

**Table S3.** Predicted KOs that are associated with multidrug or antibiotic resistance and that were found in significantly different proportions in both, faecal and salivary baseline samples between the two study sites – KI and HP.

Sample	KO ID	Function	Center	P value*
Faeces	K03297	<i>TC.SMR, emr, small multidrug resistance family protein</i>	HP	0.0001
	K03327	<i>TC.MATE, SLC47A, norM, mdtK, dinF, multidrug resistance protein, MATE family</i>	HP	0.026
	K03577	<i>acrR, smeT, TetR/AcrR family transcriptional regulator, acrAB operon repressor, M00647 Multidrug resistance, efflux pump MexAB-OprM/SmeDEF/AcrAB-TolC</i>	HP	<0.0001
	K03585	<i>acrA, mexA, adel, smeD, membrane fusion protein, ko00312 beta-Lactam resistance, M00646 Multidrug resistance, efflux pump AcrAD-TolC; M00647 Multidrug resistance, efflux pump MexAB-OprM/SmeDEF/AcrAB-TolC</i>	HP	0.007
	K03587	<i>ftsI, cell division protein FtsI (penicillin-binding protein 3), ko00312 beta-Lactam resistance, M00626 beta-Lactam resistance, penicillin-binding protein variants</i>	HP	0.023
	K03712	<i>marR, MarR family transcriptional regulator, multiple antibiotic resistance protein MarR</i>	KI	0.002
	K05515	<i>mrda, penicillin-binding protein 2, ko00312 beta-Lactam resistance, M00626 beta-Lactam resistance, penicillin-binding protein variants</i>	HP	0.0002
	K05595	<i>marC, multiple antibiotic resistance protein</i>	HP	0.013
	K08641	<i>vanX, D-alanyl-D-alanine dipeptidase [EC:3.4.13.22], ko02020 Two-component system, M00651 Vancomycin resistance, VanB type</i>	HP	0.035

	K12340	<i>tolC</i> , outer membrane channel protein, ko00312 beta-Lactam resistance, M00325 alpha-Hemolysin/cyclolysin transport system, M00646 Multidrug resistance, efflux pump AcrAD-TolC, M00647 Multidrug resistance, efflux pump MexAB-OprM/SmeDEF/AcrAB-TolC	HP	0.019
Saliva	K00012	<i>UGDH</i> , <i>ugd</i> , UDPglucose 6-dehydrogenase [EC:1.1.1.22], M00671 Polycationic antibiotics resistance operon lipopolysaccharide (LPS) modification operon	KI	<0.0001
	K00687	<i>pbp2B</i> , <i>penA</i> , penicillin-binding protein 2B [EC:2.3.2.-], ko00312 beta-Lactam resistance, M00626 beta-Lactam resistance, penicillin-binding protein variants	HP	<0.0001
	K03543	<i>emrA</i> , multidrug resistance protein A	HP	0.008
	K03577	<i>acrR</i> , <i>smeT</i> , TetR/AcrR family transcriptional regulator, <i>acrAB</i> operon repressor, M00647 Multidrug resistance, efflux pump MexAB-OprM/SmeDEF/AcrAB-TolC	HP	0.003
	K03585	<i>acrA</i> , <i>mexA</i> , <i>adel</i> , <i>smeD</i> , membrane fusion protein, ko00312 beta-Lactam resistance, M00646 Multidrug resistance, efflux pump AcrAD-TolC, M00647 Multidrug resistance, efflux pump MexAB-OprM/SmeDEF/AcrAB-TolC	KI	<0.0001
	K03587	<i>ftsI</i> , cell division protein FtsI (penicillin-binding protein 3), ko00312 beta-Lactam resistance, M00626 beta-Lactam resistance, penicillin-binding protein variants	KI	<0.0001
	K03693	<i>pbp</i> , penicillin-binding protein, ko00312 beta-Lactam resistance	HP	0.0001
	K05366	<i>mrcA</i> , penicillin-binding protein 1A [EC:2.4.1.- 3.4.-.-], ko00312 beta-Lactam resistance, M00626 beta-Lactam resistance, penicillin-binding protein variants	KI	<0.0001
	K05367	<i>pbpC</i> , penicillin-binding protein 1C [EC:2.4.1.-], ko00550 Peptidoglycan biosynthesis	HP	0.031
	K05515	<i>mrDA</i> , <i>mrDA</i> , penicillin-binding protein 2,	KI	<0.0001

		<i>ko00312 beta-Lactam resistance,</i> <i>M00626 beta-Lactam resistance, penicillin-binding protein variants</i>		
K07260		<i>vanY, D-alanyl-D-alanine carboxypeptidase [EC:3.4.16.4]</i> <i>ko00550 Peptidoglycan biosynthesis, ko02020 Two-component system</i>	HP	<0.0001
K07552		<i>bcr, MFS transporter, DHA1 family, bicyclomycin/chloramphenicol resistance protein</i>	KI	0.010
K08161		<i>mdtG, MFS transporter, DHA1 family, multidrug resistance protein</i>	KI	<0.0001
K08218		<i>ampG, MFS transporter, PAT family, beta-lactamase induction signal transducer AmpG,</i> <i>ko00312 beta-Lactam resistance</i>	KI	<0.0001
K12555		<i>pbp2A, penicillin-binding protein 2A [EC:2.4.1.129 2.3.2.-]</i> <i>ko00312 beta-Lactam resistance, M00626 beta-Lactam resistance, penicillin-binding protein variants</i>	HP	<0.0001
K12556		<i>pbp2X, penicillin-binding protein 2X [EC:2.3.2.-],</i> <i>ko00312 beta-Lactam resistance,</i> <i>M00626 beta-Lactam resistance, penicillin-binding protein variants</i>	HP	<0.0001

\* - P value after Storey FDR correction for multiple comparisons