

S4

*

RS4_ECOLI	1	MARYLGPKLKLSRREGTDLFLKSGVRAIDTKCKIEQ---APGQHG-ARKPRLSDYGVQLR
RS4_HAEIN	1	MARYLGPKLKLSRREGTDLFLKSGVRAIDSKCKIDT---APGQHG-ARKPRLSDYGSQLR
RS4_THET8	1	-GRYIGPVCRLCRREGVKLYLK-GERCYSPKCAMERRPYPPGQHGQKRARRPSDYAVRLR
RS4_BACSU	1	-ARYTGPSWKLSRRLGISLSGT-GK-----ELEKRPYAPGPHGPGQRKKLSEYGLQLQ
RS4_MYCTU	1	MARYTGPVTRKSRRLRTDLVG--GDQ-----AFEKRPYPPGQHGRARIKE-SEYLLQLQ

RS4_ECOLI	57	EKQKVRRIYGVLERQFRNYYKEAARLKGNTGENLLALLEGRLDNVVYRMGFGATRAEARQ
RS4_HAEIN	57	EKQKVRRIYGILERQFRNYYKEANRLKGNTGENLLVLLEGRLDNVVYRMGFATTRAEARQ
RS4_THET8	59	EKQKLRRIYGISERQFRNLFEEASKKKGVTVGSVFLGLLESRLDNVVYRLGFAVSRQARQ
RS4_BACSU	52	EKQKLRHMYGVNERQFRTLFDKAGKLAGKHGENFMILLDSRLDNVVYKLGGLARTRRQARQ
RS4_MYCTU	52	EKQKARFTYGVMEKQFRRYEEAVRQPGKTGEELLKILESRLDNVIYRAGLARTRRMARQ

** * *

RS4_ECOLI	117	LVSHKAIMVNGRNVNIIASYQVSPNDVVSIREKAKKQSRVKAALAEQREKPTWLEVDAG
RS4_HAEIN	117	LVSHKAIMVNGRNVNIPSFQVSVNDVVAIREKSKKQARIKASLEAEQREKPTWLEVDASA
RS4_THET8	119	LVRHGHIIVNGRVRDLPSYRVRPGDEIAVAEEKSRNLELIRQNLEAMKGRKVGWLSLDVE
RS4_BACSU	112	LVNHGHILVDGSRVDIPSYLVKPGQTIQVREKSRNLSIIKESVEVNN--FVPEYLTFFDAE
RS4_MYCTU	112	LVSHGHFNVNGVHVNVPSYRVSQYDIVDVRDKSLNTVPFQIARETAGERPIPSWLQVVGE

* **

RS4_ECOLI	177	KMEGTFKRKPERSDLADINEHLIVELYSK
RS4_HAEIN	177	KMEGVFKRVPERSDLADINEHLIVELYSK
RS4_THET8	179	GKKGKFLRLPDREDLALPVNEQLVIEFYSR
RS4_BACSU	170	KLEGTFTRLPERSELAPEINEALIVEFYSR
RS4_MYCTU	172	RQRVLIHQLPERAQIDVPIEQILIVEEYYSK

S5

```

RS5_ECOLI      1  -----AH
RS5_HAEIN     1  -----MSN
RS5_MYCTU     1  -----MAEQ
RS5_BACSU     1  -----MRR
RS5_THET8     1  -----
RMS5_HUMAN  121 KKRKDLNRGQII GEGRYGFLWPLNPLMKNQAVQTTAQRSKEEQEKVEADMIQQREEDW

```

```

RS5_ECOLI      3  IEKQAG-----ELQEKLIAVNRVSKTVK-GGRIFS
RS5_HAEIN     4  IEKQVG-----ELQEKLIAVNRVSKTVK-GGRIMS
RS5_MYCTU     5  PAGQAGTTDNRDARGDREGRRRDSGRGSRERDGEKSNYLERVVAINRVSKVVK-GGRRFS
RS5_BACSU     4  IDPSK-----LELEERLVTVNRVAKVVK-GGRRFR
RS5_THET8     1  --PET-----DFEEKMILIRRTARMQA-GGRRFR
RMS5_HUMAN  181 RKKKMKVKRERGWGNSWGGISLGPDPGPCGETYEDFDTRILEVRNVFTMTAKEGRKKS

```

```

RS5_ECOLI     32  FTALIVVGDGNGRVGFGYGKAREVPAAIQKAMEKARRNMINVA-LNNGTLQHPVKGVHTG
RS5_HAEIN     33  FTALIVVGDGNGRVGFGYGKAREVPAAIQKAMEKARRNMINVA-LNEGTLQHPVKGVHTG
RS5_MYCTU     64  FTALIVVGDGNGMVGVGYGKAKEVPAAIAKGVVEEARKSFFRVP-LIGGTITHPVQGEAAA
RS5_BACSU     33  FAALVVVGDKNHVGFGTGKAQEVPEAIRKAVEDAKKNLIEVP-MVGTITIPHEIIGRFGA
RS5_THET8     27  FGALVVVGDROGRVGLGFGKAPEVPLAVQKAGYYARRNMVEVP-LONGTIPHEIEVEFGA
RMS5_HUMAN  241 IRVLVAVGNGKGAAGFSIGKATDRMDAFRKAKNRAVHHLHYIERYEDHTIFHDISLRFKR

