

Membrane-bound lytic murein transglycosylase C (IGNOFKKJ_00003)

Type IV secretion system protein virB4 (IGNOFKKJ_00006)

Type IV secretion system protein virB5 (IGNOFKKJ_00007)

1 2 4 5

IMGPR_plasmid_7000000706_000013: 29-5,099 (+)

20 19 18

IMGPR_plasmid_33000007335_000048: 11,886-17,332 (-)

Lactaldehyde dehydrogenase (BEHPMBJM_00019)

22 21 20 18 17

IMGPR_plasmid_33000007967_000017: 12,420-22,241 (-)

22

IMGPR_plasmid_7000000670_000006: 15,157-22,182 (-)

ADP-L-glycero-D-manno-heptose-6-epimerase (ODIBIAID_00021)

D-beta-D-heptose 7-phosphate kinase (ODIBIAID_00022)

20

IMGPR_plasmid_7000000649_000008: 14,303-23,132 (-)

Linearmycin resistance permease protein LnrM (LPIEOFKJ_00023)

IMGPR_plasmid_33000008133_000030: 16,521-22,344 (-)

SigH (VF0296) (OHEAKNMD_00023)

24 22 21 20 19

IMGPR_plasmid_33000008415_000023: 14,013-22,077 (-)

Amino-acid carrier protein AlsT (BHCBJIPP_00001)

Lactaldehyde dehydrogenase (BHCBJIPP_00003)

Lysine--tRNA ligase (BHCBJIPP_00002)

IMGPR_plasmid_33000006477_000046: 99-10,248 (+)

Amino-acid carrier protein AlsT (IOKEGHLF_00020)

Lactaldehyde dehydrogenase (IOKEGHLF_00018)

Lysine--tRNA ligase (IOKEGHLF_00019)

IMGPR_plasmid_33000008273_000042: 12,802-22,951 (-)

Lysine--tRNA ligase (IBJBHJ_00022)

Lactaldehyde dehydrogenase (IBJBHJ_00020)

21

IMGPR_plasmid_7000000354_000033: 14,248-23,400 (-)

CRISPR-associated endonuclease Cas1 (EIPMGFB_00002)

cas2_I.I.III_IV.V.VI.6 (EIPMGFB_00001)

cas1_I.I.III_IV.V.VI.5 (EIPMGFB_00003)

COG3513 CAS-II-A,CAS-II-B,CAS-II-C; (EIPMGFB_00004)

Amino-acid carrier protein AlsT (EIPMGFB_00005)

Lysine--tRNA ligase (EIPMGFB_00006)

Lactaldehyde dehydrogenase (EIPMGFB_00007)

IMGPR_plasmid_33000008490_000075: 232-14,931 (+)

Lactaldehyde dehydrogenase (FMAFIFML_00021)

Lysine--tRNA ligase (FMAFIFML_00023)

Amino-acid carrier protein AlsT (FMAFIFML_00024)

22

IMGPR_plasmid_7000000665_000034: 13,099-24,503 (-)

Type IV secretion system protein virB4 (FMAFIFML_00016)

Type IV secretion system protein virB4 (FMAFIFML_00017)

14

5000 nt

defence (DefenseFinder) defence (PADLOC) virulence (VFDB)