

Figure S1. Sequence alignment of the atpA gene. Red: homologous nucleotides in comparison with the reference sequence of soybean (*Glycine max*, GenBank acc. No. Z14031.1); green: newly designed LAMP primers targeting the atpA gene of soybean (*Glycine max*, GenBank acc. No. Z14031.1)

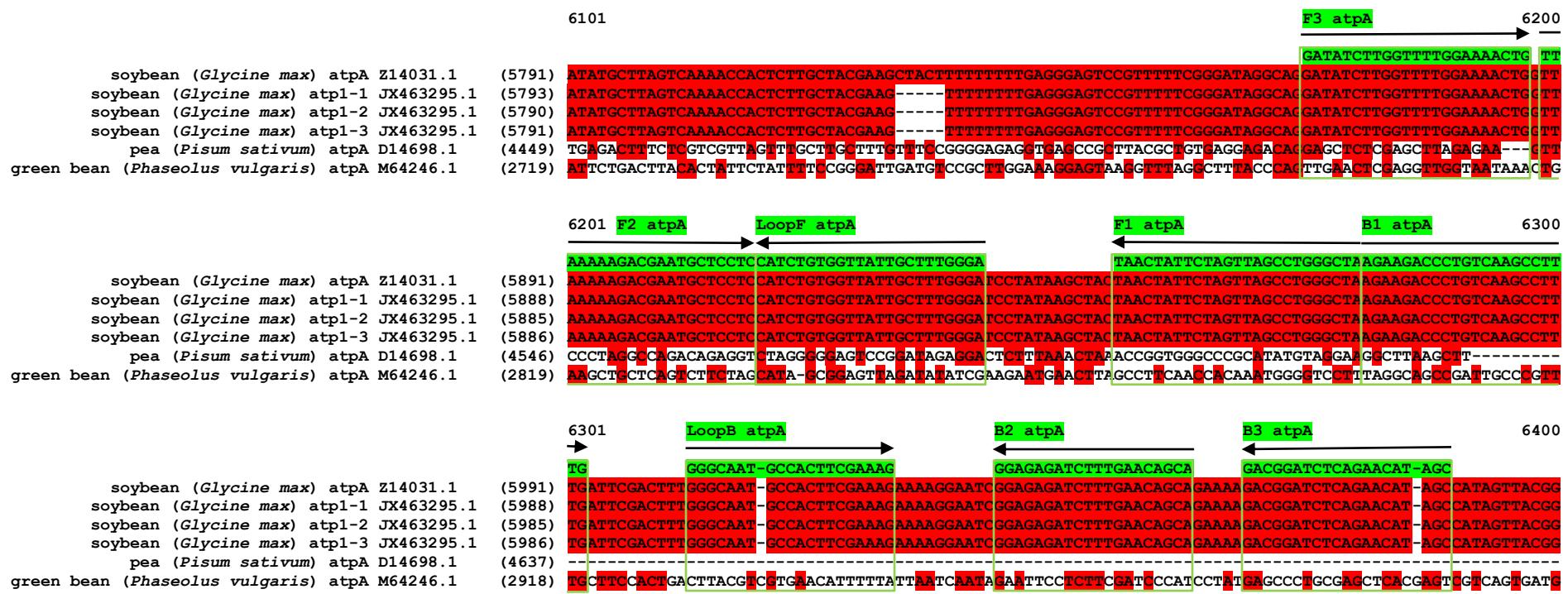
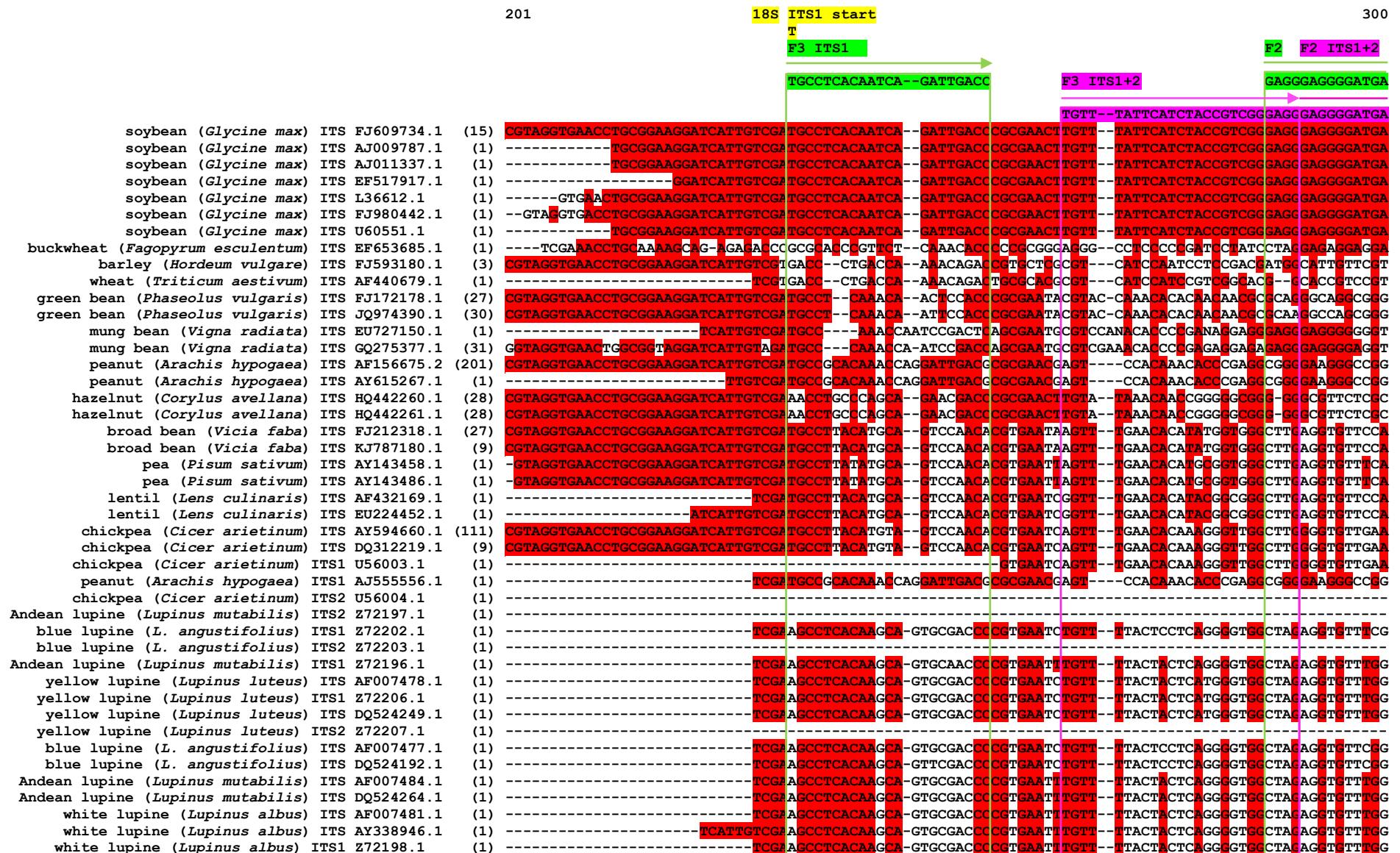
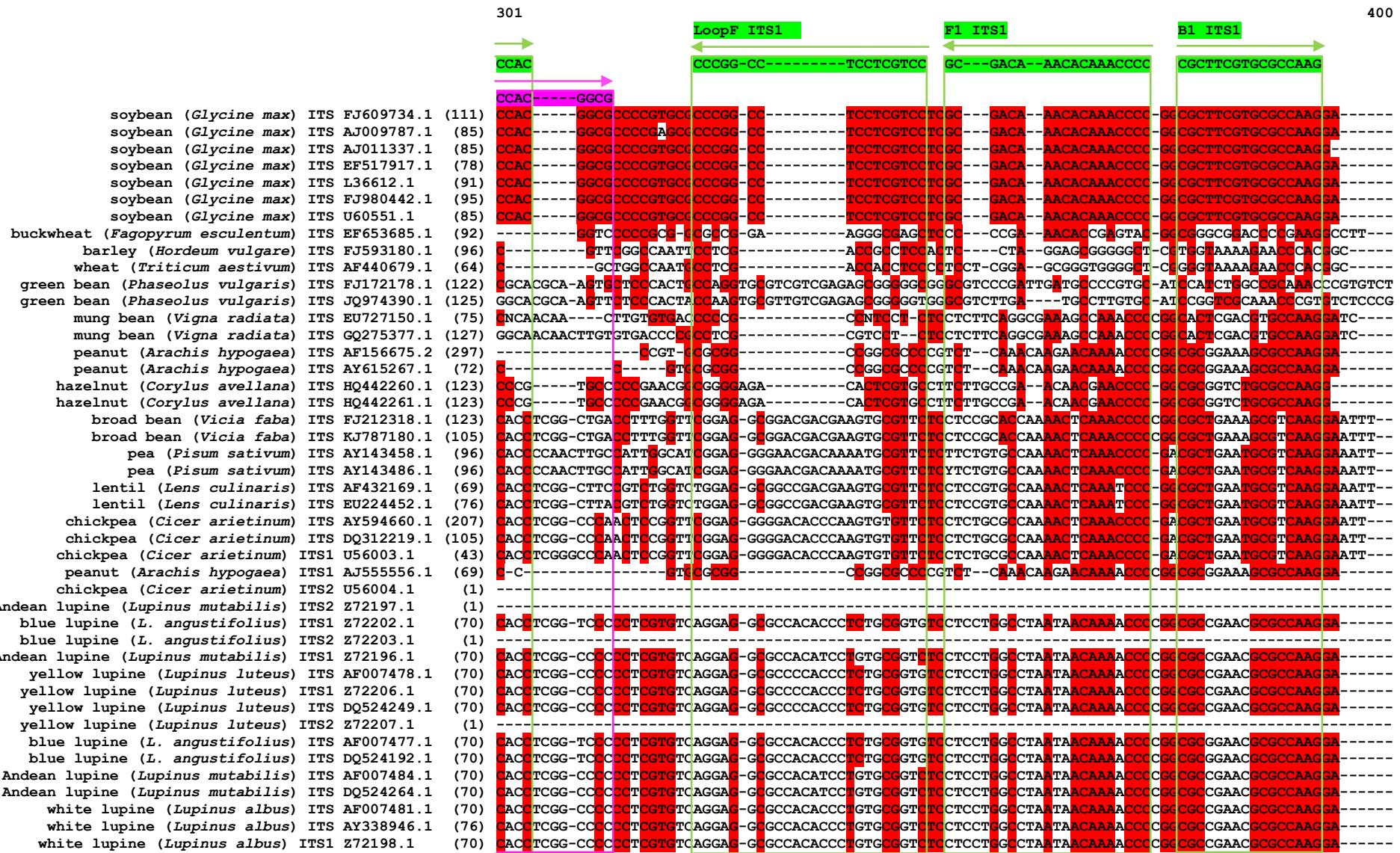
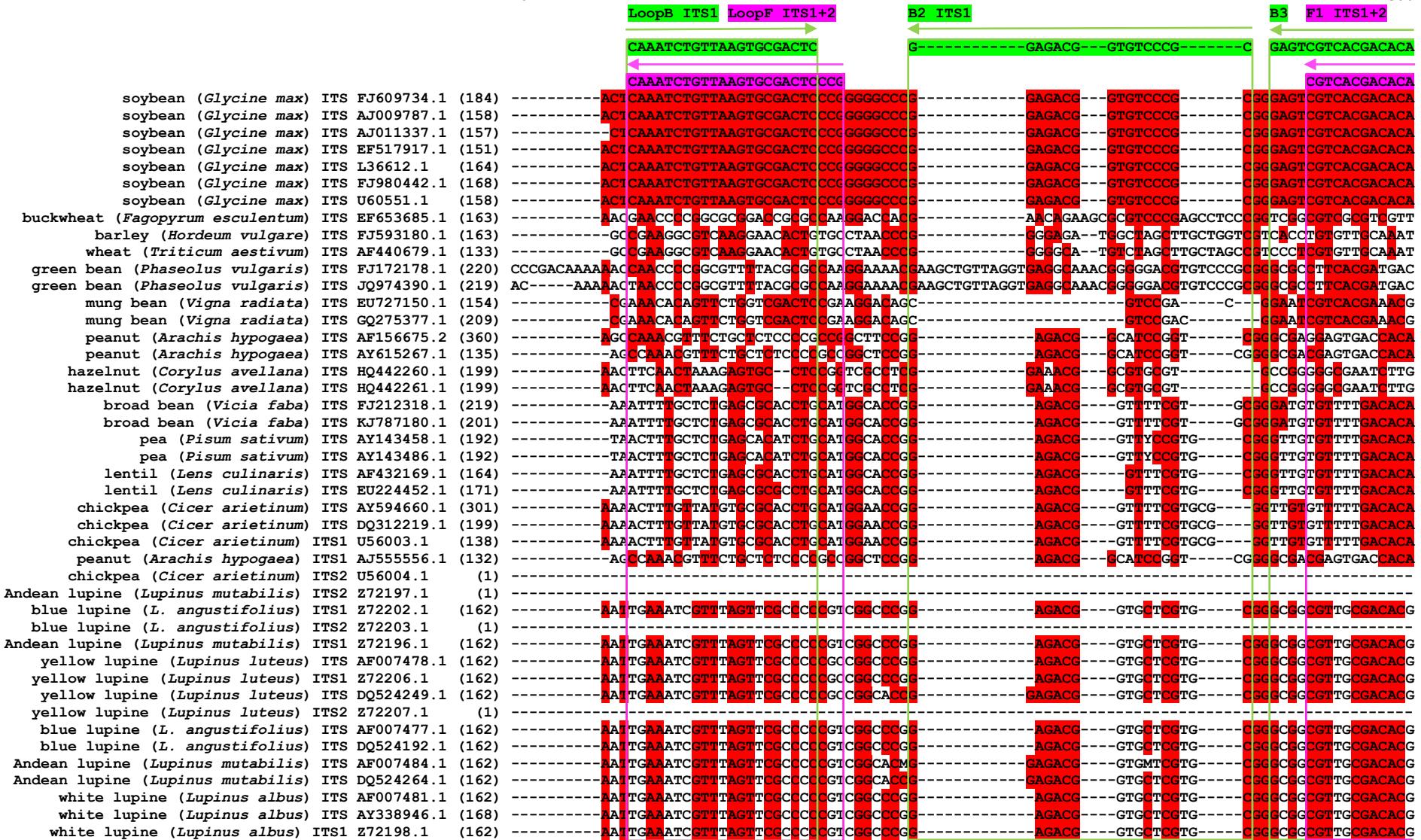


Figure S2. Sequence alignment of the genes encoding ribosomal RNA and both internal transcribed spacers, ITS1 and ITS2. Red: homologous nucleotides in comparison with the reference sequence of soybean (*Glycine max*, GenBank acc. No. FJ609734.1); yellow: start and end of the 18S, ITS1, 5.8S, ITS2 and the 26S gene, respectively; green: newly designed primers targeting the ITS1 gene of soybean (*Glycine max*); magenta: newly designed primers spanning the ITS1+2 genes of soybean (*Glycine max*); cyan: newly designed LAMP primers targeting the ITS2 gene of soybean (*Glycine max*)







A

ACATTT

ACATTTACATACAATG

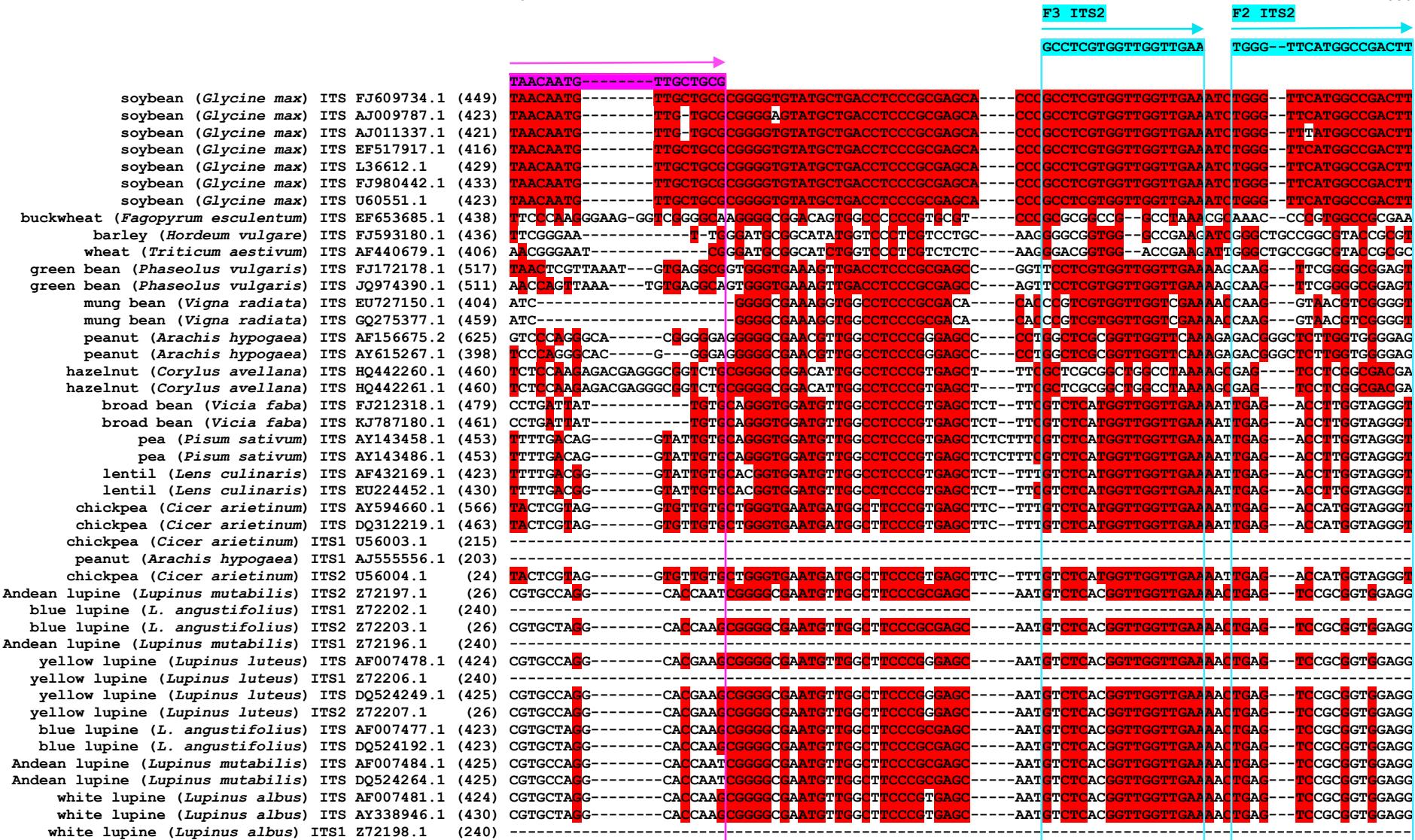
soybean (<i>Glycine max</i>)	ITS FJ609734.1	(252)	ACATTTACATACAATGACTCTCGCAACGGATATCTGGCTCTGCATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
soybean (<i>Glycine max</i>)	ITS AJ009787.1	(226)	ACATTTACATACAATGACTCTCGCAACGGATATCTGGCTCTGCATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
soybean (<i>Glycine max</i>)	ITS AJ011337.1	(224)	ACATTTACATACAATGACTCTCGCAACGGATATCTGGCTCTGCATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
soybean (<i>Glycine max</i>)	ITS EF517917.1	(219)	ACATTTACATACAATGACTCTCGCAACGGATATCTGGCTCTGCATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