```

```

RS5_ECOLI     91  SRVFMQPASEGTGIIAGGAMRAVLEVAGVHNVLAKAYGSTNPINVV RATIDGLENNMSPE
RS5_HAEIN     92  SRVFMQPASEGTGIIAGGAMRAVLEVAGVRNVLSKAYGSTNPINVV RATIDALANMKSPE
RS5_MYCTU    123  GVVLLRPASPGTGVIAGGAARAVLECAGVHDILAKSLGSDNAINVVHATVAALKLLQRPE
RS5_BACSU     92  GNILLKPASEGTVIAGGPVRAVLELAGVADILSKSLGSNTPINMIRATLQGLSELKRAE
RS5_THET8     86  SKIVLKPAPGTGVIAGAVPRAILELAGVTDILTKELGSRNPINIAAYATMEALRQLRTKA
RMS5_HUMAN  301  THIKMKKQPKGYGLRCHRAIITICRLIGIKDMYAKVSGSINMLSLTQGLFRGLSRQETHQ

```

```

RS5_ECOLI    151  MVAAKR-GKSVEEILGK-----
RS5_HAEIN    152  MVAAKR-GKTVDEILG-----
RS5_MYCTU    183  EVAARR-GLPIEDVAPAG-----MLKARRKSEALAASVLPDRTI-----
RS5_BACSU    152  DVAKLR-GKSVEEILG-----
RS5_THET8    146  DVERLRKGEAHAQAQG-----
RMS5_HUMAN  361  QLADKK-GLHVVEIREECGPLPIVVASPRGPLRKDPEPEDEVDPVKLDWEDVKTAQGMKR

```

```

RS5_ECOLI      -----
RS5_HAEIN     -----
RS5_MYCTU     -----
RS5_BACSU     -----
RS5_THET8     -----
RMS5_HUMAN  420 SVVSNLKRAAT

```

S7

```

RS7_HAEIN      1  ----MPRRRSVEARKILPD----PKFGSELLAKFINVIMVDGKKKVAESIVYGALETIAQ
RS7_ECOLI      1  ----MPRRRVIGQRKILPD----PKFGSELLAKFVNILMVDGKKKTAESIVYSALETIAQ
RS7_THET8      1  ----MARRRRAEVRQLQPD----LVYGDVLVTAFAFKIMRDGKKNLAAARIFYDACKIIQE
RS7_MYCTU      1  ----MPRKGPAPKRPLVND----PVYGSQLVLTQLVNKVLKGGKSLAERIVYGALEQARD
RS7_BACSU      1  ----MPRKGPVAKRDVLPD----PIYNSKLVSRLINKMMIDGKKGKQPOTILYKSFDTIKE
RMS7_HUMAN     61  EEKYVRELKKTQLIKAAPAGKTSVFEFDPVISKFTNMMMIGGNKVLARSLMIQTLEAVKR

```

```

                                     * *                               ***
RS7_HAEIN      53  R-----TGKEPLEAFEVALENVRPTVEVKSRRVGGSTYQVPVEVRPVRRN
RS7_ECOLI      53  R-----SGKSELEAFEVALENVRPTVEVKSRRVGGSTYQVPVEVRPVRRN
RS7_THET8      53  K-----TGQEPLKVFVKQAVENVKPRMEVRSRRVGGANYQVPMEVSPRRQQ
RS7_MYCTU      53  K-----TGTDPVITLKRALDNVVKPALEVRSRRVGGATYQVPVEVRPDRST
RS7_BACSU      53  R-----TGNDAMEVFEQALKNIMPVLEVKARRVGGANYQVPVEVRPERRT
RMS7_HUMAN     121  KQFEKYHAASAEEQATIERNPYTIFHQALKNCEPMIGLVPILKGGRFYQVPVPLPDRRRR

```

```

                                     *           *                               *
RS7_HAEIN      98  ALGMRWIVEAARKRGDKS--MALRLANELSDASDNKGAAVKKREDVHRMAEANKAFAYHR
RS7_ECOLI      98  ALAMRWIVEAARKRGDKS--MALRLANELSDAAENKGTAVKKREDVHRMAEANKAFAYHR
RS7_THET8      98  SLALRWLVQAANQRPERR--AAVRIAHELMDAAEKGKGAVKKEDVERMAEANRAYAYHR
RS7_MYCTU      98  TLALRWLVGYSRQRREKT--MIERLANEILDASNGLGASVKRREDTHKMAEANRAFAHYR
RS7_BACSU      98  TLGLRWLVNYARLRGEKT--MEERLANEILDAANNTGAAVKKREDTHKMAEANKAFAYHR
RMS7_HUMAN     181  FLAMKWMITECRDKKHQRTLMPEKLSHKLLEAFHNQGPVIKRRKHLHKMAEANRALAHYR

```

```

RS7_HAEIN      156  W-----
RS7_ECOLI      156  WLSLRSFSHQAGASSKQPALGYLN
RS7_THET8      156  W-----
RS7_MYCTU      156  W-----
RS7_BACSU      156  W-----
RMS7_HUMAN     241  WW-----

```

S11

```

RS11_ECOLI      1  -----MAKAPI-----RARKRVRKQVSDG-----*
RS11_HAEIN      1  -----AKTPV-----RARKRVKKQVVDG-----
RS11_MYCTU      1  -----MPPAKKGPATSARKGQ-----KTRRREKKNVPHG-----
RS11_BACSU      1  -----MAARKSN-----TRKRRVKKNIESG-----
RS11_THET8      1  -----MAKKP-----SKKKVKRQVASG-----
RMS11_HUMAN     1  MQAVRNAGSRFLRSWTWPQTAGRVVARTPAGTICTGARQLQDAAAKQKVEQNAAPSHTKF

