

Translation of O145 CB12513

Translation of O145 RM12581

Translation of O28 CB9651

Translation of O152 SE11

Translation of O132 N87

Translation of O26:H46 5306-56

| | | | | | | | | | |
|---|---|----|---|----|---|----|---|----|---|
| | | 10 | | 20 | | 30 | | 40 | |
| M | A | Q | V | I | N | T | N | S | L |
| M | A | Q | V | I | N | T | N | S | L |
| M | A | Q | V | I | N | T | N | S | L |
| M | A | Q | V | I | N | T | N | S | L |
| M | A | Q | V | I | N | T | N | S | L |
| M | A | Q | V | I | N | T | N | S | L |
| | | | | | | | | | |
| M | A | Q | V | I | N | T | N | S | L |
| M | A | Q | V | I | N | T | N | S | L |

Translation of O145 CB12513

Translation of O145 RM12581

Translation of O28 CB9651

Translation of O152 SE11

Translation of O132 N87

Translation of O26:H46 5306-56

| | | | | | | | | | | | |
|---|---|----|---|----|---|----|---|----|---|----|---|
| | | 50 | | 60 | | 70 | | 80 | | 90 | |
| G | Q | A | I | A | N | R | F | T | S | N | I |
| G | Q | A | I | A | N | R | F | T | S | N | I |
| G | Q | A | I | A | N | R | F | T | S | N | I |
| G | Q | A | I | A | N | R | F | T | S | N | I |
| G | Q | A | I | A | N | R | F | T | S | N | I |
| G | Q | A | I | A | N | R | F | T | S | N | I |
| | | | | | | | | | | | |
| G | Q | A | I | A | N | R | F | T | S | N | I |
| G | Q | A | I | A | N | R | F | T | S | N | I |

Translation of O145 CB12513

Translation of O145 RM12581

Translation of O28 CB9651

Translation of O152 SE11

Translation of O132 N87

Translation of O26:H46 5306-56

| | | | | | | | | | |
|---|---|-----|---|-----|---|-----|---|-----|---|
| | | 100 | | 110 | | 120 | | 130 | |
| R | E | L | T | V | Q | A | S | T | G |
| R | E | L | T | V | Q | A | S | T | G |
| R | E | L | T | V | Q | A | S | T | G |
| R | E | L | T | V | Q | A | S | T | G |
| R | E | L | T | V | Q | A | S | T | G |
| R | E | L | T | V | Q | A | S | T | G |
| | | | | | | | | | |
| R | E | L | T | V | Q | A | S | T | G |
| R | E | L | T | V | Q | A | S | T | G |

Alignment Name: Translation of H28 and H46 strains.aaa_bsml

Length: 585

Translation of O145 CB12513

Translation of O145 RM12581

Translation of O28 CB9651

Translation of O152 SE11

Translation of O132 N87

Translation of O26:H46 5306-56

| | 140 | 150 | 160 | 170 | 180 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----|-----|-----|-----|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | K | D | G | S | M | K | I | Q | V | G | A | N | D | G | Q | T | I | T | I | D | L | K | K | I | D | S | D | T | L | G | L | S | G | F | N | V | N | G | G | A | V | A | N | T | | |
| A | K | D | G | S | M | K | I | Q | V | G | A | N | D | G | Q | T | I | T | I | D | L | K | K | I | D | S | D | T | L | G | L | S | G | F | N | V | N | G | G | A | V | A | N | T | | |
| A | K | D | G | S | M | K | I | Q | V | G | A | N | D | G | Q | T | I | T | I | D | L | K | K | I | D | S | D | T | L | G | L | S | G | F | N | V | N | G | G | A | V | A | N | T | | |
| A | K | D | G | S | M | K | I | Q | V | G | A | N | D | G | Q | T | I | T | I | D | L | K | K | I | D | S | D | T | L | G | L | S | G | F | N | V | N | G | G | A | V | A | N | T | | |
| A | K | D | G | S | M | K | I | Q | V | G | A | N | D | G | Q | T | I | T | I | D | L | K | K | I | D | S | D | T | L | G | L | S | G | F | N | V | N | G | S | G | A | V | A | N | T | |
| A | K | D | G | S | M | K | I | Q | V | G | A | N | D | G | Q | T | I | T | I | D | L | K | K | I | D | S | S | T | L | K | L | T | G | F | N | V | N | G | S | G | S | V | A | N | T | |
| | A | K | D | G | S | M | K | I | Q | V | G | A | N | D | G | Q | T | I | T | I | D | L | K | K | I | D | S | S | T | L | K | L | T | G | F | N | V | N | G | S | G | S | V | A | N | T |