soybean (<i>Glycine max</i>)	ITS L36612.1	(232)	ACATTTACATACAATGACTCTCGCAACGGATATCTGGCTCTGCATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
soybean (<i>Glycine max</i>)	ITS FJ980442.1	(236)	ACATTTACATACAATGACTCTCGCAACGGATATCTGGCTCTGCATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
soybean (<i>Glycine max</i>)	ITS U60551.1	(226)	ACATTTACATACAATGACTCTCGCAACGGATATCTGGCTCTGCATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
buckwheat (<i>Fagopyrum esculentum</i>)	ITS EF536385.1	(241)	TCTACGAAACGAACTCTCGCAACGGATATCTGGCTCTGCATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
barley (<i>Hordeum vulgare</i>)	ITS FJ593180.1	(238)	ATATTTCATCCACCGACTCTCGCAACGGATATCTGGCTCTGCATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
wheat (<i>Triticum aestivum</i>)	ITS AF440679.1	(208)	CTATTTATCCACCGACTCTCGCAACGGATATCTGGCTCTGCATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
green bean (<i>Phaseolus vulgaris</i>)	ITS FJ172178.1	(320)	ATGTT-ATGAAATGACTCTCGCAACGGATATCTGGCTCTGCATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
green bean (<i>Phaseolus vulgaris</i>)	ITS JQ974390.1	(314)	ATGTT-ATGAAATGACTCTCGCAACGGATATCTGGCTCTGCATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
mung bean (<i>Vigna radiata</i>)	ITS EU721750.1	(212)	AATCA-----AAACGACTCTCGCAACGGATATCTGGCTCTTGCAATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
mung bean (<i>Vigna radiata</i>)	ITS GQ275377.1	(267)	AATCA-----AAACGACTCTCGCAACGGATATCTGGCTCTTGCAATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
peanut (<i>Arachis hypogaea</i>)	ITS AF156675.2	(428)	AGGTTTA-----AGAACGACTCTCGCAACGGATATCTGGCTCTTGCAATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
peanut (<i>Arachis hypogaea</i>)	ITS AY615267.1	(203)	AGAGTTA-----AGAACGACTCTCGCAACGGATATCTGGCTCTTGCAATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
