

## Supplementary material:

**Table 1:** The positions of guanosine residues close to the anticodon in tRNAs

S.No	Organisms	tRNA types and occurrence of amino acid specific tRNAs anticodon and its GpG, CpG, ApG & UpG sequences next to the anticodon at different positions 36, 37, 38, 39 and 40				
		G36	G37	G38	G39	G40
1	<i>Anaplasma phagocytophilum</i> HZ	NA	tRNA <sup>His</sup> GTGG tRNA <sup>Val</sup> GACG	tRNA <sup>Arg</sup> ACGG tRNA <sup>Leu</sup> CAGG, GAGG,TAGG tRNA <sup>Pro</sup> TGGG	tRNA <sup>Arg</sup> CCGG tRNA <sup>Pro</sup> GGGG	NA
2	<i>Aquifex aeolicus</i>	NA	tRNA <sup>Pro</sup> CGGG, GGGG, TGGG tRNA <sup>His</sup> GTGG	tRNA <sup>Arg</sup> ACGG, GGGG tRNA <sup>Leu</sup> CAGG, GAGG	NA	NA
3	<i>Bartonella henselae</i> Houston-1	tRNA <sup>Gln</sup> TTGG	NA	tRNA <sup>His</sup> GTGG tRNA <sup>Leu</sup> CAGG, GAGG tRNA <sup>Pro</sup> TGGG, GGGG	NA	NA
4	<i>Escherichia coli</i> K12	NA	NA	tRNA <sup>Arg</sup> CCGG tRNA <sup>Leu</sup> CAGG, TAGG, GAGG tRNA <sup>Pro</sup> CGGG, TAGG, GGGG	NA	NA
5	<i>Haemophilus influenzae</i>	NA	NA	tRNA <sup>Arg</sup> CCGG tRNA <sup>Leu</sup> GAGG, TAGG tRNA <sup>Pro</sup> TGGG	NA	NA
6	<i>Mycobacterium tuberculosis</i> H37Rv	NA	tRNA <sup>Arg</sup> CCGG tRNA <sup>Gln</sup> CTGG, TTGG tRNA <sup>Leu</sup> CAGG, GAGG	tRNA <sup>Leu</sup> TAGG tRNA <sup>Pro</sup> CGGG, TAGG, GGGG	NA	NA
7	<i>Staphylococcus aureus</i> MRSA252	NA	tRNA <sup>Arg</sup> CCGG tRNA <sup>His</sup> GTGG tRNA <sup>Leu</sup> GAGG tRNA <sup>Phe</sup> GAAG	tRNA <sup>Arg</sup> ACGG tRNA <sup>Leu</sup> TAGG tRNA <sup>Pro</sup> TGGG	NA	NA
8	<i>Streptococcus pneumoniae</i> D39	NA	tRNA <sup>Arg</sup> CCGG tRNA <sup>His</sup> GTGG tRNA <sup>Phe</sup> GAAG	tRNA <sup>Leu</sup> AAGG, TAGG tRNA <sup>Pro</sup> TGGG	NA	NA
9	<i>Methanococcus jannaschii</i>	tRNA <sup>Cys</sup> GCAG	tRNA <sup>His</sup> GTGG tRNA <sup>Arg</sup> TCGG	tRNA <sup>Gln</sup> TTGG tRNA <sup>Try</sup> GTAG	tRNA <sup>Arg</sup> TCGG tRNA <sup>Pro</sup> GGGG tRNA <sup>Ser</sup> GGAG	tRNA <sup>Pro</sup> TGGG tRNA <sup>Glu</sup> TTCG tRNA <sup>Ser</sup> TGAG tRNA <sup>Trp</sup> CCAG tRNA <sup>Leu</sup> GAGG, TAGG, TAAG
10	<i>Homo sapiens</i> hg19	tRNA <sup>Arg</sup> CCTG tRNA <sup>Cys</sup> GCAG tRNA <sup>Pro</sup> AGGG, CGGG, TGGG tRNA <sup>Trp</sup> CCAG tRNA <sup>Tyr</sup> GTAG tRNA <sup>Ser</sup> AGAG	tRNA <sup>Arg</sup> ACGG tRNA <sup>Cys</sup> GCAG tRNA <sup>His</sup> GTGG tRNA <sup>Leu</sup> TAAG tRNA <sup>Phe</sup> GAAG tRNA <sup>Gln</sup> TTGG tRNA <sup>Tyr</sup> ATAG, GTAG	tRNA <sup>Leu</sup> AAGG, CAAG, TAGG, AAGG tRNA <sup>Gln</sup> CTGG tRNA <sup>Ser</sup> AGAG	tRNA <sup>Pro</sup> GGGG tRNA <sup>Gln</sup> TTGG tRNA <sup>Trp</sup> CCAG	NA