Translation of O145 CB12513

Translation of O145 RM12581

Translation of O28 CB9651

Translation of O152 SE11

Translation of O132 N87

Translation of O26:H46 5306-56

| | 190 | 200 | 210 | 220 | 230 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----|-----|-----|-----|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | A | T | K | D | E | L | A | A | A | A | A | A | A | G | T | T | P | A | V | G | T | D | G | V | T | K | Y | T | V | D | A | G | L | N | K | A | T | A | A | N | V | F | A | N | | |
| A | A | T | K | D | E | L | A | A | A | A | A | A | A | A | G | T | T | P | A | V | G | T | D | G | V | T | K | Y | T | V | D | A | G | L | N | K | A | T | A | A | N | V | F | A | N | |
| A | A | T | K | D | E | L | A | A | A | A | A | A | A | A | G | T | T | P | A | V | G | T | D | G | V | T | K | Y | T | V | D | A | G | L | N | K | A | T | A | A | N | V | F | A | N | |
| A | A | T | K | S | D | L | A | A | A | Q | L | L | A | P | G | T | A | D | A | N | - | - | - | G | T | V | T | Y | T | V | S | A | G | L | K | T | T | S | T | A | A | D | V | I | A | S |
| A | A | T | K | S | D | L | A | A | A | Q | L | L | A | P | G | T | A | D | A | N | - | - | - | G | T | V | T | Y | T | V | G | A | G | L | K | T | T | S | T | A | A | D | V | I | A | S |
| A | A | T | K | D | E | L | A | A | A | A | A | A | A | A | G | T | T | P | A | V | G | T | D | G | V | T | K | Y | T | V | D | A | G | L | N | K | A | T | A | A | N | V | F | A | N | |
| | A | A | T | K | d | e | L | A | A | a | a | a | a | a | g | T | t | p | A | v | G | T | D | G | V | t | k | Y | T | V | d | A | G | L | n | k | a | T | A | A | N | V | f | A | n | |

Translation of O145 CB12513

Translation of O145 RM12581

Translation of O28 CB9651

Translation of O152 SE11

Translation of O132 N87

Translation of O26:H46 5306-56

| | 240 | 250 | 260 | 270 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----|-----|-----|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L | A | D | G | A | V | V | N | A | S | I | S | N | G | F | G | - | A | A | A | T | D | Y | T | Y | N | K | A | T | N | D | F | T | F | N | A | S | I | A | A | A | - | V | G | D | | |
| L | A | D | G | A | V | V | N | A | S | I | S | N | G | F | G | - | A | A | A | T | D | Y | T | Y | N | K | A | T | N | D | F | T | F | N | A | S | I | A | A | A | - | V | G | D | | |
| L | A | D | G | A | V | V | N | A | S | I | S | N | G | F | G | - | A | A | A | T | D | Y | T | Y | N | K | A | T | N | D | F | T | F | N | A | S | I | A | A | A | - | V | G | D | | |
| L | A | N | N | A | K | V | N | A | T | I | A | N | G | F | G | S | P | T | A | T | D | Y | T | Y | N | S | A | T | G | D | F | T | Y | S | A | T | I | A | A | G | T | N | S | G | D | |
| L | A | N | N | A | K | V | N | A | T | I | A | N | G | F | G | S | P | T | A | T | D | Y | T | Y | N | S | A | T | G | D | F | T | Y | S | A | T | I | A | A | G | T | N | S | G | D | |
| L | A | D | G | A | V | V | D | A | S | I | S | N | G | F | G | s | a | a | A | T | D | Y | T | Y | N | K | A | T | N | D | F | T | F | N | A | S | I | A | A | X | a | n | X | G | D | |
| | L | A | d | g | A | v | V | n | A | s | i | s | n | g | f | g | s | a | a | A | T | D | Y | T | Y | N | K | A | T | N | D | F | T | f | n | A | s | I | A | A | X | a | n | X | G | D |

