## a) Biology

Ser

Ser

His

TCC CA- --G

GIn

TCC CAT

Lys

AAG

Gly

Glv

Arg b) PRANK (codon) and MACSE Ser His Lys Gly Arg Ser Ala Asp AAG GGG CGG **TCG** TCC CAT GAC **GCC** CAG GGG CGG TCC CCG TCC GAC GCC ACG Ser GIn Gly Arg Ser Pro Asp Ala Thr c) MAFFT and Clustal $\Omega$ 

Arg

GGG CGG T--

GGG CGG TCC

Ser

Ser

-CG

CCG

Pro

Ala

GCC

GCC

Ala

Thr

Asp

GAC

GAC

Asp

Ser His Lys Gly Arg Ser Asp Ala GGG **TCG** TCC CAT AAG CGG GAC GCC CGG TCC CCG GAC TCC CAG GGG GCC ACG Ser Gln Gly Arg Ser Pro Asp Ala Thr

d) COATi Ser His Lys Gly Arg Ser Asp Ala TCC CAT AAG GGG CGG T-- -CG GAC **GCC** CGG TCC CCG TCC CA---G GGG GAC GCC Ser Gln Gly Arg Ser Pro Asp Ala Thr