hazelnut (<i>Corylus avellana</i>)	ITS HQ442260.1	(263)	TGCAA-----ACCATAACGACTCTCGCAACGGATATCTGGCTCTGCATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
hazelnut (<i>Corylus avellana</i>)	ITS HQ442261.1	(263)	TGCAA-----ACCATAACGACTCTCGCAACGGATATCTGGCTCTGCATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
broad bean (<i>Vicia faba</i>)	ITS FJ212318.1	(286)	TGATA-----TAGAATGACTCTCGCAACGGATATCTAGGCTCTTGCAATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
broad bean (<i>Vicia faba</i>)	ITS KJ787180.1	(268)	TGATA-----TAGAATGACTCTCGCAACGGATATCTAGGCTCTTGCAATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
pea (<i>Pisum sativum</i>)	ITS AY143458.1	(259)	TTTAT-----ATAAAATGACTCTCGCAACGGATATCTAGGCTCTTGCAATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
pea (<i>Pisum sativum</i>)	ITS AY143486.1	(259)	TTTAT-----ATAAAATGACTCTCGCAACGGATATCTAGGCTCTTGCAATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
lentil (<i>Lens culinaris</i>)	ITS AF432169.1	(230)	TGATA-----TAGAATGACTCTCGCAACGGATATCTAGGCTCTTGCAATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
lentil (<i>Lens culinaris</i>)	ITS EU224452.1	(237)	TGATA-----TAGAATGACTCTCGCAACGGATATCTAGGCTCTTGCAATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
chickpea (<i>Cicer arietinum</i>)	ITS AY594660.1	(370)	TGAAA-----TTAGAATGACTCTCGCAACGGATATCTAGGCTCTTGCAATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
chickpea (<i>Cicer arietinum</i>)	ITS DQ312219.1	(268)	TGAAATA-----TAGAATGACTCTCGCAACGGATATCTAGGCTCTTGCAATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
chickpea (<i>Cicer arietinum</i>)	ITS1 U56003.1	(207)	TGAAAT-----	-
peanut (<i>Arachis hypogaea</i>)	ITS1 AJ555556.1	(200)	AGA-----	-