```

```

RS11_ECOLI      20 -----VAHIHASFNNTIVTITDRQGNALGWATAGGSGFGRGS*
RS11_HAEIN      19 -----VRHIHASFNNTIVTITDRQGNALAWATAGGSGFGRGS*
RS11_MYCTU      30 -----AAHIKSTFNNTIVTITDPQGNVIAWASSGHVGFKGS
RS11_BACSU      22 -----IAHIRSTFNNTIVTITDTHGNAISWSSAGALGFGRGS
RS11_THET8      18 -----RAYIHASYNNTIVTITDPDGNPITWSSGGVIGYKGS
RMS11_HUMAN     61 SIYPPIPGEESSLRWAGKKFEEIPTAHIKASHNNTQIQVVSASNEPLAFASCGETEGRNA

```

```

RS11_ECOLI      56 RKSTPFAAQVAAERCA DAVKEYGIKNLEVMVKGPGRGRESTIRALNAAGFRITNITDVTP**
RS11_HAEIN      55 RKSTPFAAQVAAERCAEIVKEFGLKNLEVMVKGPGRGRESTIRALNAAGFRITNITDVTP
RS11_MYCTU      66 RKSTPFAAQLAAENAARKAQDHGVRKVDVFKVKGPGSGRETAIRSLQAAGLEVGAISDVTP
RS11_BACSU      58 RKSTPFAAQMAAETAAKGSI EHGLKTLEVTVKGPGSGREAAIRALQAAGLEVTAIRDVTP
RS11_THET8      54 RKGTPYAAQLAALDAAKKAMAYGMQSVVIVRGTGAGREQAIRALQASGLQVKSIVDDTP
RMS11_HUMAN     121 KKGTGIAAQTAGIAAAARAKQKGVIIHIVVVKGLGPGRLSAMHGLIMGGLEVISITDNTP*

```

```

RS11_ECOLI      116 IPHNGCRPPKRRV--
RS11_HAEIN      115 IPHNGCRPPKRRV--
RS11_MYCTU      126 QPHNGVRPPKRRV--
RS11_BACSU      118 VPHNGCRPPKRRV--
RS11_THET8      114 VPHNGCRPKKKFRKAS
RMS11_HUMAN     181 IPHNGCRPRKARKL--

```

S12

```
RS12_HAEIN      1  -----MATINQLVRKPRVKKVVKSNVPALEA-----
RS12_ECOLI      1  -----MATVNQLVRKPRARKVAKSNVPALEA-----
RS12_BACSU      1  -----MPTINQLIRKGRVSKVENSKSPALNKGYSNF
RS12_THET8      1  -----MPTINQLVRKGREKVRKKSVPALKG-----
RS12_MYCTU      1  -----MPTIQQLVRKGRDKISKVKTAALKG-----
RMS12_HUMAN     1  MSWSGLLHGLNTSLTCGPALVPRLWATCSMATLNQMHRLGPPKRPPR-KLGPTEG-----
```

*** *

```
RS12_HAEIN      27  -----CPQKRGVCTRVTTPPKKPNALRKVCRIRLTNGFEVTSYIGGEGHNLQEHS
RS12_ECOLI      27  -----CPQKRGVCTRVTTPPKKPNALRKVCRLTNGFEVTSYIGGEGHNLQEHS
RS12_BACSU      32  KKEHTNVSSPQKRGVCTRVTMTTPPKKPNALRKYARVRLTNGIEVTAYIPGIHNLQEHS
RS12_THET8      27  -----APFRRGVCTVVRTVTPPKKPNALRKVAKVRLTSGYEVTAYIPGEGHNLQEHS
RS12_MYCTU      27  -----SPQRRGVCTRVTTPPKKPNALRKVARVRLTSGVEVTAYIPGEGHNLQEHS
RMS12_HUMAN     55  -----RPQLKGVVLCTFTRKPKKPNANRKCVRVRLSTGREAVCFIPGEGHTLQEHQ
```

```
RS12_HAEIN      79  VVLIRGGRVKDLPGVRYHTVIRGALDCAGVKDRKQGRSKYGVKRPKA-----
RS12_ECOLI      79  VILIRGGRVKDLPGVRYHTVIRGALDCSGVKDRKQARSKYGVKRPKA-----
RS12_BACSU      92  VVLIRGGRVKNLPRVRYHIVIRGALDTAGVENRAQGRPKYGTKKPKAK-----
RS12_THET8      79  VVLIRGGRVKDLPGVRYHIVIRGVYDAAGVKDRKKSRSKYGTKKPKAEAAKTAACK
RS12_MYCTU      79  MVLIRGGRVKDLPGVRYKIIRGSLDTQGVKNRQARSRYGAKKEKG-----
RMS12_HUMAN     107  IVLVEGGRTQDLPGVKLTVVRGKYDCGHVQKK-----
```

