

SUPPLEMENTARY MATERIAL

Figure S1. Multiple alignment of 29 proteins belonging to the same similarity cluster as Rv2714. Secondary structure elements of Rv2714 are shown at the top; aminoacid positions involved in monomer-monomer interactions upon trimer formation (with buried surface $> 10 \text{ \AA}^2$) are indicated by an asterisk. Strictly invariant positions are shown in white on a red background, those with conservative substitutions are shown in red. Each gene sequence is identified by the Gene Object Identifier from the Integrated Microbial Genomes database (<http://img.jgi.doe.gov/cgi-bin/pub/main.cgi>) followed by the abbreviated species name (as described in the Figure 2 legend).

Rv2714

1 10 20 30

β1 →

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Rv2714      . . MARDQG . . . . . ADEAREYEPGQPQMYELEFFPAP . . . . . QLSSSSDG . . . . . R
637072303 Mlep MSHSHYQD . . . . . PDDEQHYQPGQMYELEFFPAP . . . . . QLLSADG . . . . . R
637135807 Map . . MTHRQD . . . . . AGDQYQPGQAGMYELEFFPAP . . . . . QLSTSDG . . . . . R
637576343 Nf . . . . . MDYESRMYELEFFPAP . . . . . QLSSADG . . . . . S
638093387 Rhod . . . . . MDEQSKMYELEFFPAP . . . . . QLSADG . . . . . Q
638031294 Mmcs . . MAD.HP . . . . . DIPEQQYQPEQTGMYELEFFPAP . . . . . QLSAADG . . . . . R
639741235 Msme . . MAD.N . . . . . ENPQQRYQPDQSGMYELEFFPAP . . . . . QLSSSDG . . . . . R
639077726 Mflav . . MAD.DA . . . . . HDSGSRYQPEQTGMYELEFFPGP . . . . . QLSTPDG . . . . . R
639805929 Mvan . . MAD.DV . . . . . HDPGHEYQPEQTGMYELEFFPGP . . . . . QLSSPDG . . . . . R
637209400 Sav . . . . . MLDPQG . . . . . LYAWEFPKGLAVVDMALAQES . . . . . A
637266231 Scoe . . . . . MLDPQD . . . . . LYTWEFPKGLAVVDMALAQES . . . . . A
637521847 Pacnes . . . . . MDRQSN . . . . . RFSWHP . . . . . GIVGPDQ . . . . . E
637525871 Leifx . . . . . MRDPGE . . . . . LFELT . . . . . TSAL . . . . . EV . . . . . D
638988396 marct . . . . . MRDPAG . . . . . LYDTA . . . . . TDVA . . . . . GVP . . . . . R
637664908 Corjei . . . . . MHOHFENNGDEHNGRHE . . . . . RKAAGRMYEM . . . . . YPAP . . . . . IQFDRPSIADEATGLGSAVEGS
637684621 Therfu . . . . . MRDPAD . . . . . LYELR . . . . . SDLP . . . . . E . . . . . L . . . . . S
637878581 Fsp . . . . . MLDPD . . . . . LYDLA . . . . . EDLA . . . . . G . . . . . GSIDL . . . . . S
638098695 Fraal . . . . . MLDPQE . . . . . LYSLT . . . . . EDAS . . . . . D . . . . . DPIDA . . . . . H
638583496 Fsp . . . . . MLDPRE . . . . . LYEIR . . . . . SDLD . . . . . DL . . . . . DL . . . . . G
638441246 Krad . . . . . MLDPGS . . . . . LYSYE . . . . . GERP . . . . . A . . . . . L . . . . . V
638880255 Jsp . . . . . MQNPSD . . . . . LYRFE . . . . . FDGP . . . . . APTREP . . . . . . . . . . G
639244787 Saltrop . . . . . MLDPHE . . . . . LYELT . . . . . DDL . . . . . D . . . . . L . . . . . G
639689429 Arth . . . . . MLERISGS . . . . . LLDPEA . . . . . LYVSN . . . . . AEL . . . . . FDNPEL . . . . . R
639800568 Aaur . . . . . MPDVDMSPGVMCWWPEPPRTLSLRKEHAVFERISGS . . . . . LLDPEL . . . . . LYARN . . . . . IET . . . . . FHSPEL . . . . . R
639728788 Acel . . . . . MLDPTD . . . . . LYTIS . . . . . GTTP . . . . . ARAPD . . . . . . . . . . A
639777457 Noca . . . . . MPER . . . . . LVHIV . . . . . DEVP . . . . . ELDDARS . . . . . . . . . . R
637118632 Cordiph . . . . . M . . . . . NEREAKMYELEFFPAP . . . . . DVASDG . . . . . . . . . . D
637352702 Coref . . . . . M . . . . . SDNKESMYELEFFPSP . . . . . EVNGGGS . . . . . . . . . . E
639316408 Corg . . . . . M . . . . . SDNDRMYELEFFPSP . . . . . EVSGQTA . . . . . . . . . . G
  
