

**Supplementary material S5.** The three translation frames (5' - 3') of the novel mongoose PBV-like sequence (designated as M17A) using the standard genetic code. The translation frames were generated by the Translate tool-ExPASy software (<https://web.expasy.org/translate/>, accessed 16<sup>th</sup> October 2019). The putative peptides and corresponding coding sequences is highlighted with light pink and yellow, respectively.

### 5'3' Frame 1

```

gta aat ttt caa aat ttt cta ttt cta tga aat ttt aaa ttg cgt gat tta ctg aaa acg
V   N   F   Q   N   F   L   F   L   -   N   F   K   L   R   D   L   L   K   T
ctt aca gtg gca gat aac tgt ata cat ttc agg agg tta gtt tct tgt gat taa gaa gct
L   T   V   A   D   N   C   I   H   F   R   R   L   V   S   C   D   -   E   A
aaa ctt gaa gga cta ttt cat cct tcc caa tca ggg ttt aca gtc tta ttt aca caa gac
K   L   E   G   L   F   H   P   S   Q   S   G   F   T   V   L   F   T   Q   D
gga ggt agg tag cga cct tga cat tcg tac tcc gtt ttg gga cga gaa gcc tag atc atc
G   G   R   -   R   P   -   H   S   Y   S   V   L   G   R   E   A   -   I   I
gat cat ggc gat gtg aca agc tgt ggt tga ctc ttc aaa tct gga agc taa gtt gcc agg
D   H   G   D   V   T   S   C   G   -   L   F   K   S   G   S   -   V   A   R
ttt gta taa att tga gat gga cat gaa atc aaa agt cgg tcc act ctc cgt cca aga acc
F   V   -   I   -   D   G   H   E   I   K   S   R   S   T   L   R   P   R   T
ctt act aag acg gat tcc cga cgt aat gga cta tta taa cga tcc gaa agg tca gga agt
L   T   K   T   D   S   R   R   N   G   L   L   -   R   S   E   R   S   G   S
tag tcc gcg agc aat cgc atg cgt taa gga aga att taa agc att aag ggg tct cag gtt
-   S   A   S   N   R   M   R   -   G   R   I   -   S   I   K   G   S   Q   V
gcg tga tgc tga tgc aac tgt cgc tga gat gcg ccg caa tac taa ttc ggg cgc tcc tta
A   -   C   -   C   N   C   R   -   D   A   P   Q   Y   -   F   G   R   S   L
ttt cac tcg tcg gtc acg tgt cga gtc gga atc cct aga att ggc taa gac tag atc gtt
F   H   S   S   V   T   C   R   V   G   I   P   R   I   G   -   D   -   I   V
agc ata tcc agc agt ttt agg gtg gag agg aca aga agg tgg tat tga tac tga taa cgt
S   I   S   S   S   F   R   V   E   R   T   R   R   W   Y   -   Y   -   -   R
gaa aca acg cgt tgt ttg aat gtt tcc ttt cca aac gaa cat cgc gga att aca gtt cta
E   T   T   R   C   L   N   V   S   F   P   N   E   H   R   G   I   T   V   L
cca gcc cat gat ccg ggc gat tca agc aca taa act cat ccc tgc cta ttt gga tca tac
P   A   H   D   P   G   D   S   S   T   -   T   H   P   C   L   F   G   S   Y
agc agt gga tgc tcg gat aac gaa tct att tga cac caa acc tac ggg tga tct tgt agt
S   S   G   C   S   D   N   E   S   I   -   H   Q   T   Y   G   -   S   C   S
tga aac cga ttt cac caa gtt cga cca gtc gtt ctg aac acc att aca aca tgt agc gcg
-   N   R   F   H   Q   V   R   P   V   V   L   N   T   I   T   T   C   S   A
tgc tgt gta cgc cga ctg agg tcc aca act tga taa gtg aat tag aga agt att ccc ggt
C   C   V   R   R   L   R   S   T   T   -   -   V   N   -   R   S   I   P   G
aaa ata taa tat tcc cat ggt att atc gaa taa ttt gat ttc cac cgg acc aca cgg cat
K   I   -   Y   S   H   G   I   I   E   -   F   D   F   H   R   T   T   R   H
ggc gtc ggg atc agg ggg tac taa tgc tga tga gtc gat tgc aca cag ggc gtt aca gca
G   V   G   I   R   G   Y   -   C   -   -   V   D   C   T   Q   G   V   T   A
tga agc tgc ttt agc gtc ggg tca gac tct cca ccc atc ctc aat ggc ata tgg gga cga
-   S   C   F   S   V   G   S   D   S   P   P   I   L   N   G   I   W   G   R
tgg tat ctt aac gtt caa ggg tat cac cgt tga taa agt ggt agc aca ata tac taa gca
W   Y   L   N   V   Q   G   Y   H   R   -   -   S   G   S   T   I   Y   -   A
tgg agt gac cat gaa cga gag taa gca ggg agc aag cac tac cga gtg cgt att cct acg
W   S   D   H   E   R   E   -   A   G   S   K   H   Y   R   V   R   I   P   T
ccg ttg aca ctc tat gtc cta tcg taa gaa cgg gat tat ggt agg tgt tta ttc gac gtt
P   L   T   L   Y   V   L   S   -   E   R   D   Y   G   R   C   L   F   D   V
ccg ggc ttt agg acg ttt gat ggg tca aga acg gta cta tga ccc taa aca atg agg acc
P   G   F   R   T   F   D   G   S   R   T   V   L   -   P   -   T   M   R   T
aga gat ggt tat aat gag ggc gtt gtc gat act aga aaa ttg caa cca aca tcc tct ctt
R   D   G   Y   N   E   G   V   V   D   T   R   K   L   Q   P   T   S   S   L
cga aga gtt tat tga att tgt cat caa agg gga taa gta cgg att ggg tac taa act ccc
R   R   V   Y   -   I   C   H   Q   R   G   -   V   R   I   G   Y   -   T   P
agg ctt ttt gga taa ttt aca ggc aat gta cgc caa agc cag aga tgt gat gcc cga tta