S13

*

```
RS13_BACSU 1 MARIAGVDIPRDKRVVISLTYIFGIGRTTAQQVLKEAGVSEDTVRVDLTEEEELGKIRDII
RS13_MYCTU 1 MARLVGVDLPRDKRMEVALTYIFGIGRTRSNEILAAATGIDRDLRTRDLTEEQLIHLRDYI
RS13_THET8 1 MARIAGVEIPRNKRVDVALTYIYGIGKARAKEALEKTGINPATRVKDLTEAEVVRLREYV
RS13_ECOLI 1 MARIAGINIPDHKHAVIALTSIYGVGKTRSKAIIAAAGIAEDVKISELSEGOIDTLRDEV
RS13_HAEIN 1 MARIAGINIPDHKHAVIALTAIYGIGKTRSOAICAAAGIAEDVKIRELSEEQIDKLRDEV
```

```
RS13_BACSU 61 DK-LKVEGDLRREVSINIKRLIEIGSYRGIHRHRRGLPVRGQNSKNNARTRKGPRRTVANK
RS13_MYCTU 61 EANLKVEGDLRREVQADIRRKIEIGCYQGLRHRRGMPVRGQRTKTNARTRKGPKRTIAGK
RS13_THET8 61 ENTWKLEGEELRAEVAANIKRLMDIGCYRGLRHRRGLPVRGQRTRTNARTRKGPKRTVAGK
RS13_ECOLI 61 AK-FVVEGDLRREISMSIKRLMDLGCYRGLRHRRGLPVRGQRTKTNARTRKGPKPIKK-
RS13_HAEIN 61 GK-FTVEGDLRREVTLNIKRLLDLGCYRGLRHRRSLPVRGQRTKTNARTRKVHVSRSKNS
```

```
RS13_BACSU 120 KK----
RS13_MYCTU 121 KKAR--
RS13_THET8 121 KKAPRK
RS13_ECOLI -----
RS13_HAEIN 120 RGK---
```

S18

```
RS18_ECOLI      1  MAR-----YFRRRKFCRFTAEGV-----  
RS18_HAEIN     1  MAR-----YFRRRKFCRFTAENV-----  
RS18_BACSU     1  MAGG-----RRGGRAKRRKVCYFTSNGI-----  
RS182_MYCTU   1  MAAK-----SARKGPTKAKKNLLDSLGV-----  
RS18_THET8    1  MSTKNAKPKKEAQRPSRKAKVKATLGEF-----  
RMS181_HUMAN  1  MAAV-----VAVCGGLGRKKLTHLVTAAVSLTHPGTHTVLWRRGCSQQVSSNEDLPISME
```

* * *

```
RS18_ECOLI     19  -----QEIDYKDIATLKNYITE-SGKIVPSRITGTRAKYQRQLARAIAKRAR  
RS18_HAEIN    19  -----VEIDYKDIATLKNYISE-SGKIVPSRITGTRAKYQRQLARAIAKRAR  
RS18_BACSU    24  -----THIDYKDVDLLKKFVSE-RGKILPRRVTGTNAKYQRKLTAAIAKRAR  
RS182_MYCTU  24  -----ESVDYKDTATLRVFISD-RGKIRSRGVTGLTVQQQRQVAQAIAKNAR  
RS18_THET8   30  -----DLRDYRNVEVLKRFLSE-TGKILPRRRTGLSAKEQRILAKTIKRAR  
RMS181_HUMAN  56  NPYKEPLKKCILCGKHVDYKNVQLLSQFVSPFTGCIYGRHITGLCGKKQKEITKAIAKRAQ
```

```
RS18_ECOLI     64  YLSLLP--YTDRHQ-----  
RS18_HAEIN    64  YLALLP--YTDNHQ-----  
RS18_BACSU    69  QMALLP--YVSGE-----  
RS182_MYCTU  69  EMALLP--YPGQDRQRAALCP-----  
RS18_THET8   75  ILGLLP--FTEKLVRK-----  
RMS181_HUMAN 116  IMGFMPVTYKDPAYLKDPKVCNIRYRE
```

S21

```
RS21_ECOLI      1  -----MPVIKVRENEPFDVALRRFKRSCEKAGVLAEVRRREFYKPTTERKRAKASAV
RS21_HAEIN     1  -----MPVIKVRENESFDVALRRFKRSCEKAGILAEVRAREFYKPTTIRKRENATLA
RS21_BACSU     1  -----MSKTVVRKNESLEDALRRFKRSVSKTGTLQEARREFYKPSVKRKKK-----
RMS21_HUMAN    1  MAKHLKFIARTVMVQEGNVESAYRTLNRILTMDGLIEDIKHRRYYEKPCRRRQRES---Y
```

```
RS21_ECOLI     54  KRHAKKLARENARTRLY-----
RS21_HAEIN     54  KRHAKRNARENARNTRLY-----
RS21_BACSU     49  -----SEAARKRKF-----
RMS21_HUMAN    58  ERCRRIYNMEMARKINFLMRKNRADPWQGC
```


L1

RL1_ECOLI 1 -----MAKLT**KRM**RVI**REK**V-----
RL1_HAEIN 1 -----AKLT**TKM**KAI**KAG**V-----
RL1_BACSU 1 -----AK**KGK**Y**VEA**AKLV-----
RL1_MYCTU 1 -----MS**KTS**KAY**RAAA**AKV-----
RL1_THET8 1 -----PK**HGK**RY**RALL**EKV-----
RML1_HUMAN 1 MVYQ**TSLC**SCSVNIRV**PNR**HFAA**TKS**AK**TKK**GA**KEK**TP**DEK**K**DEI**E**IK**AY**PYME**GE**P**