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Rv2714

β2 α1 β3 η1 β4 β5 β6

40 50 60 70 80 90 100 110

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Rv2714      G . PV LVH A L E G F S D A G H A I R L A A A H L K A A L D T E L V A S F A I D E L L D Y R S R R F L M T F K T D H F T H S D D P E L S L Y A L R D S I G T P
637072303 Mlep G . PV LIH A L E G F S D A G H A I R L A A T H L K A A L N T E L V A S F A I D E L L D Y R S R R F L M T F K T D H F T H Y D D P E L S L Y A L R D S V G T P
637135807 Map G . PV LVH A L E G F S D A G H A I R L A A K H L K A A L D S E L V A S F A I D E L L D Y R S R R F L M T F K T D H F T H Y D D P E L S L Y A L R D S V G T P
638093387 Rhod G . PV LVH G L E G F T D A G H A V R L A T T H L R E S L E S E L V A S F A V D E L L D Y R S R R F L M T F K T D H F S D Y A E P E L N L Y A L R D T A G T P
638031294 Mmcs G . PV LIH A L E G F S D A G H A V R L A T A H L K N S L D T E L V A S F A I D E L L D Y R S R R F L M T F K T D H F S A Y A E P E L N L Y A M H D T V G T P
639741235 Msme G . PV LIH A L E G F S D A G H A I R L A A E H L K K S L D T E L V A S F A I D E L L D Y R S R R F L M T F K T D H F T A Y E E P E L N L Y A L H D T V G T P
639077726 Mflav G . PV LIH A L E G F S D A G H A I K L A A A H L K N S L D T E L V A S F A I D E L L D Y R S R R F L M T F K T D H F T H Y D E P E L N L Y A L H D S V G T P
639805929 Mvan G . PV LIH A L E G F S D A G H A I R L S A Q H L K D T L D T E L V A S F A I D E L L D Y R S R R F L M T F K T D H F T H Y D Q P E L N L Y A L R D T A G T P
637209400 Sav G . LV M L Y H F D G Y I D A G E T G D Q I V D R L D S L P H Q V V A R F D H D R L V D Y R A R R F L L T F K R D R W S T E Y E E P T L V R L V Q D T T G A P
637266231 Scoe G . LV M L Y H F D G Y I D A G E T G D Q I V D Q L D S L P H Q V V A R F D H D R L V D Y R A R R F L L T F K R D R W S Y E E P T L V R L V Q D T A T A P
637521847 Pacnes V . S A L I T L V Q F S D T G L V Q A R V R D A L S Q L P H E L G E F D I D L L D H R D S R Q P I F D T D H F G Y E R P R L V L H E V D Q L G Q A
637525871 Leifx G . LP LV A G L T G F A D A G S G V S Q L G T Y L L A T L H S E V V A T F D A D L L L D Y R A R R F I Y F D D H F G Y Q S T L K L Y L V D E L R Q P
638988396 marct G . LP LV A G L T G F A D A G C A V S Q F S Q Y L L D T L E R S V V A S F D N D A L L D Y R A R R F T I Y F D Q D H L S D Y R P A K L E V Y L A K D E L G Q P
637664908 Corjei E E L P M L V A L Q G Y A D A G Q A V S S A S H L L A A L E H S P V A S F K V D E L L D Y R S R R F G V T I D N S K V M S D D V R L D L H L L K D T Q G R P
637684621 Therfu E . PV M L V S L D G F V D A G A A G K Q A V A T L L D G L Q H T E L A T F D I D E L L D Y R S R R F M I F N E T T W S Y A E P K L S L T L H D L E G T P
637878581 Fsp R . PV M L E A M T G V V D A G S A V S L A G E H L M T A L D H R L L A T F D I D Q L L D Y R S R R F M V F S E D R W E S Y E D P V L A L Y L L R D E A G T P
638098695 Fraal R . P I M L E A L T G V V D A G N A V S L A G E H L L T A L D H R L I A T F D V D Q L L D Y R S R R F M I F S E D H W E S Y T D V L A L Y L R D E S D T P
638583496 Fsp R . PV L I E A M T G V V D A G A V L S A E H L T T A L C H E R I V T F D V D Q L M D Y R S R R F P M V F Y E D H W E S Y D D P V L A I L H D E A G T P
638441246 Krad E . P P L V A L S G F I D A G N A V R L S V E H L L A T Q H E R V V A T F D V D Q L H D Y R A R R F T M F G G D W Q D Y E P P R L Q V H R V H D E G T S
638880255 Jsp . . G A L I V L G A F I D A G N I Q R I L G T H L V D T S E A E V V A T F D V D A L L D Y R G R R P A M V F D T N R W E S Y A D P S M V L Y R M S D R D G Q T
639244787 Saltrop Q . PV L I Q A L S G F V D A G N A T R L A R E Q L L T S L D A R V A R F D L D Q L F D Y R S R R F M T F V E D H W E S Y D A P A L E L H L L R D D A D T P
639689429 Arth G . LN L V M G F T G F A D A G H V V K Q I T A E L L L T L S E V V A F D A D Q I L D Y R S R R F H V T F V E D H L O D Y Q A P T L A L Y L R D G L G K P
639800568 Aaur G . LN M V M G T G F A D A G H V V R Q I N A E L L D L D G A E V V A F D A D Q I D Y R S R R F I S F V E D H L O A Y Q A P K L G L Y L N D G L G Q P
639728788 Acel G . L L V H A L S G Y V D A G D A V R L T A R H L L D T L D H E V I A R F D I D Q L F D Y R A R R F P M L F D E D H W A D A P E L V H V A H D G G R E
639777457 Noca G A L T M V L V L D G F L D A G N A A G R A A Q H L V D L S E G P V V A T F D V D E F H D Y R A R R F P M S F V R D H Y D A Y D A P R L V V R L I A D T G G T P
637118632 Cordiph G . P T L I A M Q G Y A D A G L A V E A S A D H L S A L E H R P V A F F N N D E L I D Y R S R R P A T V I D H N I V T A N E L K L M V L R D S N G T P
637352702 Coref G . P T L I V A L Q G Y A D A G H A V E A S H S H M A A L D H R L I A S F N N D E L I D Y R S R R F T V I D N N E V T E M D E L Q L S M H V R D S N D K P
639316408 Corg G . P T L I V A L Q G Y A D A G H A V E S S S H L M D A L D H R L I A S F N N D E L I D Y R S R R F V V I E H N E V T S M D E L N L G H V V R D N D N K P
  