chickpea (<i>Cicer arietinum</i>)	ITS2 U56004.1	(1)	-----	-
Andean lupine (<i>Lupinus mutabilis</i>)	ITS2 Z72197.1	(1)	-----	-
blue lupine (<i>L. angustifolius</i>)	ITS1 Z72202.1	(230)	CTTAT-----CCTAA-	-
blue lupine (<i>L. angustifolius</i>)	ITS2 Z72203.1	(1)	-----	-
Andean lupine (<i>Lupinus mutabilis</i>)	ITS1 Z72196.1	(230)	CTTAT-----CCTAA-	-
yellow lupine (<i>Lupinus luteus</i>)	ITS AF007478.1	(230)	CTTAT-----CCTAAAGACTCTCGCAACGGATATCTGGCTCTGCATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
yellow lupine (<i>Lupinus luteus</i>)	ITS1 Z72206.1	(230)	CTTAT-----CCTAA-	-
yellow lupine (<i>Lupinus luteus</i>)	ITS DQ524249.1	(231)	CTTAT-----CCTAAAGACTCTCGCAACGGATATCTGGCTCTGCATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
yellow lupine (<i>Lupinus luteus</i>)	ITS2 Z72207.1	(1)	-----	-
blue lupine (<i>L. angustifolius</i>)	ITS AF007477.1	(230)	CTTAT-----CCTAAAGACTCTCGCAACGGATATCTGGCTCTGCATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
blue lupine (<i>L. angustifolius</i>)	ITS DQ524192.1	(230)	CTTAT-----CCTAAAGACTCTCGCAACGGATATCTGGCTCTGCATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
Andean lupine (<i>Lupinus mutabilis</i>)	ITS AF007484.1	(231)	CTTAT-----CCTAAAGACTCTCGCAACGGATATCTGGCTCTTGCAATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
Andean lupine (<i>Lupinus mutabilis</i>)	ITS DQ524264.1	(231)	CTTAT-----CCTAAAGACTCTCGCAACGGATATCTGGCTCTTGCAATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
white lupine (<i>Lupinus albus</i>)	ITS AF007481.1	(230)	CTTAT-----CCTAAAGACTCTCGCAACGGATATCTGGCTCTTGCAATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
white lupine (<i>Lupinus albus</i>)	ITS AY338946.1	(236)	CTTAT-----CCTAAAGACTCTCGCAACGGATATCTGGCTCTTGCAATCGATGAAGAACGTAGCGAAATCGGATACTTGGTGTGAATTGCA	-GAATCCCG