*

RL1_ECOLI 17 -----ATKQYDINEA**IA**LL**KE**LATA**KF**VES-----VDVAV**NLGI**DARKSD**QNV**RG
RL1_HAEIN 16 -----STKAYEINEA**IA**VL**KQ**FATA**KF**VES-----VDVAV**NLGI**DPRKSD**QNV**RG
RL1_BACSU 16 -----HSKAYDVSE**AV**LV**KK**TNTAK**FD**AT-----VEVA**FRLG**VDPS**KNH**Q**QIR**G
RL1_MYCTU 17 -----RTNLYT**PLQ**AA**KL**AK**ETS**S**STK**Q**DAT**-----VEVA**IRLG**VDPR**KAD**Q**MV**RG
RL1_THET8 16 -----PNKVY**TIDE**AAR**LV**KE**LATA**K**FD**ET-----VEV**HAK**LGIDPR**RS**D**QNV**RG
RML1_HUMAN 61 EDDV**YLK**R**LYPR**Q**IY**EV**EKA**V**HLL**KK**FQ**IL**DF**TS**PK**Q**SVY**LD**LDL**T**LD**MAL**GKK**KN**VEP**FT**S**

RL1_ECOLI 62 AT**VL**PHGTG-R**SVR**VAV**FTQ**-GAN**AEEA**KA**AGA**EL**VG**MED**LAD**Q**IKK**GEM**NF**D**VVI**AS**PD**
RL1_HAEIN 61 AT**VL**PHGTG-R**EV**R**VAV**FTQ-GAN**ADAA**KE**AG**AD**LV**G**ME**DL**AE**Q**IKK**GEM**NF**D**VVI**AS**PD**
RL1_BACSU 61 AV**VL**PNGTG-K**TQR**V**LV**FA**K-GE**K**AKE**A**EA**AG**AD**F**VGD**T**DY**IN**KIQ**GW**FD**D**VIV**AT**PD**
RL1_MYCTU 62 TV**NL**PHGTG-K**TAR**V**VAV**FA**V-GE**K**ADA**VA**AG**AD**VVG**S**DDL**IE**RI**Q**GW**LF**DA**AI**AT**PD
RL1_THET8 61 TV**SL**PHGLG-K**QVR**V**LAI**AK-**GE**K**IKE**A**EE**AG**ADY**V**GG**E**II**Q**KIL**D**GW**M**DF**DA**VV**AT**PD**
RML1_HUMAN 121 VL**SL**PY**PF**ASE**INK**V**AV**FT**EN**A**SE**V**KIA**E**ENG**A**AF**AG**GT**SL**IQ**K**IWD**DE**IV**AD**FY**V**AV**PE

RL1_ECOLI 120 AM**RV**VG-**QL**G**QVL**G**PR**GL**MP**NP**KV**GT**VT**PN**VAE**AV**KNA**KAG-Q**V**RY**RND**K**NGI**I**HTT**IG**K**
RL1_HAEIN 119 AM**RV**VG-**QL**G**QVL**G**PR**GL**MP**NP**KV**GT**VT**PN**VAE**AV**KNA**KSG-Q**I**RY**RND**K**NGI**I**HTT**IG**K**
RL1_BACSU 119 MM**GE**VG-K**IG**R**VL**G**PK**GL**MP**NP**KT**GT**VT**FE**VE**KA**IGE**IKAG-K**VE**Y**RVD**K**AGNI**H**VPI**G**K**
RL1_MYCTU 120 Q**MA**K**VG**-R**IAR**V**L**G**PR**GL**MP**NP**KT**GT**VT**AD**VAK**AV**ADI**K**GG**-K**IN**F**RVD**K**QAN**L**H**F**VI**G**K**
RL1_THET8 119 VM**GA**V**GSK**L**GR**IL**GPR**GL**PN**PK**AG**TV**GF**N**IGE**II**RE**IKAG-R**IE**F**RND**K**TG**AI**HAP**V**GK**
RML1_HUMAN 181 IM**PE**LN-R**LR**KK**LN**KK--**Y**PK**LS**R**NS**IG**RD**IP**KML**EL**FK**NG**HEIK**V**DE**ER**EN**FL**QT**K**IAT**

RL1_ECOLI 178 V**DF**D**AD**KL**KEN**LE**ALL**V**AL**KK**KAP**T**QAK**GV**YIK**K**VS**-I**ST**TM**GAG**V**AVD**Q**AGL**S**AS**V**N**--
RL1_HAEIN 177 AN**FSE**V**Q**L**KEN**L**QALL**A**AL**N**KAK**PT**TAK**G**IFIK**K**VS**-I**ST**TM**GAG**V**AVD**Q**AS**L-----
RL1_BACSU 177 V**SF**E**DE**KL**VEN**F**TT**MY**DTIL**K**AK**P**AA**AK**GVY**V**K**N**VA**-V**ST**TM**GPG**V**KVD**-S**ST**F**NV**K---
RL1_MYCTU 178 A**SF**D**EKL**L**AEN**Y**GAA**I**DEV**L**RL**K**PSS**SK**GRYL**K**KIT**-V**ST**TT**GPG**I**PVD**PS**ITRN**F**AGE**-
RL1_THET8 178 A**SF**P**PE**KL**ADN**I**RAF**I**RA**LE**AHK**PE**GAK**GT**FL**RS**VY**-V**TT**TM**GPS**V**RIN**PH**S**-----
RML1_HUMAN 238 LD**MSS**D**QIA**AN**LQ**AV**INE**V**CR**HR**PL**N**LGP**F**VV**RA**FL**RS**ST**SE**GL**LL**KID**P**LLP**K**EV**K**N**EE