```

## Supplementary material S5

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| R   | L   | F   | G   | -   | F   | T   | G   | N   | V   | R   | Q   | S   | Q   | R   | C   | D   | A   | R   | L   |
| tgg | tgg | ctt | cgt | taa | tga | taa | tat | gaa | gcg | caa | agg | aat | cct | ttc | atg | gaa | ggt | agt | cca |
| W   | W   | L   | R   | -   | -   | -   | Y   | E   | A   | Q   | R   | N   | P   | F   | M   | E   | G   | S   | P   |
| ata | cct | aat | taa | tcg | gta | agc | gag | atg | gtg | cag | taa | acc | att |     |     |     |     |     |     |
| I   | P   | N   | -   | S   | V   | S   | E   | M   | V   | Q   | -   | T   | I   |     |     |     |     |     |     |

### 5'3' Frame 2

|      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| gtaa | att | ttc | aaa | att | ttc | tat | ttc | tat | gaa | att | tta | aat | tgc | gtg | att | tac | tga | aaa | cgc |
| -    | I   | F   | K   | I   | F   | Y   | F   | Y   | E   | I   | L   | N   | C   | V   | I   | Y   | -   | K   | R   |
| tta  | cag | tgg | cag | ata | act | gta | tac | att | tca | gga | ggt | tag | ttt | ctt | gtg | att | aag | aag | cta |
| L    | Q   | W   | Q   | I   | T   | V   | Y   | I   | S   | G   | G   | -   | F   | L   | V   | I   | K   | K   | L   |
| aac  | ttg | aag | gac | tat | ttc | atc | ctt | ccc | aat | cag | ggt | tta | cag | tct | tat | tta | cac | aag | acg |
| N    | L   | K   | D   | Y   | F   | I   | L   | P   | N   | Q   | G   | L   | Q   | S   | Y   | L   | H   | K   | T   |
| gag  | gta | ggt | agc | gac | ctt | gac | att | cgt | act | ccg | ttt | tgg | gac | gag | aag | cct | aga | tca | tcg |
| E    | V   | G   | S   | D   | L   | D   | I   | R   | T   | P   | F   | W   | D   | E   | K   | P   | R   | S   | S   |
| atc  | atg | gcg | atg | tga | caa | gct | gtg | ggt | gac | tct | tca | aat | ctg | gaa | gct | aag | ttg | cca | ggt |
| I    | M   | A   | M   | -   | Q   | A   | V   | V   | D   | S   | S   | N   | L   | E   | A   | K   | L   | P   | G   |
| ttg  | tat | aaa | ttt | gag | atg | gac | atg | aaa | tca | aaa | gtc | ggt | cca | ctc | tcc | gtc | caa | gaa | ccc |
| L    | Y   | K   | F   | E   | M   | D   | M   | K   | S   | K   | V   | G   | P   | L   | S   | V   | Q   | E   | P   |
| tta  | cta | aga | cgg | att | ccc | gac | gta | atg | gac | tat | tat | aac | gat | ccg | aaa | ggt | cag | gaa | ggt |
| L    | L   | R   | R   | I   | P   | D   | V   | M   | D   | Y   | Y   | N   | D   | P   | K   | G   | Q   | E   | V   |
| agt  | ccg | cga | gca | atc | gca | tgc | ggt | aag | gaa | gaa | ttt | aaa | gca | tta | agg | ggt | ctc | agg | ttg |
| S    | P   | R   | A   | I   | A   | C   | V   | K   | E   | E   | F   | K   | A   | L   | R   | G   | L   | R   | L   |
| cgt  | gat | gct | gat | gca | act | gtc | gct | gag | atg | cgc | cgc | aat | act | aat | tcg | ggc | gct | cct | tat |
| R    | D   | A   | D   | A   | T   | V   | A   | E   | M   | R   | R   | N   | T   | N   | S   | G   | A   | P   | Y   |
| ttc  | act | cgt | cgg | tca | cgt | gtc | gag | tcg | gaa | tcc | cta | gaa | ttg | gct | aag | act | aga | tcg | tta |
| F    | T   | R   | R   | S   | R   | V   | E   | S   | E   | S   | L   | E   | L   | A   | K   | T   | R   | S   | L   |
| gca  | tat | cca | gca | ggt | tta | ggg | tgg | aga | gga | caa | gaa | ggt | ggt | att | gat | act | gat | aac | gtg |
| A    | Y   | P   | A   | V   | L   | G   | W   | R   | G   | Q   | E   | G   | G   | I   | D   | T   | D   | N   | V   |