white lupine (<i>Lupinus albus</i>)	ITS1 Z72198.1	(230)	CTTAT-----CCTAA-	-

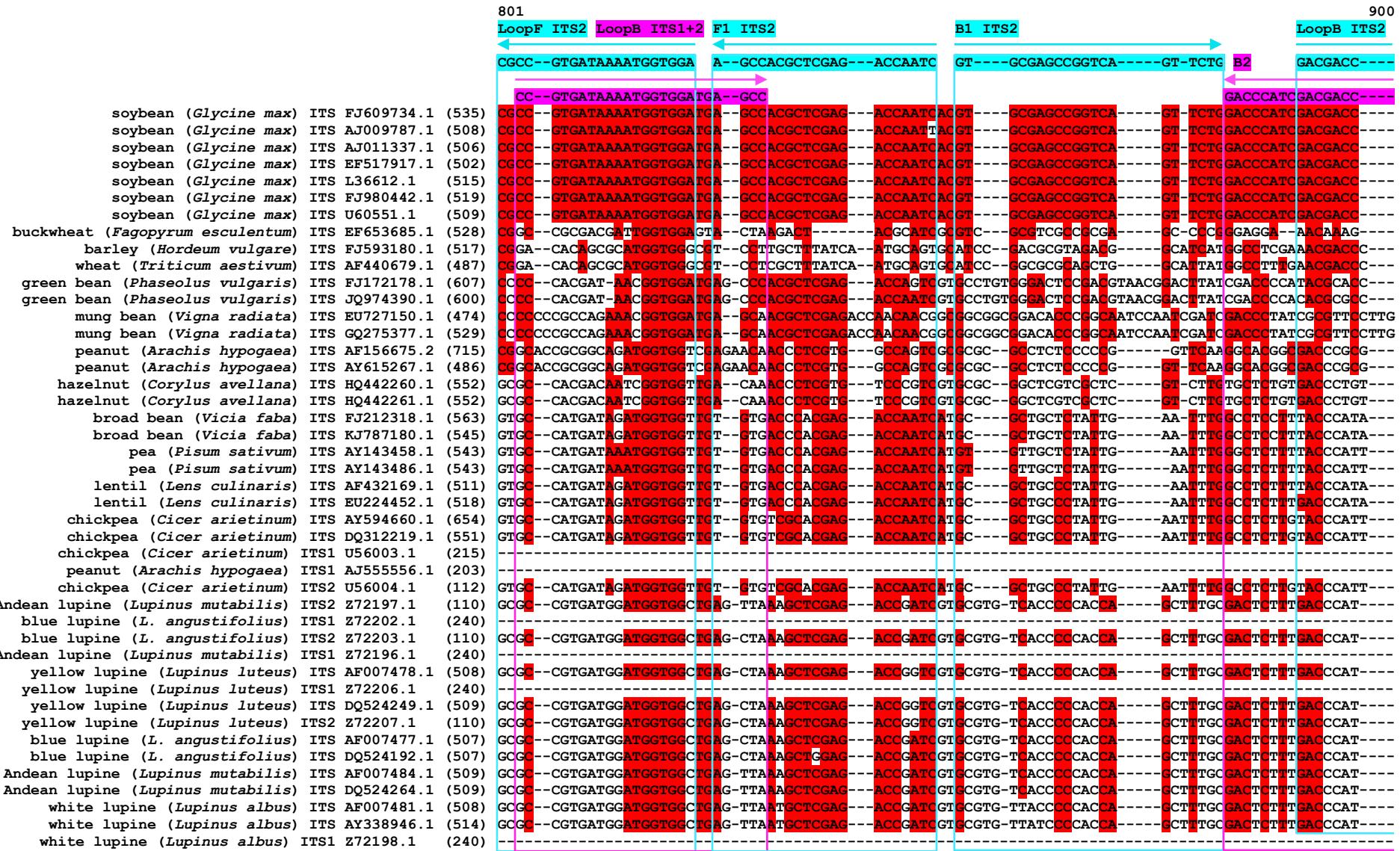
C

B1 ITS1+2

GCAAACATG

soybean (<i>Glycine max</i>)	ITS FJ609734.1	(351)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGGAAGCCATT	-AGGCCGAGGGCACGCCCTGCCTGGGTGTCACACATCGTTCCCCAA-	-CGCAAACATG
soybean (<i>Glycine max</i>)	ITS AJ009787.1	(325)	TAAACCATCGAGTCTTAAACCGAAGTTGGCCCGGAAGCCATT	-AGGCCGAGGGCACGCCCTGCCTGGGTGTCACACATCGTTCCCCAA-	-CGCAAACATG
soybean (<i>Glycine max</i>)	ITS AJ011337.1	(323)	TAAACCATCGAGTCTTAAACCGAAGTTGGCCCGGAAGCCATT	-AGGCCGAGGGCACGCCCTGCCTGGGTGTCACACATCGTTCCCCAA-	-CGCAAACATG
soybean (<i>Glycine max</i>)	ITS EF517917.1	(318)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGGAAGCCATT	-AGGCCGAGGGCACGCCCTGCCTGGGTGTCACACATCGTTCCCCAA-	-CGCAAACATG
soybean (<i>Glycine max</i>)	ITS L36612.1	(331)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGGAAGCCATT	-AGGCCGAGGGCACGCCCTGCCTGGGTGTCACACATCGTTCCCCAA-	-CGCAAACATG
soybean (<i>Glycine max</i>)	ITS FJ980442.1	(335)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGGAAGCCATT	-AGGCCGAGGGCACGCCCTGCCTGGGTGTCACACATCGTTCCCCAA-	-CGCAAACATG
buckwheat (<i>Fagopyrum esculentum</i>)	ITS EF653685.1	(340)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAGCCATT	-AGGCCGAGGGCACGCCCTGCCTGGGTGTCACACATCGTTCCCCAA-	-CGCAAACATG
barley (<i>Hordeum vulgare</i>)	ITS FJ593180.1	(337)	CGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAGCCATT	-CGGGT GAGGGCACGCCCTCTGGCGCTCACGCAAAACAGCTCCAAACCGCTC	-CTCCCCCTCC
wheat (<i>Triticum aestivum</i>)	ITS AF440679.1	(307)	CGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAGCCATT	-CGGGCAGGGCACGCCCTGCCTGGGTGTCACACATCGTTCCCCAA-	-CGCAAACATG