RL1_ECOLI -----
RL1_HAEIN -----
RL1_BACSU -----
RL1_MYCTU -----
RL1_THET8 -----
RML1_HUMAN 298 SE**KEDA**

L2

```

RL2_ECOLI      1  -----MAVVKCKPTSPGRRHVVKVNVPELHKGK-----PFAPLLE-----
RL2_HAEIN      1  -----AIVKCKPTSAGRRHVVKIVNPELHKGK-----PYAPLLD-----
RL2_MYCTU      1  -----MAIRKYKPTTPGRRGASVSDFAEITRST-----PEKSLVR-----
RL2_THET8      1  -----AVKKFKPYTPSRRFMTVADFSEITKTE-----PEKSLVK-----
RL2_BACSU      1  -----AIKKYKPSSNGRRGMTTSDFAEITTDK-----PEKSLLA-----
RML2_HUMAN     1  MALCALTRALRSLNLAPPPTVAAPAPSLFPAAQMMNNGLLQQPSALMLLPCRPVLTSVALN

```

```

RL2_ECOLI      36 -----KNSKSGGRNNGRITTRHIGGGHKQAYRIVDFKR-----NKD
RL2_HAEIN      35 -----TKSKTGGRNNGRITTRHIGGGHKQHYRLIDFKR-----NKL
RL2_MYCTU      36 -----PLHGRGGRNAHGRITTRHKGGGHKRAYRMIDFRN-----DKD
RL2_THET8      35 -----PLKKTGGRNNGRITVRFRRGGGHKRLYRIIDFKRW-----DKV
RL2_BACSU      35 -----PLHKKGGRNNGKLTVRHQGGGHKRQYRVIDFKR-----DKD
RML2_HUMAN     61 ANFVSWKSRTKYTITPVKMRKSGGRDHTGRIRVHIGGGGKQRYRMIDFLRFRPEETKSG

```

```

RL2_ECOLI      73 GIPAVVERLEYDPNRSANIALVLYKDGERRYILAPKGLKAGDQIQSG-----VDAAIKPG
RL2_HAEIN      72 DIPAVVERLEYDPNRSANIALVLYKDGERRYILAPKGLSVGDQIQAG-----INSPIKVG
RL2_MYCTU      74 GVNNAKVAHIEYDPNRTARIALLHYLDGEEKRYIIAPNGLSQGDVVEESG-----ANADIKPG
RL2_THET8      73 GIPAKVAATEYDPNRSARIALLHYVDGEEKRYIIAPDGLQVGGQVAVAG-----PDAPIQVG
RL2_BACSU      72 GIPGRVATVEYDPNRSANIALINYADGEEKRYILAPKGIQVGTETMSG-----PEADIKVG
RML2_HUMAN     121 PFEEKVIQVRYDPCRSADIALVAG-GSRKRWIIATENMQAGDTILNSNHIGRMAVAAREG

```

```

RL2_ECOLI      128 NTLPMRNI PVGSTVHNVE MKPGKGGQLARSAGTYVQIVARDGAYVTLRLRSGEMRKVEAD
RL2_HAEIN      127 NSLPMRNI PVGSTVHNVELKPGKGGQIARSAGAYVQIIAREGNVYTLRLRSGEMRKVLAE
RL2_MYCTU      129 NNLPLRNI PAGTLIHAVELRPGGGAKLARSAGSSIQLLGKEASYASLRMPSGEIRRVDVR
RL2_THET8      128 NALPLRFI PVGTVVHAVELEPKKGAKLARAAGTSAQIQGREGDYVILRLPSGELRKVHGE
RL2_BACSU      127 NALPLINI PVGTVVHNIELKPGKGGQLVRSAGTSAQVLGKEGKYVIVLRLNSGEVRMILSA
RML2_HUMAN     180 DAHPLGALPVGTLINNVESEPGRGAQYIIRAAGTCGVLLRKVNGTATIQLP SKRQMQVLET

```

*

```

RL2_ECOLI      188 CRATIGEVGNAEHMLRVLGKAGAARWRGVRPTVRGTAMNPVDHPHGGGEGRN-FGK-HPV
RL2_HAEIN      187 CVATIGEVGNSEHMLRVLGKAGANRWRGIRPTVRGTAMNPVDHPHGGGEGRN-FGK-HPV
RL2_MYCTU      189 CRATVGEVGNAEQANINWGKAGMRWKGRPSVIRGVVMNPVDHPHGGGEGKTSGGR-HPV
RL2_THET8      188 CYATVGAVGNADHKNIIVLGKAGRSRWLGRRPHVRGAAMNPVDHPHGGGEGRAPRGR-PPA
RL2_BACSU      187 CRASIGQVGNQHELINIGKAGRSRWKGRPTVRGSMNPNDHPHGGGEGRAPIGRKSPM
RML2_HUMAN     240 CVATVGRVSNVDHNKRVIIGQSRS-----QPLAQEQGLTVGGG-TPK

```

```

RL2_ECOLI      246 TPWGVQTKGKKTRS-NKRTDKFIVRRRSK-----
RL2_HAEIN      245 TPWGVQTKGKKTRH-NKRTDKYIVRRRGK-----
RL2_MYCTU      248 SPWKGPEG--RTRNANKSSNKFIVRRRRRTGKKHSR
RL2_THET8      247 SPWGWQTKGLKTRKRRKPSRFI IARRKK-----
RL2_BACSU      247 SPWKGKPTLEFKTRKQKNKSKDFIVRRRKNNK-----
RML2_HUMAN     280 GGLGLAQKIRPLNPHEKITGSCPSVLAQS-----