| | 280 | 290 | 300 | 310 | 320 |
|--------------------------------|---|-----|-----|-----|-----|
| Translation of O145 CB12513 | S N S A A L Q S F L T P K A G D T A N L S V K I G T T S V D V V L A S D G K I T A K D G S E | | | | |
| Translation of O145 RM12581 | S N S A A L Q S F L T P K A G D T A N L S V K I G T T S V D V V L A S D G K I T A K D G S E | | | | |
| Translation of O28 CB9651 | S N S A A L Q S F L T P K A G D T A N L S V K I G T T S V D V V L A S D G K I T A K D G S E | | | | |
| Translation of O152 SE11 | S N S A Q L Q S F L T P K A G D T A N L N V K I G S T S I D V V L A S D G K I T A K D G S E | | | | |
| Translation of O132 N87 | S N S A Q L Q S F L T P K A G D T A N L N V K I G S T S I D V V L A S D G K I T A K D G S E | | | | |
| Translation of O26:H46 5306-56 | S N S A A L Q S F L T P K A G D T A N L S V K I G T T S V N V V L A S D G K I T A K D G S A | | | | |
| | S N S A a L Q S F L T P K A G D T A N L s V K I G t T S v d V V L A S D G K I T A K D G S e | | | | |
| | 330 | 340 | 350 | 360 | |
| Translation of O145 CB12513 | L F I D V D G N L T Q N N A G T V K A A T L D A L T K N W H T T G T P D A V S T V I T T E D | | | | |
| Translation of O145 RM12581 | L F I D V D G N L T Q N N A G T V K A A T L D A L T K N W H T T G T P D A V S T V I T T E D | | | | |
| Translation of O28 CB9651 | L F I D V D G N L T Q N N A G T V K A A T L D A L T K N W H T T G T P D A V S T V I T T E D | | | | |
| Translation of O152 SE11 | L F I D V D G N L T Q N N A G T V K A A T L D A L T K N W H T T G T P G A V S T V I T T E D | | | | |
| Translation of O132 N87 | L F I D V D G N L T Q N N A G T V K A A T L D A L T K N W H T T G T P S A V S T V I T T E D | | | | |
| Translation of O26:H46 5306-56 | L Y I D S T G N L T Q N S A G T V T A A T L D G L T K N H D A T G - - - A V G V D I T T A D | | | | |
| | L f I D v d G N L T Q N n A G T V k A A T L D a L T K N w h t T G T P d A V s t v i T T e D | | | | |
| | 370 | 380 | 390 | 400 | 410 |
| Translation of O145 CB12513 | E T T F T L A G G T D A T T - - - S G T I T V A N A R M S A E S L Q S A T K S T G F T V D V | | | | |
| Translation of O145 RM12581 | E T T F T L A G G T D A T T - - - S G T I T V A N A R M S A E S L Q S A T K S T G F T V D V | | | | |
| Translation of O28 CB9651 | E T T F T L A G G T D A T T - - - S G T I T V A N A R M S A E S L Q S A T K S T G F T V D V | | | | |
| Translation of O152 SE11 | E T T F T L A G G T D A T T - - - S G A I T V A N A R M S A E S L Q S A T K S T G F T V D V | | | | |
| Translation of O132 N87 | E T T F T L A G G T D A T T - - - S G A I T V A N A R M S A E S L Q S A T K S T G F T V D V | | | | |
| Translation of O26:H46 5306-56 | G A T I S L A G S A N A A T G T Q S G A I T L K N V R I S A D A L Q S A A K G T V I N V D N | | | | |
| | e t T f t L A G g t d A t T G T Q S G X I T v a N a R m S A e s L Q S A t K s T g f t V D v | | | | |

