

**Supplementary Table S1.** The gene mutations of HYD, GQR1 and GQR2 strains compared to the other ST-4821 strains

<b>Locus</b>	<b>Product</b>	<b>Types of mutation (Number of amino acid substitution in HYD, GQR1 and GQR2 strains)</b>
NEIS0206	oligopeptidase A	Synonymous mutation
NEIS0275	putative outer membrane solvent tolerance protein	Substitution mutation (1)
NEIS0405	hypothetical protein	Insertion mutation + Substitution mutations (3)
NEIS1031	putative cell-division protein	Substitution mutation (1)
NEIS1396	fumarate hydratase class II (EC 4.2.1.2)	Substitution mutations (5)
NEIS1553	Lipid A phosphoethanolamine transferase	Synonymous mutation
NEIS1635	transcriptional regulator	Insertion mutation + Substitution mutation (1)
NEIS1924	ClpXP protease specificity-enhancing factor	Insertion mutation
NEIS1925	pilE expression regulator/putative sspA-like protein	Substitution mutation (1)
NEIS1930	putative periplasmic protein	Substitution mutations (8)
NEIS1932	hypothetical protein	Substitution mutations (3)
NEIS1933	periplasmic/outer membrane protein	Substitution mutations (11)
NEIS2024	phosphoenolpyruvate-protein phosphotransferase	Substitution mutation (1)
NEIS2135	putative nicotinamidase	Substitution mutation (1)
NEIS0819	threonine dehydratase	Synonymous mutation
NEIS0820	putative sulphate permease ATP-binding protein	Substitution mutations (2)
NEIS0821	putative sulphate permease inner membrane protein	Substitution mutation (1)
NEIS0907	dihydrodipicolinate synthase	Substitution mutation (1)
NEIS1033	gamma-glutamyl kinase	Substitution mutations (4)
NEIS1034	2-isopropylmalate synthase	Synonymous mutation
NEIS1036	prolipoprotein diacylglycerol transferase	Substitution mutation (1)
NEIS1037	hypothetical protein	Synonymous mutations
NEIS1250	trigger factor	Substitution mutations (3)
NEIS1251	ftsK-like cell division/stress response protein	Substitution mutations (14)
NEIS1721	oxidoreductase	Synonymous mutation