| aaa  | caa | cgc | ggt | ggt | tga | atg | ttt | cct | ttc | caa | acg | aac | atc | gcg | gaa | tta | cag | ttc | tac |
| K    | Q   | R   | V   | V   | -   | M   | F   | P   | F   | Q   | T   | N   | I   | A   | E   | L   | Q   | F   | Y   |
| cag  | ccc | atg | atc | cgg | gcg | att | caa | gca | cat | aaa | ctc | atc | cct | gcc | tat | ttg | gat | cat | aca |
| Q    | P   | M   | I   | R   | A   | I   | Q   | A   | H   | K   | L   | I   | P   | A   | Y   | L   | D   | H   | T   |
| gca  | gtg | gat | gct | cgg | ata | acg | aat | cta | ttt | gac | acc | aaa | cct | acg | ggt | gat | ctt | gta | ggt |
| A    | V   | D   | A   | R   | I   | T   | N   | L   | F   | D   | T   | K   | P   | T   | G   | D   | L   | V   | V   |
| gaa  | acc | gat | ttc | acc | aag | ttc | gac | cag | tcg | ttc | tga | aca | cca | tta | caa | cat | gta | gcg | cgt |
| E    | T   | D   | F   | T   | K   | F   | D   | Q   | S   | F   | -   | T   | P   | L   | Q   | H   | V   | A   | R   |
| gct  | gtg | tac | gcc | gac | tga | ggt | cca | caa | ctt | gat | aag | tga | att | aga | gaa | gta | ttc | ccg | gta |
| A    | V   | Y   | A   | D   | -   | G   | P   | Q   | L   | D   | K   | -   | I   | R   | E   | V   | F   | P   | V   |
| aaa  | tat | aat | att | ccc | atg | gta | tta | tcg | aat | aat | ttg | att | tcc | acc | gga | cca | cac | ggc | atg |
| K    | Y   | N   | I   | P   | M   | V   | L   | S   | N   | N   | L   | I   | S   | T   | G   | P   | H   | G   | M   |
| gcg  | tcg | gga | tca | ggg | ggt | act | aat | gct | gat | gag | tcg | att | gca | cac | agg | gcg | tta | cag | cat |
| A    | S   | G   | S   | G   | G   | T   | N   | A   | D   | E   | S   | I   | A   | H   | R   | A   | L   | Q   | H   |
| gaa  | gct | gct | tta | gcg | tcg | ggt | cag | act | ctc | cac | cca | tcc | tca | atg | gca | tat | ggg | gac | gat |
| E    | A   | A   | L   | A   | S   | G   | Q   | T   | L   | H   | P   | S   | S   | M   | A   | Y   | G   | D   | D   |
| ggt  | atc | tta | acg | ttc | aag | ggt | atc | acc | ggt | gat | aaa | gtg | gta | gca | caa | tat | act | aag | cat |
| G    | I   | L   | T   | F   | K   | G   | I   | T   | V   | D   | K   | V   | V   | A   | Q   | Y   | T   | K   | H   |
| gga  | gtg | acc | atg | aac | gag | agt | aag | cag | gga | gca | agc | act | acc | gag | tgc | gta | ttc | cta | cgc |
| G    | V   | T   | M   | N   | E   | S   | K   | Q   | G   | A   | S   | T   | T   | E   | C   | V   | F   | L   | R   |
| cgt  | tga | cac | tct | atg | tcc | tat | cgt | aag | aac | ggg | att | atg | gta | ggt | ggt | tat | tcg | acg | ttc |
| R    | -   | H   | S   | M   | S   | Y   | R   | K   | N   | G   | I   | M   | V   | G   | V   | Y   | S   | T   | F   |
| cgg  | gct | tta | gga | cgt | ttg | atg | ggt | caa | gaa | cgg | tac | tat | gac | cct | aaa | caa | tga | gga | cca |
| R    | A   | L   | G   | R   | L   | M   | G   | Q   | E   | R   | Y   | Y   | D   | P   | K   | Q   | -   | G   | P   |
| gag  | atg | ggt | ata | atg | agg | gcg | ttg | tcg | ata | cta | gaa | aat | tgc | aac | caa | cat | cct | ctc | ttc |
| E    | M   | V   | I   | M   | R   | A   | L   | S   | I   | L   | E   | N   | C   | N   | Q   | H   | P   | L   | F   |
| gaa  | gag | ttt | att | gaa | ttt | gtc | atc | aaa | ggg | gat | aag | tac | gga | ttg | ggt | act | aaa | ctc | cca |
| E    | E   | F   | I   | E   | F   | V   | I   | K   | G   | D   | K   | Y   | G   | L   | G   | T   | K   | L   | P   |
| ggc  | ttt | ttg | gat | aat | tta | cag | gca | atg | tac | gcc | aaa | gcc | aga | gat | gtg | atg | ccc | gat | tat |

