T2_Streptococcus_gallolyticus_subsp._gallolyticus_TX20005    | 981  |
| GCF_000154065.1_ASM15406v1_01793                   | BSH-T1_Dorea_longicatena_DSM_13814                               | 978  |
| GCF_000154245.1_ASM15424v1_02114                   | BSH-T1_Clostridium_sp._L2-50                                     | 975  |
| GCF_000154445.1_ASM15444v1_02475                   | BSH-T0_Intestinibacter_bartlettii_DSM_16795                      | 987  |
| GCF_000154525.1_ASM15452v1_02320                   | BSH-T6_Bacteroides_stercoris_ATCC_43183                          | 1059 |
| GCF_000154545.1_ASM15454v1_02459                   | BSH-T1_Clostridium_sp._SS2/1                                     | 972  |
| GCF_000154845.1_ASM15484v1_00317                   | BSH-T5_Bacteroides_coprocola_DSM_17136                           | 1104 |
| GCF_000154985.1_ASM15498v1_00524                   | BSH-T2_Streptococcus_infantarius_subsp._infantarius_ATCC_BAA-102 | 978  |
| GCF_000156035.2_ASM15603v2_00266                   | BSH-T7_Tyzzarella_nexilis_DSM_1787                               | 978  |
| GCF_000156655.1_ASM15665v1_00072                   | BSH-T1_Holdemanaella_biformis_DSM_3989                           | 951  |
| GCF_000158195.2_Fuso_mor_ATCC9817_V2_01081         | BSH-T5_Fusobacterium_mortiferum_ATCC_9817                        | 1101 |
| GCF_000158375.2_Clostridium_sp._7_2_43FAA_V2_02978 | BSH-T0_Clostridium_sp._7_2_43FAA                                 | 993  |
| GCF_000159415.1_ASM15941v1_01864                   | BSH-T3_Lactobacillus_ultunensis_DSM_16047                        | 978  |
| GCF_000161915.2_Lacto_cris_MV-1A-US_V2_00115       | BSH-T3_Lactobacillus_crispatus_MV-1A-US                          | 978  |

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|-----------------------------------|--|------|
| GCF_000168475.1_ASM16847v1_02573  | BSH-T2_Listeria_monocytogenes_FSL_J2-071           | 1011 |
| GCF_000168635.2_ASM16863v2_02117  | BSH-T2_Listeria_monocytogenes_J0161                | 978  |
| GCF_000173795.1_ASM17379v1_02246  | BSH-T1_Catenibacterium_mitsuokai_DSM_15897         | 975  |
| GCF_000179335.1_ASM17933v1_01074  | BSH-T1_Peptoniphilus_sp._oral_taxon_836_str._F0141 | 978  |
| GCF_000182605.1_ASM18260v1_01543  | BSH-T0_Clostridium_butyricum_E4_str._BoNT_E_BL5262 | 990  |
| GCF_000187895.1_ASM18789v1_00984  | BSH-T5_Bacteroides_plebeius_DSM_17135              | 1083 |
| GCF_000382085.1_ASM38208v1_00272  | BSH-T1_[Eubacterium]_siraeum_DSM_15702             | 975  |
| GCF_003019655.1_ASM301965v1_00418 | BSH-T5_Fusobacterium_varium_ATCC_27725             | 1104 |

