

Table S1. Bacterial strains and plasmids used in this study

| Strains | Description | Source or reference |
|-------------------------------|---|---------------------|
| <i>E. coli</i> | | |
| <i>DH5α</i> | <i>supE44</i> Δ <i>lacU</i> (Φ 80 <i>lacZ</i> Δ M15) <i>hsdR17 recA1 endA1 gyrA96 thi-1 relA1</i> | Laboratory stock |
| SCS110 | <i>endA dam dcm supE44</i> Δ (<i>lac-proAB</i>) (<i>F'</i> <i>traD36proAB lacIq</i> Δ M15) | Laboratory stock |
| <i>D. radiodurans</i> | | |
| R1/ GY 9613 | ATCC 13939 | Laboratory stock |
| GY 14125 | Non homogenotized Δ <i>ddrO</i> Ω <i>cat</i> | [20] |
| GY 15910 | <i>hflX::HA</i> Ω <i>kan</i> | [76] |
| GY 15950 | Δ <i>irrE</i> Ω <i>cat</i> | [21] |
| GY 16977 | <i>dr0001::v5</i> Ω <i>kan</i> | This work |
| GY 16978 | Δ <i>irrE</i> Ω <i>cat dr0001::v5</i> Ω <i>kan</i> | This work |
| GY 16979 | <i>ddrN::v5</i> Ω <i>kan</i> | This work |
| GY 16980 | Δ <i>irrE</i> Ω <i>cat ddrN::v5</i> Ω <i>kan</i> | This work |
| GY 16925 | <i>recA::HA</i> Ω <i>kan</i> Δ <i>ddrO</i> Ω <i>cat</i> / p11891 (<i>ddrO</i> ⁺ / <i>repU</i> _{TS}) | This work |
| GY 17357 | Δ <i>ddrO</i> Ω <i>cat</i> / p17237 | This work |
| GY 17370 | Δ <i>ddrO</i> Ω <i>cat</i> / p17238 | This work |
| GY 17375 | <i>ddrD::HA</i> Ω <i>kan</i> Δ <i>ddrO</i> Ω <i>cat</i> / p17238 (<i>ddrO</i> ⁺ / <i>repU</i> _{TS}) | This work |
| GY 17381 | <i>pprA::HA</i> Ω <i>kan</i> Δ <i>ddrO</i> Ω <i>cat</i> / p17238 (<i>ddrO</i> ⁺ / <i>repU</i> _{TS}) | This work |
| GY 17393 | Δ <i>ddrO</i> Ω <i>cat</i> / p17245 (<i>ddrO</i> -FLAG/ <i>repU</i> _{TS}) | This work |
| GY 17960 | Δ <i>irrE</i> Ω <i>cat dr0216::v5</i> Ω <i>kan</i> | This work |
| GY 17962 | Δ <i>irrE</i> Ω <i>cat dr0217::v5</i> Ω <i>kan</i> | This work |
| GY 17964 | Δ <i>irrE</i> Ω <i>cat dr2255::v5</i> Ω <i>kan</i> | This work |
| GY 17966 | Δ <i>irrE</i> Ω <i>cat drC0017::v5</i> Ω <i>kan</i> | This work |
| GY 17968 | Δ <i>irrE</i> Ω <i>cat drC0023::v5</i> Ω <i>kan</i> | This work |
| GY 17988 | <i>drC0017::v5</i> Ω <i>kan</i> | This work |
| GY 17994 | <i>dr0217::v5</i> Ω <i>kan</i> | This work |
| GY 17996 | <i>dr2255::v5</i> Ω <i>kan</i> | This work |
| GY 18218 | <i>ddrO::v5</i> Ω <i>kan</i> | This work |
| GY 18303 | <i>drA0166::v5</i> Ω <i>kan</i> | This work |
| GY 18305 | <i>dr2173::v5</i> Ω <i>kan</i> | This work |
| GY 18307 | <i>dr0614::v5</i> Ω <i>kan</i> | This work |
| GY 18310 | <i>dr1297::v5</i> Ω <i>kan</i> | This work |
| GY 18311 | <i>dr2410::v5</i> Ω <i>kan</i> | This work |
| GY 18313 | <i>dr0561::v5</i> Ω <i>kan</i> | This work |