## Supplementary material S5

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| G   | F   | L   | D   | N   | L   | Q   | A   | M   | Y   | A   | K   | A   | R   | D   | V   | M   | P   | D   | Y   |
| ggt | ggc | ttc | ggt | aat | gat | aat | atg | aag | cgc | aaa | gga | atc | ctt | tca | tgg | aag | gta | gtc | caa |
| G   | G   | F   | V   | N   | D   | N   | M   | K   | R   | K   | G   | I   | L   | S   | W   | K   | V   | V   | Q   |
| tac | cta | att | aat | cgg | taa | gcg | aga | tgg | tgc | agt | aaa | cca |     |     |     |     |     |     |     |
| Y   | L   | I   | N   | R   | -   | A   | R   | W   | C   | S   | K   | P   |     |     |     |     |     |     |     |

### 5'3' Frame 3

|       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| gtaaa | ttt | tca | aaa | ttt | tct | att | tct | atg | aaa | ttt | taa | att | gcg | tga | ttt | act | gaa | aac | gct |
| K     | F   | S   | K   | F   | S   | I   | S   | M   | K   | F   | -   | I   | A   | -   | F   | T   | E   | N   | A   |
| tac   | agt | ggc | aga | taa | ctg | tat | aca | ttt | cag | gag | ggt | agt | ttc | ttg | tga | tta | aga | agc | taa |
| Y     | S   | G   | R   | -   | L   | Y   | T   | F   | Q   | E   | V   | S   | F   | L   | -   | L   | R   | S   | -   |
| act   | tga | agg | act | att | tca | tcc | ttc | cca | atc | agg | ggt | tac | agt | ctt | att | tac | aca | aga | cgg |
| T     | -   | R   | T   | I   | S   | S   | F   | P   | I   | R   | V   | Y   | S   | L   | I   | Y   | T   | R   | R   |
| agg   | tag | gta | gcg | acc | ttg | aca | ttc | gta | ctc | cgt | ttt | ggg | acg | aga | agc | cta | gat | cat | cga |
| R     | -   | V   | A   | T   | L   | T   | F   | V   | L   | R   | F   | G   | T   | R   | S   | L   | D   | H   | R   |
| tca   | tgg | cga | tgt | gac | aag | ctg | tgg | ttg | act | ctt | caa | atc | tgg | aag | cta | agt | tgc | cag | ggt |
| S     | W   | R   | C   | D   | K   | L   | W   | L   | T   | L   | Q   | I   | W   | K   | L   | S   | C   | Q   | V   |
| tgt   | ata | aat | ttg | aga | tgg | aca | tga | aat | caa | aag | tcg | gtc | cac | tct | ccg | tcc | aag | aac | cct |
| C     | I   | N   | L   | R   | W   | T   | -   | N   | Q   | K   | S   | V   | H   | S   | P   | S   | K   | N   | P   |
| tac   | taa | gac | gga | ttc | ccg | acg | taa | tgg | act | att | ata | acg | atc | cga | aag | gtc | agg | aag | tta |
| Y     | -   | D   | G   | F   | P   | T   | -   | W   | T   | I   | I   | T   | I   | R   | K   | V   | R   | K   | L   |
| gtc   | cgc | gag | caa | tcg | cat | gcg | tta | agg | aag | aat | tta | aag | cat | taa | ggg | gtc | tca | ggt | tgc |
| V     | R   | E   | Q   | S   | H   | A   | L   | R   | K   | N   | L   | K   | H   | -   | G   | V   | S   | G   | C   |
| gtg   | atg | ctg | atg | caa | ctg | tcg | ctg | aga | tgc | gcc | gca | ata | cta | att | cgg | gcg | ctc | ctt | att |
| V     | M   | L   | M   | Q   | L   | S   | L   | R   | C   | A   | A   | I   | L   | I   | R   | A   | L   | L   | I   |
| tca   | ctc | gtc | ggt | cac | gtg | tcg | agt | cgg | aat | ccc | tag | aat | tgg | cta | aga | cta | gat | cgt | tag |
| S     | L   | V   | G   | H   | V   | S   | S   | R   | N   | P   | -   | N   | W   | L   | R   | L   | D   | R   | -   |
| cat   | atc | cag | cag | ttt | tag | ggt | gga | gag | gac | aag | aag | gtg | gta | ttg | ata | ctg | ata | acg | tga |