```

L3

RL3_ECO57 1 -----
RL3_HAEIN 1 -----
RL3_THETH 1 -----
RL3_MYCTU 1 -----
RL3_BACSU 1 -----
RML3_HUMAN 1 MPGWRLLTQVGAQVLGRLGDGLGAALGPGNRTHIWL FVRGLHGKSGTWWDEHLSEENVPF

RL3_ECO57 1 -----MIGLVGKKVGMTRIFTEEDGVSIPVT
RL3_HAEIN 1 -----MIGLVGRKVG MTRIFNEDGVSVPVT
RL3_THETH 1 -----MKGILGVKVG MTRIFRDD-RAVPVT
RL3_MYCTU 1 -----MARKGILGT KLGMTQVFDESNRVVPVT
RL3_BACSU 1 -----MTKGILGRKI GMTQVFAENGDLIPVT
RML3_HUMAN 61 IKQLVSD EDKAQLASKLCPLKDEPWP IHPWEPGSFRVGLIALKLGMMPLWTKDGQKHVVT

* * *

RL3_ECO57 26 VIEVEANRVTQVKDLANDGYRAIQVTTGAKKANRVTKPE--AGHFAKAGVEAGRGLWEFR
RL3_HAEIN 26 VIEIEANRVTQVKLENDGYTAVQVTTGSKKANRVTKPE--AGHFVKAGVEAGRGLWEFR
RL3_THETH 25 VILAGPCPVVQRRTP EKDGYTAVQLGFLPQNPKRVNRPL--KGFHAKAGVEPVRILREIR
RL3_MYCTU 28 VVKAGPNVVTRIRTP ERDGYSAVQLAYGEISPRKVNKPL--TGQYTAAGVNP RRYLAELR
RL3_BACSU 27 VIEAAPNVVLQKKTAE NDGYEAIQLGFDDKREKLSNKPE--KGFVAKAETAPKRFVKELR
RML3_HUMAN 121 LLQVQDCHVLKYTSKEN CNGKMATLSVGGKTVSRFRKATSILEFYRELGLPPKQTVKIFN

RL3_ECO57 84 LAE---GEEFTVGQSI SVELFADVKKVDVTGT SKGKGFAGTVKRWNFRTQDATHGNSLSH
RL3_HAEIN 84 -TE---GEEFTLGQEI NVDFADVKKVDVTGT SKGKGFQGGVKRWNFRTQDATHGNSLSH
RL3_THETH 83 DFN---PE----GDTVTVE I FKPERVDVTGT SKGRGFAGVMKRWNFAGGPDSHGAKIHI
RL3_MYCTU 86 LDDSDAATEYQVGQELTAE I FADGSYVDVTGT SKGKGFAGTMKRHGF RGQASHGAQAVH
RL3_BACSU 85 GVE---MDAYEVGQEV KVEIF SAGEIVDVTGT SKGKGFQGAIKRHGQSRGPMSHG-SRYH
RML3_HUMAN 181 ITDN---AAIKPGTPLYAAHFRP GQYVDVTAKTIGKGFQGMKRWGFKGQPATHGQTKTH

RL3_ECO57 141 RVPGSIGQNTPGKV FKGKKMAGQMGNERTVQSLDVVRVDAERNLLLVKGAVPGATGSD
RL3_HAEIN 140 RVLGSIGQNTPGRV FKGKKMAGHLGAERTVQSLDVVRVDAERKLLLVKGSVPGAINGD
RL3_THETH 136 RHPGSIGNRKT PGRVYKGGKMAGHYGAERTVMNLEVVDV IPEENLLLVKGAVPGPNGL
RL3_MYCTU 146 RRPGSIGGCATPARV FKGTRMAGRMGNDRVTVLNLLVHKVDAENG VLLIKGAVPGRTGGL
RL3_BACSU 141 RRPGSMGP-VDPNRV FKGKLLPGRMGGEQITVQNLEIVKVDAERNLLLIKGNVPGA KKS
RML3_HUMAN 238 RRPGAVATG-DIGRVWP GTKMPGKMGNIYRTEYGLKVWRINTKHNI IYVNGSVPGHKNC

RL3_ECO57 201 LIVKPAVKA-----
RL3_HAEIN 200 VIVKPAVKA-----
RL3_THETH 196 VIVRETKKAAK-----
RL3_MYCTU 206 VMVRS AIKRGEK-----
RL3_BACSU 200 ITVKS AVKSK-----
RML3_HUMAN 297 VKVKDSKLPAYKDLGKNLPFPTYFPDGDEEELPEDLYDENVCQPGAPSITFA

L5

* * *

RL5_MYCTU	1	MTTAQKVQPRLKERYRSEIRDALRKQFGYGNVMQIPTVTKVVVNMGVGEAARDAKLINGA
RL5_THET8	1	-----PLDVALKRKYEEVVRPELIRRFQYQNVWEVPRLEKVVINQGLGEAKEDARILEKA
RL5_BACST	1	-----MNRLKEKYVKEVVPALMSKFNYKSIMQVPKIEKIVINMGVGDVAVQNPKALDSA
RL5_BACSU	1	-----MNRLKEKYNKETAPALMTKFNYSVMQVPKIEKIVINMGVGDVAVQNAKAIDSA
RL5_ECOLI	1	-----AKLHDYKDEVVKKLMTFNYNSVMQVPRVEKITLNMGVGEAIAADKLLDNA