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Rv2714

β7 α2 β8 β9 η2 β10 α3

120 130 140 150 160 170 180 190

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Rv2714      F L L I A G L E P D L K W E R F I T A V R L L A E R L G V R Q T I G L G T V P M A V P H T R P I T M T A H S N N R E L I S D F Q P S I S E I O V P G S A S N L L
637072303 Mlep F L L I A G M E P D L K W E R F I T A V R L L A E R L G V R Q T I S L G T V P M A V P H T R P I T L T A H S N N G L I A D F T P W I T E I O V P G S A S N L L
637135807 Map F L L I A G L E P D L K W E R F I T A V R L L A E R L G V R Q T I G L G T V P M A V P H T R P I T M T A H S N N P E L I K N F Q P W I A E I O V P G S A S N L L
637576343 Nf F L L I A G L E P D L R W E K F T T A V R L L A E Q L G V R S I G L S A I P M A V P H T R P L G I T A H S S D R S L I A D H Q R W P G E L Q V P G S A S N L L
638093387 Rhod F L L I A G M E P D L R W E R F T T A V R L L A B O L G V R R T V G I N A I P M A V P H T R P L G V T A H S T N K D L I K D H Q R W S G E L Q V P G S A S L I
638031294 Mmcs F L L I A G M E P D L R W E R F I T A V R L L A E O L G V R Q T I G L G S I P M A V P H T R P V T M T A H S N N K E L I A E H T P W V G E V Q V P A S V S L L
639741235 Msme F L L I A G L E P D L R W E R F I T A V R L L A E O L G V R Q V I G L G T I P M A V P H T R P V N L T A H S N N K E L I A E H T P W V G E V Q V P A S V S N L L
639077726 Mflav F L L I A G M E P D L R W E R F V T A V R L L A E R L G V R R V I G L G S I P M A V P H T R P M T L T A H S N D K E L I A E H Q P W V G E V Q V P G S A S N L L
639805929 Mvan F L L I A G M E P D L R W E R F I T A V R L L S E R L G V R R V I G L G S I P M A V P H T R P M T L T A H S N D K E L I A E H Q P W V N E V Q V P G S A S N L L
637209400 Sav F L L I S G P E P D V E W E R F A A A V Q Q I V E R L G V R L S V N F H G I P M G V P H T R P V G L T P H G N R N D L V P G H R S P F F E E A Q V P G S A E S L V
637266231 Scoe F L F I S G P E P D V E W E R F A A A V G Q I V E R L G V R L S V S F H G I P M G V P H T R P V G I T P H G S R T D L V P G H R S P F F E E A Q V P S A E A L V
637521847 Pacnes F L V I E G P E P A L G W E S L V S S L T S L V D S M G I R L T V I T D S I P I P P H T R P A I V T R W A S R P E L I L G S T S P F G R L Q V P A S F P V L V
637525871 Leifx F L L I L T G Y E P D F R W E A F T E A V L G M L E R F R V K S V T V W H A I P M P H T R P I G V T V S G N R A E L I E A M S W K P Q T Q V P A N A L H L L
638988396 marct F L L I L T G Y E P D F Q W E R F S A A V L R L V E K F D V K S T T V W H A I P M P H T R S I G V T V S G N R S B L I D S L S V W K P H T Q V P A N A M H L L