| H     | I   | Q   | Q   | F   | -   | G   | G   | E   | D   | K   | K   | V   | V   | L   | I   | L   | I   | T   | -   |
| aac   | aac | gcg | ttg | ttt | gaa | tgt | ttc | ctt | tcc | aaa | cga | aca | tcg | cgg | aat | tac | agt | tct | acc |
| N     | N   | A   | L   | F   | E   | C   | F   | L   | S   | K   | R   | T   | S   | R   | N   | Y   | S   | S   | T   |
| agc   | cca | tga | tcc | ggg | cga | ttc | aag | cac | ata | aac | tca | tcc | ctg | cct | att | tgg | atc | ata | cag |
| S     | P   | -   | S   | G   | R   | F   | K   | H   | I   | N   | S   | S   | L   | P   | I   | W   | I   | I   | Q   |
| cag   | tgg | atg | ctc | gga | taa | cga | atc | tat | ttg | aca | cca | aac | cta | cgg | gtg | atc | ttg | tag | ttg |
| Q     | W   | M   | L   | G   | -   | R   | I   | Y   | L   | T   | P   | N   | L   | R   | V   | I   | L   | -   | L   |
| aaa   | ccg | att | tca | cca | agt | tcg | acc | agt | cgt | tct | gaa | cac | cat | tac | aac | atg | tag | cgc | gtg |
| K     | P   | I   | S   | P   | S   | S   | T   | S   | R   | S   | E   | H   | H   | Y   | N   | M   | -   | R   | V   |
| ctg   | tgt | acg | ccg | act | gag | gtc | cac | aac | ttg | ata | agt | gaa | tta | gag | aag | tat | tcc | cgg | taa |
| L     | C   | T   | P   | T   | E   | V   | H   | N   | L   | I   | S   | E   | L   | E   | K   | Y   | S   | R   | -   |
| aat   | ata | ata | ttc | cca | tgg | tat | tat | cga | ata | att | tga | ttt | cca | ccg | gac | cac | acg | gca | tgg |
| N     | I   | I   | F   | P   | W   | Y   | Y   | R   | I   | I   | -   | F   | P   | P   | D   | H   | T   | A   | W   |
| cgt   | cgg | gat | cag | ggg | gta | cta | atg | ctg | atg | agt | cga | ttg | cac | aca | ggg | cgt | tac | agc | atg |
| R     | R   | D   | Q   | G   | V   | L   | M   | L   | M   | S   | R   | L   | H   | T   | G   | R   | Y   | S   | M   |
| aag   | ctg | ctt | tag | cgt | cgg | gtc | aga | ctc | tcc | acc | cat | cct | caa | tgg | cat | atg | ggg | acg | atg |
| K     | L   | L   | -   | R   | R   | V   | R   | L   | S   | T   | H   | P   | Q   | W   | H   | M   | G   | T   | M   |
| gta   | tct | taa | cgt | tca | agg | gta | tca | ccg | ttg | ata | aag | tgg | tag | cac | aat | ata | cta | agc | atg |
| V     | S   | -   | R   | S   | R   | V   | S   | P   | L   | I   | K   | W   | -   | H   | N   | I   | L   | S   | M   |
| gag   | tga | cca | tga | acg | aga | gta | agc | agg | gag | caa | gca | cta | ccg | agt | gcg | tat | tcc | tac | gcc |
| E     | -   | P   | -   | T   | R   | V   | S   | R   | E   | Q   | A   | L   | P   | S   | A   | Y   | S   | Y   | A   |
| ggt   | gac | act | cta | tgt | cct | atc | gta | aga | acg | gga | tta | tgg | tag | gtg | ttt | att | cga | cgt | tcc |
| V     | D   | T   | L   | C   | P   | I   | V   | R   | T   | G   | L   | W   | -   | V   | F   | I   | R   | R   | S   |
| ggg   | ctt | tag | gac | ggt | tga | tgg | gtc | aag | aac | ggt | act | atg | acc | cta | aac | aat | gag | gac | cag |
| G     | L   | -   | D   | V   | -   | W   | V   | K   | N   | G   | T   | M   | T   | L   | N   | N   | E   | D   | Q   |
| aga   | tgg | tta | taa | tga | ggg | cgt | tgt | cga | tac | tag | aaa | att | gca | acc | aac | atc | ctc | tct | tcg |
| R     | W   | L   | -   | -   | G   | R   | C   | R   | Y   | -   | K   | I   | A   | T   | N   | I   | L   | S   | S   |