green bean (<i>Phaseolus vulgaris</i>)	ITS FJ172178.1	(418)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAAGCCATT	-AGGT GAGGGCACGCCCTGCCTGGGTGTCACACATCGTCAACCCCTTCTTCACACT	
green bean (<i>Phaseolus vulgaris</i>)	ITS JQ974390.1	(412)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAAGCCATT	-AGGT GAGGGCACGCCCTGCCTGGGTGTCACACATCGTCAACCCCTTCTTCACACT	
mung bean (<i>Vigna radiata</i>)	ITS EU727150.1	(305)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAAGCCATT	-AGGCCGAGGGCACGCCCTGCCTGGGTGTCACACATCGTCAACCCCTTGTCAAAGCGC	
mung bean (<i>Vigna radiata</i>)	ITS GQ275377.1	(360)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAAGCCATT	-AGGCCGAGGGCACGCCCTGCCTGGGTGTCACACATCGTCAACCCCTTGTCAAAGCGC	
peanut (<i>Arachis hypogaea</i>)	ITS AF156675.2	(525)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAAGCCATT	-AGGT GAGGGCACGCCCTGCCTGGGTGTCACACATCGTCAACAAAGGCGCCCCCCCCGCTCGCCC	
peanut (<i>Arachis hypogaea</i>)	ITS AY615267.1	(299)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAAGCCATT	-AGGT GAGGGCACGCCCTGCCTGGGTGTCACACATCGTCAACAAAGGCGCCCCCCCCGCTCGCCC	
hazelnut (<i>Corylus avellana</i>)	ITS HQ442260.1	(361)	CGAATCATCGAGTCTTGAAACCAAGTTGGCCCGAAGCCATT	-TGGT GAGGGCACGT CTGCTGGGTGTCACGATCGTCAACCCCTTGTGCC	
hazelnut (<i>Corylus avellana</i>)	ITS HQ442261.1	(361)	CGAATCATCGAGTCTTGAAACCAAGTTGGCCCGAAGCCATT	-TGGT GAGGGCACGT CTGCTGGGTGTCACGATCGTCAACCCCTTGTGCC	
broad bean (<i>Vicia faba</i>)	ITS FJ212318.1	(381)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAATGCCATT	-AGGT GAGGGCACGT CTGCTGGGTGTCACATATCGAAGCCCTCT-TGCCAATTTC	
broad bean (<i>Vicia faba</i>)	ITS KJ787180.1	(363)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAATGCCATT	-AGGT GAGGGCACGT CTGCTGGGTGTCACATATCGAAGCCCTCT-TGCCAATTTC	
pea (<i>Pisum sativum</i>)	ITS AY143458.1	(355)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAATGCCATT	-AGGT GAGGGCACGT CTGCTGGGTGTCACATATCGAAGCCCTCT-TGCCAATTTC	