Alignment Name: Translation of H28 and H46 strains.aaa_bsml

Length: 585

Translation of O145 CB12513

Translation of O145 RM12581

Translation of O28 CB9651

Translation of O152 SE11

Translation of O132 N87

Translation of O26:H46 5306-56

| | 420 | 430 | 440 | 450 | 460 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----|-----|-----|-----|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G | T | T | G | T | S | A | G | D | I | K | V | D | S | K | G | I | V | Q | Q | H | T | G | T | G | F | E | D | A | Y | T | K | A | D | G | S | L | T | T | D | N | T | T | N | L | F |
| G | T | T | G | T | S | A | G | D | I | K | V | D | S | K | G | I | V | Q | Q | H | T | G | T | G | F | E | D | A | Y | T | K | A | D | G | S | L | T | T | D | N | T | T | N | L | F |
| G | T | T | G | T | S | A | G | D | I | K | V | D | S | K | G | I | V | Q | Q | H | T | G | T | G | F | E | D | A | Y | T | K | A | D | G | S | L | T | T | D | N | T | T | N | L | F |
| G | A | T | G | N | S | A | G | D | I | K | V | D | S | K | G | I | V | Q | Q | Y | T | G | T | V | F | E | D | A | Y | T | K | A | D | G | S | L | T | T | D | N | T | T | N | L | F |
| G | A | T | G | T | S | A | G | D | I | K | V | D | S | K | G | I | V | Q | Q | H | T | G | T | G | F | E | D | A | Y | T | K | A | D | G | S | L | T | T | D | N | T | T | N | L | F |
| G | - | - | - | - | - | A | D | D | I | S | V | S | K | T | G | V | V | T | T | G | G | - | - | - | A | P | T | Y | T | D | A | D | G | K | L | T | T | T | N | T | V | D | Y | F | |
| G | t | T | G | t | S | A | g | D | I | k | V | d | s | k | G | i | V | q | q | h | t | G | T | g | F | e | d | a | Y | T | K | A | D | G | s | L | T | T | d | N | T | t | n | I | F |

Translation of O145 CB12513

Translation of O145 RM12581

Translation of O28 CB9651

Translation of O152 SE11

Translation of O132 N87

Translation of O26:H46 5306-56

| | 470 | 480 | 490 | 500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----|-----|-----|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L | Q | K | D | G | T | V | T | N | G | S | G | K | A | V | Y | V | S | A | D | G | N | F | T | T | D | A | E | T | K | A | A | T | T | A | D | P | L | K | A | L | D | E | A | I | S |
| L | Q | K | D | G | T | V | T | N | G | S | G | K | A | V | Y | V | S | A | D | G | N | F | T | T | D | A | E | T | K | A | A | T | T | A | D | P | L | K | A | L | D | E | A | I | S |
| L | Q | K | D | G | T | V | T | N | G | S | G | K | A | V | Y | V | S | A | D | G | N | F | T | T | D | A | E | T | K | A | A | T | T | A | D | P | L | K | A | L | D | E | A | I | S |
| L | Q | K | D | G | T | V | T | N | G | S | G | K | A | V | Y | V | S | A | D | G | N | F | T | T | D | A | E | T | K | A | A | T | T | A | D | P | L | K | A | L | D | E | A | I | S |
| L | Q | K | D | G | T | V | T | N | G | S | G | K | A | V | Y | V | S | A | D | G | N | F | T | T | D | A | E | T | K | A | A | T | T | A | D | P | L | K | A | L | D | E | A | I | S |
| L | Q | T | D | G | S | V | T | N | G | S | G | K | G | V | Y | T | D | A | A | G | K | F | T | T | D | A | A | T | K | A | A | T | T | T | D | P | L | K | A | L | D | D | A | I | S |
| L | Q | k | D | G | t | V | T | N | G | S | G | K | a | V | Y | v | s | A | d | G | n | F | T | T | D | A | e | T | K | A | A | T | T | A | D | P | L | K | A | L | D | e | A | I | S |