**Table S3 The clade-specific core genes of *B. pseudolongum***

| Gene       | Annotation   | A | B | C | D |
|------------|--|---|---|---|---|
| group_1132 | hypothetical protein                                 | 1 | 0 | 0 | 0 |
| group_1946 | FHA domain protein                                   | 1 | 0 | 0 | 0 |
| group_1947 | 5-formyltetrahydrofolate cyclo-ligase family protein | 1 | 0 | 0 | 0 |
| group_1948 | hypothetical protein                                 | 1 | 0 | 0 | 0 |
| group_1949 | tRNA pseudouridine synthase B                        | 1 | 0 | 0 | 0 |
| group_1951 | hypothetical protein                                 | 1 | 0 | 0 | 0 |
| group_2841 | hypothetical protein                                 | 1 | 0 | 0 | 0 |
| group_2842 | Ribonuclease HI                                      | 1 | 0 | 0 | 0 |
| group_2843 | hypothetical protein                                 | 1 | 0 | 0 | 0 |
| group_2846 | pheromone autoinducer 2 transporter                  | 1 | 0 | 0 | 0 |
| group_2847 | hypothetical protein                                 | 1 | 0 | 0 | 0 |
| group_2848 | hypothetical protein                                 | 1 | 0 | 0 | 0 |
| group_2851 | hypothetical protein                                 | 1 | 0 | 0 | 0 |
| group_2852 | hypothetical protein                                 | 1 | 0 | 0 | 0 |
| group_2866 | Dephospho-CoA kinase                                 | 1 | 0 | 0 | 0 |
| group_2867 | DNA utilization protein GntX                         | 1 | 0 | 0 | 0 |
| group_2868 | Transcriptional regulator LytR                       | 1 | 0 | 0 | 0 |

|            |   |   |   |   |   |
|------------|---|---|---|---|---|
| group_2869 | ESX-1 secretion system protein EccCa1                       | 1 | 0 | 0 | 0 |
| group_2870 | Beta-hexosaminidase   | 1 | 0 | 0 | 0 |
| group_2872 | Sensor histidine kinase DesK                                | 1 | 0 | 0 | 0 |
| group_2873 | hypothetical protein  | 1 | 0 | 0 | 0 |
| group_2876 | Glycerate 2-kinase  | 1 | 0 | 0 | 0 |
| cdaR       | Carbohydrate diacid regulator                               | 1 | 0 | 0 | 0 |
| group_2879 | hypothetical protein  | 1 | 0 | 0 | 0 |
| group_2880 | hypothetical protein  | 1 | 0 | 0 | 0 |
| group_2881 | hypothetical protein  | 1 | 0 | 0 | 0 |
| group_2882 | cell division protein FtsQ                                  | 1 | 0 | 0 | 0 |
| group_2884 | DivIVA protein  | 1 | 0 | 0 | 0 |
| group_2885 | LL-diaminopimelate aminotransferase                         | 1 | 0 | 0 | 0 |
| group_2886 | Methionine import ATP-binding protein MetN                  | 1 | 0 | 0 | 0 |
| group_2901 | hypothetical protein  | 1 | 0 | 0 | 0 |
| group_2903 | Resuscitation-promoting factor Rpf2 precursor               | 1 | 0 | 0 | 0 |
| group_2905 | hypothetical protein  | 1 | 0 | 0 | 0 |
| group_2909 | HTH-type transcriptional regulator DegA                     | 1 | 0 | 0 | 0 |
| group_2911 | MarR family protein   | 1 | 0 | 0 | 0 |
| group_2913 | Bacterial type II secretion system protein F domain protein | 1 | 0 | 0 | 0 |
| group_2914 | hypothetical protein  | 1 | 0 | 0 | 0 |
| group_2916 | L-glyceraldehyde 3-phosphate reductase                      | 1 | 0 | 0 | 0 |
| group_2920 | hypothetical protein  | 1 | 0 | 0 | 0 |
| group_2923 | hypothetical protein  | 1 | 0 | 0 | 0 |
| group_2924 | Holo-[acyl-carrier-protein] synthase                        | 1 | 0 | 0 | 0 |
| group_2925 | hypothetical protein  | 1 | 0 | 0 | 0 |
| group_887  | hypothetical protein  | 1 | 0 | 0 | 0 |
| group_2164 | hypothetical protein  | 0 | 1 | 0 | 0 |
| group_3445 | hypothetical protein  | 0 | 1 | 0 | 0 |
| group_2818 | Adenosine monophosphate-protein transferase SoFic           | 0 | 0 | 1 | 0 |

|            |                                       |   |   |   |   |
|------------|---------------------------------------|---|---|---|---|
| group_2824 | Nucleotidyltransferase domain protein | 0 | 0 | 1 | 0 |
| group_15   | hypothetical protein                  | 0 | 0 | 0 | 1 |
| group_1754 | hypothetical protein                  | 0 | 0 | 0 | 1 |