| | | |
|----------|----------------------------------|-----------|
| GY 18317 | <i>ddrF::v5Ωkan</i> | This work |
| GY 18323 | <i>ΔirrEΩcat drA0166::v5Ωkan</i> | This work |
| GY 18325 | <i>ΔirrEΩcat dr2173::v5Ωkan</i> | This work |
| GY 18327 | <i>ΔirrEΩcat dr0614::v5Ωkan</i> | This work |
| GY 18330 | <i>ΔirrEΩcat dr1297::v5Ωkan</i> | This work |
| GY 18331 | <i>ΔirrEΩcat dr2410::v5Ωkan</i> | This work |
| GY 18333 | <i>ΔirrEΩcat dr0561::v5Ωkan</i> | This work |
| GY 18337 | <i>ΔirrEΩcat ddrF::v5Ωkan</i> | This work |
| GY 18341 | <i>recG::v5Ωkan</i> | This work |
| GY 18343 | <i>ligA(dr2069)::v5Ωkan</i> | This work |
| GY 18345 | <i>ΔirrEΩcat recG::v5Ωkan</i> | This work |
| GY 18347 | <i>ΔirrEΩcat ligA::v5Ωkan</i> | This work |
| GY 18364 | <i>ddrR::v5Ωkan</i> | This work |
| GY 18366 | <i>ΔirrEΩcat ddrR::v5Ωkan</i> | This work |
| GY 18368 | <i>mutL::v5Ωkan</i> | This work |
| GY 18370 | <i>ΔirrEΩcat mutL::v5Ωkan</i> | This work |
| GY 18372 | <i>irrI::v5Ωkan</i> | This work |
| GY 18374 | <i>ΔirrEΩcat irrI::v5Ωkan</i> | This work |
| GY 18376 | <i>dr1571::v5Ωkan</i> | This work |
| GY 18378 | <i>ΔirrEΩcat dr1571::v5Ωkan</i> | This work |
| GY 18380 | <i>dr1572::v5Ωkan</i> | This work |
| GY 18382 | <i>ΔirrEΩcat dr1572::v5Ωkan</i> | This work |
| GY 18384 | <i>frnE(dr0659)::v5Ωkan</i> | This work |
| GY 18386 | <i>ΔirrEΩcat frnE::v5Ωkan</i> | This work |
| GY 18388 | <i>rsr(dr1262)::v5Ωkan</i> | This work |
| GY 18392 | <i>dr1482::v5Ωkan</i> | This work |
| GY 18394 | <i>ΔirrEΩcat dr1482::v5Ωkan</i> | This work |
| GY 18505 | <i>dr0216::v5Ωkan</i> | This work |
| GY 18511 | <i>hutU::v5Ωkan</i> | This work |
| GY 18514 | <i>ΔirrEΩcat hutU::v5Ωkan</i> | This work |
| GY 18545 | <i>dr0685::v5Ωkan</i> | This work |
| GY 18547 | <i>ΔirrEΩcat dr0685::v5Ωkan</i> | This work |
| GY 18549 | <i>dr217-::v5Ωkan</i> | This work |
| GY 18551 | <i>ΔirrEΩcat dr2174::v5Ωkan</i> | This work |
| GY 18557 | <i>ΔirrEΩcat hflX::HAΩkan</i> | This work |

| Plasmids | Description | Source or reference |
|-----------------|---|----------------------------|
| pGTC101 | Source of chloramphenicol cassette in <i>D. radiodurans</i> | Laboratory stock |
| p11806 | Source of kanamycin cassette in <i>D. radiodurans</i> | Laboratory stock |
| p11554 | Shuttle vector <i>E. coli</i> / <i>D. radiodurans</i> , Spec ^R | Laboratory stock |
| p12625 | Source of hygromycin cassette in <i>D. radiodurans</i> | Laboratory stock |
| p12723 | Source of FLAG cassette in <i>D. radiodurans</i> | Laboratory stock |
| p12764 | Source of HA cassette in <i>D. radiodurans</i> | Laboratory stock |

| | | |
|--------|--|-----------|
| p11830 | Vector thermosensitive for replication in <i>D. radiodurans</i> Spec ^R , <i>prepU</i> _{TS} | [53] |
| p11891 | p13841: <i>prepU</i> _{TS} :: <i>ddrO</i> | [20] |
| p13841 | Vector thermosensitive for replication in <i>D. radiodurans</i> Spec ^R , <i>prepU</i> _{TS} , P _{Spac-term116} | [53] |
| p17235 | p11554 + multiple site of clonage of p13841 | This work |
| p17236 | p11830 + multiple site of clonage of p13841 | This work |
| p17237 | p17335 : <i>prepU</i> :: <i>ddrO</i> | This work |
| p17238 | p17336 : <i>prepU</i> _{TS} :: <i>ddrO</i> | This work |
| p17245 | p17236 : <i>prepU</i> _{TS} :: <i>ddrO</i> -FLAG | This work |