Translation of O145 CB12513

Translation of O145 RM12581

Translation of O28 CB9651

Translation of O152 SE11

Translation of O132 N87

Translation of O26:H46 5306-56

| | 510 | 520 | 530 | 540 | 550 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----|-----|-----|-----|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | I | D | K | F | R | S | S | L | G | A | V | Q | N | R | L | D | S | A | V | T | N | L | N | N | T | T | T | N | L | S | E | A | Q | S | R | I | Q | D | A | D | Y | A | T | E | V |
| S | I | D | K | F | R | S | S | L | G | A | V | Q | N | R | L | D | S | A | V | T | N | L | N | N | T | T | T | N | L | S | E | A | Q | S | R | I | Q | D | A | D | Y | A | T | E | V |
| S | I | D | K | F | R | S | S | L | G | A | V | Q | N | R | L | D | S | A | V | T | N | L | N | N | T | T | T | N | L | S | E | A | Q | S | R | I | Q | D | A | D | Y | A | T | E | V |
| S | I | D | K | F | R | S | S | L | G | A | V | Q | N | R | L | D | S | A | V | T | N | L | N | N | T | T | T | N | L | S | E | A | Q | S | R | I | Q | D | A | D | Y | A | T | E | V |
| S | I | D | K | F | R | S | S | L | G | A | V | Q | N | R | L | D | S | A | V | T | N | L | N | N | T | T | T | N | L | S | E | A | Q | S | R | I | Q | D | A | D | Y | A | T | E | V |
| Q | I | D | K | F | R | S | S | L | G | A | V | Q | N | R | L | D | S | A | V | T | N | L | N | N | T | T | T | N | L | S | E | A | Q | S | R | I | Q | D | A | D | Y | A | T | E | V |
| s | I | D | K | F | R | S | S | L | G | A | v | Q | N | R | L | D | S | A | V | T | N | L | N | N | T | T | T | N | L | S | E | A | Q | S | R | I | Q | D | A | D | Y | A | T | E | V |

Alignment Name: Translation of H28 and H46 strains.aaa_bsml

Length: 585

Translation of O145 CB12513

Translation of O145 RM12581

Translation of O28 CB9651

Translation of O152 SE11

Translation of O132 N87

Translation of O26:H46 5306-5

| | | 560 | | | | | | | | | | 570 | | | | | | | | | | 580 | | | | | | | | | | |
|---|---|-----|---|---|---|---|---|---|---|---|---|-----|---|---|---|---|---|---|---|---|---|-----|---|---|---|---|---|---|---|---|---|---|
| S | N | M | S | K | A | Q | I | I | Q | Q | A | G | N | S | V | L | A | K | A | N | Q | V | P | Q | Q | V | L | S | L | L | Q | G |
| S | N | M | S | K | A | Q | I | I | Q | Q | A | G | N | S | V | L | A | K | A | N | Q | V | P | Q | Q | V | L | S | L | L | Q | G |
| S | N | M | S | K | A | Q | I | I | Q | Q | A | G | N | S | V | L | A | K | A | N | Q | V | P | Q | Q | V | L | S | L | L | Q | G |
| S | N | M | S | K | A | Q | I | I | Q | Q | A | G | N | S | V | L | A | K | A | N | Q | V | P | Q | Q | V | L | S | L | L | Q | G |
| S | N | M | S | K | A | Q | I | I | Q | Q | A | G | N | S | V | L | A | K | A | N | Q | V | P | Q | Q | V | L | S | L | L | Q | G |
| S | N | M | S | K | A | Q | I | I | Q | Q | A | G | N | S | V | L | A | K | A | N | Q | V | P | Q | Q | V | L | S | L | L | Q | G |
| S | N | M | S | K | A | Q | I | I | Q | Q | A | G | N | S | V | L | A | K | A | N | Q | V | P | Q | Q | V | L | S | L | L | Q | G |