*Supplementary material S5*

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| aag | agt | tta | ttg | aat | ttg | tca | tca | aag | ggg | ata | agt | acg | gat | tgg | gta | cta | aac | tcc | cag |
| K   | S   | L   | L   | N   | L   | S   | S   | K   | G   | I   | S   | T   | D   | W   | V   | L   | N   | S   | Q   |
| gct | ttt | tgg | ata | att | tac | agg | caa | tgt | acg | cca | aag | cca | gag | atg | tga | tgc | ccg | att | atg |
| A   | F   | W   | I   | I   | Y   | R   | Q   | C   | T   | P   | K   | P   | E   | M   | -   | C   | P   | I   | M   |
| gtg | gct | tcg | tta | atg | ata | ata | tga | agc | gca | aag | gaa | tcc | ttt | cat | gga | agg | tag | tcc | aat |
| V   | A   | S   | L   | M   | I   | I   | -   | S   | A   | K   | E   | S   | F   | H   | G   | R   | -   | S   | N   |
| acc | taa | tta | atc | ggt | aag | cga | gat | ggt | gca | gta | aac | cat |     |     |     |     |     |     |     |
| T   | -   | L   | I   | G   | K   | R   | D   | G   | A   | V   | N   | H   |     |     |     |     |     |     |     |