

**Table S1. Strains, plasmids and transposon used in this study.**

<b>Strain, plasmid or transposon</b>	<b>Genotype or characteristic(s)</b>	<b>Source or reference</b>
<b>Strains</b>		
<i>E. coli</i> EPI300	F <sup>-</sup> <i>mcrAΔ(mrr-hsdRMS-mcrBC)</i> Φ80d <i>lacZΔM15 ΔlacX74 recA1 endA1</i> <i>araD139 Δ(ara, leu)7697 galU galK λ<sup>-</sup> rpsL</i> <i>nupG trfA dhfr</i> ; high-transformation efficiency of large DNA	Epicentre Biotechnologies, Madison, WI, USA
<i>E. coli</i> MKH13	MC4100Δ( <i>putPA</i> )101D( <i>proP</i> )2D( <i>proU</i> )	[22]
<i>E. coli</i> MKH13::pCI372	MKH13 containing pCI372 shuttle vector	This study
<i>E. coli</i> MKH13::pCI372- <i>stIA</i>	MKH13 containing pCI372 with <i>stIA</i> gene from human gut metagenomic library clone SMG 25	This study
<i>L. lactis</i> subspecies <i>cremoris</i> MG1363	Plasmid-free <i>Lactococcus</i> strain	[23]
<i>L. lactis</i> MG1363::pCI372	MG1363 containing pCI372 shuttle vector	This study
<i>L. lactis</i> MG1363::pCI372- <i>stIA</i>	MG1363 containing pCI372 with <i>stIA</i> gene from human gut metagenomic library clone SMG 25	This study
<b>Plasmids</b>		
pCI372	Shuttle vector between <i>E. coli</i> and <i>L. lactis</i> , Cm <sup>R</sup>	[24]
pCC1FOS	Fosmid cloning vector, Cm <sup>R</sup>	Epicentre Biotechnologies, Madison, WI, USA
<b>Transposon</b>		
EZ-Tn5 < <i>oriV</i> / KAN-2>	Hyperactive Tn5 transposon, Kan <sup>R</sup> , inducible high copy origin of replication – <i>oriV</i>	Epicentre Biotechnologies, Madison, WI, USA

Cm<sup>R</sup> = chloramphenicol resistance; Kan<sup>R</sup> = kanamycin resistance.