pea (<i>Pisum sativum</i>)	ITS AY143486.1	(355)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAATGCCATT	-AGGT GAGGGCACGT CTGCTGGGTGTCACATATCGAAGCCCTCT-TGCCAATTTC	
lentil (<i>Lens culinaris</i>)	ITS AF432169.1	(325)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAATGCCATT	-AGGT GAGGGCACGT CTGCTGGGTGTCACATATCGAAGCCCTCT-TGCCAATTTC	
lentil (<i>Lens culinaris</i>)	ITS EU224452.1	(332)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAATGCCATT	-AGGT GAGGGCACGT CTGCTGGGTGTCACATATCGAAGCCCTCT-TGCCAATTTC	
chickpea (<i>Cicer arietinum</i>)	ITS AY594660.1	(468)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAATGCCATT	-AGGT GAGGGCACGT CTGCTGGGTGTCACATATCGAAGCCCTCT-TGCCAATTTC	
chickpea (<i>Cicer arietinum</i>)	ITS DQ312219.1	(365)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAATGCCATT	-AGGT GAGGGCACGT CTGCTGGGTGTCACATATCGAAGCCCTCT-TGCCAATTTC	
chickpea (<i>Cicer arietinum</i>)	ITS1 U56003.1	(215)			
peanut (<i>Arachis hypogaea</i>)	ITS1 AJ555556.1	(203)			
chickpea (<i>Cicer arietinum</i>)	ITS2 U56004.1	(1)			
Andean lupine (<i>Lupinus mutabilis</i>)	ITS2 Z72197.1	(1)			
blue lupine (<i>L. angustifolius</i>)	ITS1 Z72202.1	(240)			
blue lupine (<i>L. angustifolius</i>)	ITS2 Z72203.1	(1)			
Andean lupine (<i>Lupinus mutabilis</i>)	ITS1 Z72196.1	(240)			
yellow lupine (<i>Lupinus luteus</i>)	ITS AF007478.1	(325)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAAGCCATT	-AGGCCGAGGGCACGCCCTGCCTGGGTGTTGCAATCGTCAACCCCGTGCCTTGGCCA	
yellow lupine (<i>Lupinus luteus</i>)	ITS1 Z72206.1	(240)			
yellow lupine (<i>Lupinus luteus</i>)	ITS DQ524249.1	(326)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAAGCCATT	-AGGCCGAGGGCACGCCCTGCCTGGGTGTTGCAATCGTCAACCCCGTGCCTTGGCCA	