637664908 Corjei F L L I L S G L E P D L K W G A F S D A V V D L A R R G Q V G M V A S L Y S A P M T V P H T R P L V I S A H S S D S S L I Q D F H T W D S R M I V P G A A A L E T
637684621 Therfu F L L I L H G L E P D R R W E G F T A A V R Q L V E R L S V R L T V C F Y G I P M A V P H T R P V I A T P H A T R R E L V T E H T P W V G R I Q V P G N I M S L T
637878581 Fsp F L L I A G P E P D L W K R F T A L R G L A E R L G V R L T V G L N A I P M A V P H T R P L V S A H A T R K D L I V G Y E P W L R R L Q V P G S A G H L L
638098695 Fraal F L L I L T G P E P D L W K R F T A A V R G L V A E R L G V R L T V G L N A V P M A V P H T R P A T I T A H S S K E L L V G Y E P W L R R L Q V P G S A G H L L
638583496 Fsp F L L I L C G P E P D L H W K R F T K A V Q A V M A E L G V R M S V G L N A I P M A V P H T R P C T I T A H A T R K E L L V G Y E P W V R L R L S V P G S A G H L L
638441246 Krad F L L I L T G P E P D V Q W E R F T A A V Q L Q L E L G V G A T I V L S A A P T A V P H T R P S G V T A S A S R P E L L D G Y R T W D V E A Q V P G S A S A L L
638880255 Jsp Y Y L L T G P E P D Q W E R T E A I R Q L I A Q L I S L V T S H G I P M G V P H T R P G M T A H A T D R L R V G G K S P F G I Q V R A S F P A L L
639244787 Saltrop F L L I L T G P E P D L Q W E R F V A A V A G L S A R L D V R L T V G L N A I P M A V P H T R R T G V T A H A T R R E L T A G Y E P W L Q R V Q V P G S I G H L L
639689429 Arth F L F I A G F E P D L Q W E R F A R A V V R I V E H L D V N L V T W I H S I P M P H T R P V G V T V H G N R P E L I E G I S V W K P T V E V P A A V G H I L
639800568 Aaur F L L I A G F E P D L Q W E R F S R A V V G I V E H L D V N L V T W I H S I P M P H T R P V G V T V H G N M P D L I E G I S V W K P T V D V P A A I G H I L
639728788 Acel F L L I L T G P E P D Q W E R F V A A V C T L L E R Y G V D V T V G L N A I P L A P H T R P I G V T R H A T S O D L I P G N R P W L Q V H V P A S A A L L L
639777457 Noca Y L L L H G P E P D N R W E A F C R A V R E V V E R F G V S R V V G S V A P M T V P H T R P I A I T H H A N S P E L I T G E S P W G R E L R I P G S A Q A L L
637118632 Cordiph F L L I L S G P E P D L R W G A F T E A V D L V R R F G V R T I C I Y A A P M T V P H T R P I V S A H G N C A B L I K H F S I D S K V T I P G S A S L H I
637352702 Coref F L V L S G P E P D L R W G A F T E A V S D L V D K F G V D Q T I C I Y A A P M T V P H T R P I V S A H G N C A B L I K S R F S I D A R I S I P G S A S L K I
639316408 Corg F L M L S G P E P D L R W G D F S N A V V D L V E K F G V E N T I C L Y A A P M T V P H T R P T V T A H G N S T D R L K D Q V S I D A T R M T V P G S A S L M L
  
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