yellow lupine (<i>Lupinus luteus</i>)	ITS2 Z72207.1	(1)			
blue lupine (<i>L. angustifolius</i>)	ITS AF007477.1	(325)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAAGCCATT	-AGGCCGAGGGCACGCCCTGCCTGGGTGTTGCAATCGTCAACCCCGTGCCTTGGCCA	
blue lupine (<i>L. angustifolius</i>)	ITS DQ524192.1	(325)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAAGCCATT	-AGGCCGAGGGCACGCCCTGCCTGGGTGTTGCAATCGTCAACCCCGTGCCTTGGCCA	
Andean lupine (<i>Lupinus mutabilis</i>)	ITS AF007484.1	(326)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAAGCCATT	-AGGCCGAGGGCACGCCCTGCCTGGGTGTTGCAATCGTCAACCCCGTGCCTTGGCCA	
Andean lupine (<i>Lupinus mutabilis</i>)	ITS DQ524264.1	(326)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAAGCCATT	-AGGCCGAGGGCACGCCCTGCCTGGGTGTTGCAATCGTCAACCCCGTGCCTTGGCCA	
white lupine (<i>Lupinus albus</i>)	ITS AF007481.1	(325)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAAGCCATT	-AGGCCGAGGGCACGCCCTGCCTGGGTGTTGCAATCGTCAACCCCGTGCCTTGGCCA	
white lupine (<i>Lupinus albus</i>)	ITS AY338946.1	(331)	TGAACCATCGAGTCTTGAAACCAAGTTGGCCCGAAGCCATT	-AGGCCGAGGGCACGCCCTGCCTGGGTGTTGCAATCGTCAACCCCGTGCCTTGGCCA	
white lupine (<i>Lupinus albus</i>)	ITS1 Z72198.1	(240)			





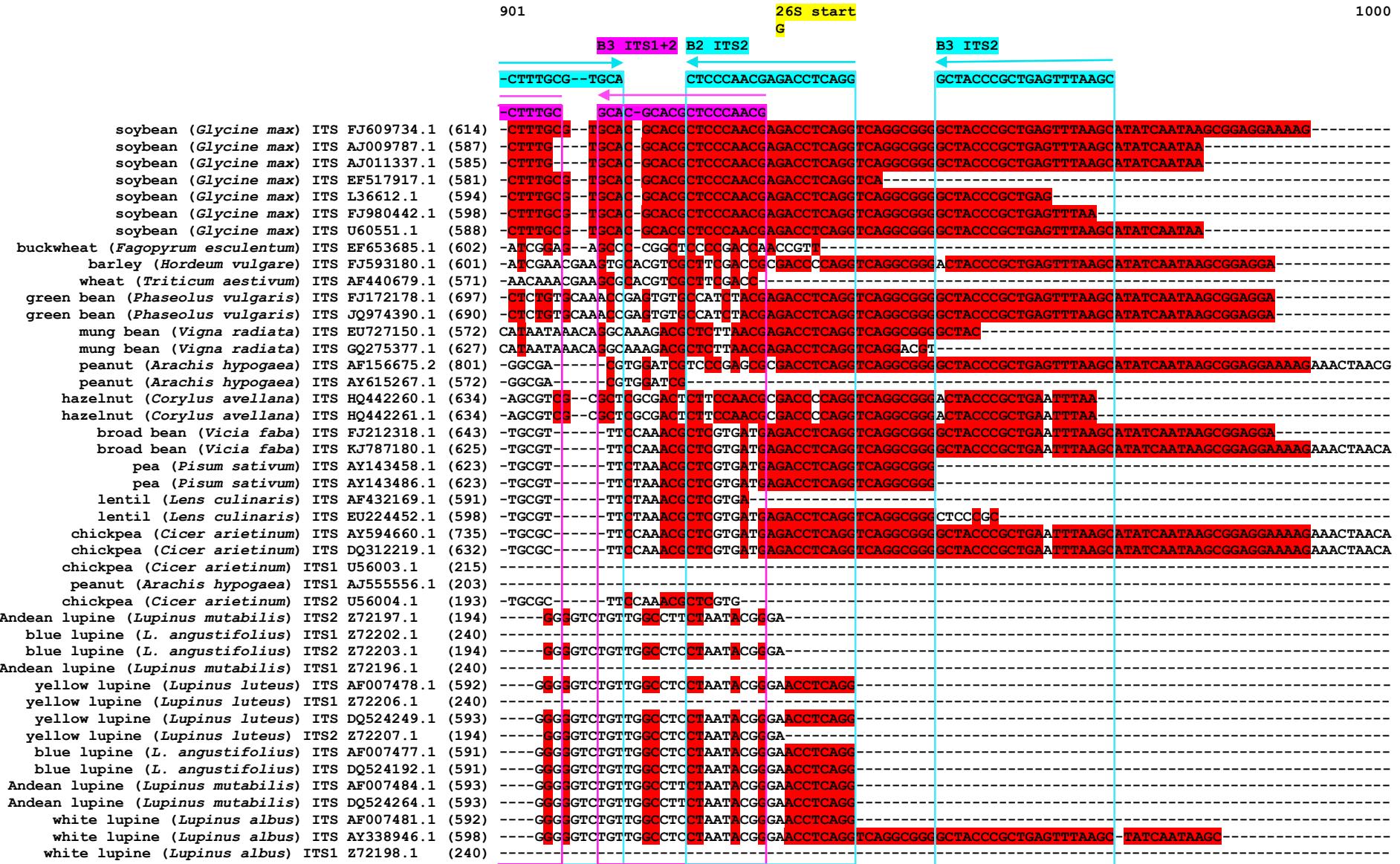


Figure S3. Sequence alignment of the mitochondrial genome of soybean (*Glycine max*; nucleotides 205217-205754), sequence of the open reading frame 160b (ORF160b; nucleotides 205230-205712). Red: homologous nucleotides in comparison with the reference sequence of soybean (*Glycine max*, GenBank acc. No. JX463295.1); yellow: start and end of the ORF160b of soybean (*Glycine max*, acc. No. JX463295.1); green: newly designed LAMP primers targeting the ORF160b of soybean (*Glycine max*, GenBank acc. No. JX463295.1)