RL5_MYCTU	61	VNDLALITGQKPEVRRARKSIAQFKLREGMPVGVVRVTLRGDRMWEFLDRLTSIALPRIRD
RL5_THET8	56	AQELALITGQKPAVTRAKKSI SNFKLRKGMPIGLRVTLRRDRMWIFLEKLLNVALPRIRD
RL5_BACST	54	VEELTLIAGQRPVVTRAKKSIAGFRLRQGMPIGAKVTLRGGERMYEFLDKLISVSLPRVRD
RL5_BACSU	54	VEELTFIAGQKPVVTRAKKSIAGFRLREGMPIGAKVTLRGGERMYDFLDKLI SVSLPRVRD
RL5_ECOLI	53	AADLAAISGQKPLITKARKSVAGFKIRQGYPIGCKVTLRGGERMWEFFERLITIAVPRIRD

**

RL5_MYCTU	121	FRGLSPKQFDGVGNYTFGLAEQAVFHEVDVDKIDRVRGMDINVVVTS AATDDEGRALLRAL
RL5_THET8	116	FRGLNPNSFDGRGNYNLGLREQLIFPEITYDMVDALRGMDIAVVTTAETDEEARALLELL
RL5_BACST	114	FRGVSKKAFDGRGNYTLGIKEQLIFPEIDYDKVNKVRGMDIVIVTTANTDEEARELLALL
RL5_BACSU	114	FRGVSKKSF DGRGNYTLGIKEQLIFPEIDYDKVTKVRGMDIVIVTTANTDEEARELLTQV
RL5_ECOLI	113	FRGLSAKSF DGRGNYSMGVREQIFPEIDYDKVDRVRGLDITITTTAKSDEEGRALLAAF

RL5_MYCTU	181	GFPFKEN
RL5_THET8	176	GFPFRK-
RL5_BACST	174	GMPFOK-
RL5_BACSU	174	GMPFOK-
RL5_ECOLI	173	DFPFRK-

L6

RL6_ECO57 1 -SRVAKAPVVVPAGVDVKING-QVITIKGKNGELTRTLNDAVEVKH-ADNTLTFGPRDGY
RL6_HAEIN 1 -SRVAKAPVNI PAGVEVKLDG-QLLTVKGKNGELSRKIHESVEVKQ-DNGQFTFTPREGF
RL6_BACSU 1 -SRVGKLLLEIPSDVTVTLNDNNTVAVKGPKEGELTRTFHPDMEIKV-EDNVLTVARPSDQ
RL6_MYCTU 1 MSRIGKQPI PVPAGVDVTIEG-QSISVKGPKGTLGLTVAEPIKVARNDGAI VVTRPDDE
RL6_THETH 1 -SRIGRLPI PVPKGVSEVAP-GRVKVKGPKGELEVPVSPEMRVVV-EEGVVVRVERPSDE

* * *

RL6_ECO57 58 ADGWAQAGTARALLNSMVI GVTEGFTKKLQLVGVGYRAAVKGNVINLSLGF SHPVDHQLP
RL6_HAEIN 58 VEANAQSGTARALVNAMVI GVTEGFTKKLVLVGVGYRAQLKGNALIALSLGY SHPVEHTLP
RL6_BACSU 59 KEHRALHGTTRSLIGNMVEGVSKGFERGLELVGVGYRASKSGNKLVLNVGY SHPVEIVPE
RL6_MYCTU 60 RRNRSLHGLSRTLVSNLVTGVTQGYTTKMEIFGVGYRVQLKGSNLEFALGY SHPVVIEAP
RL6_THETH 58 RRHKS LHGLTRTLIANAVKGVSEGYSKELLIKGIYRARLVGRALELTVGF SHPVVVEPP

RL6_ECO57 118 AGITAECPQTQTEIVLKGADKQVIGQVAADLRAYRRPEPYKKG VRYADEVVRTKEAKKK-
RL6_HAEIN 118 VGITAECP SQTEIVLKGADKQLIGQVAADIRAYRRPEPYKKG VRYADEVVRIKEAKKK-
RL6_BACSU 119 EGIEIEVPSQTKVVVKGTDKERVGAI AANIRAVRSPEPYKKGIRYEGEVVRRKEGKSAK
RL6_MYCTU 120 EGITFAVQAPT KFTVSGIDKQKVGQIAANIRRLRRPD PYKKG VRYEGEQIRRKVGKTGK
RL6_THETH 118 EGITFEVPEPTRVRVSGIDKQKVGQVAANIRAIRKPSAYHEKGIYYAGEPVRLKPGKAGA

RL6_ECO57 --
RL6_HAEIN --
RL6_BACSU 179 --
RL6_MYCTU 180 --
RL6_THETH 178 KK

L7/L12

```
RL7_HAEIN      1  -----M
RL7_ECOLI      1  -----
RL7_BACSU      1  -----MA
RL7_MYCTU      1  -----MA
RL7_THET8      1  -----
RML7_HUMAN     1  MLPAAARPLWGPCLGLRAAAFRLARRQVPCVCTVRHMRSSGHQRCEALAGAPLDNAPKEY
```

```
RL7_HAEIN      2  SLTNEQIIIEAIAASKTVTEIVELIAAMEEKFGVSAAA AVAAAP-----AAG-G
RL7_ECOLI      1  SITKDQIIIEAVAAMSVM DVVELISAMEEKFGVSAAA AVAVA-----AG-P
RL7_BACSU      3  -LNIEEIIASVKEATVLELNDLVKAI EEEFGVTAAAPVAVAG-GA-----AAGG--
RL7_MYCTU      3  KLSTDELLDAFKEMTLLELSDFVKKFEETFEVTAAPVAVAAAGA-----APAGAA
RL7_THET8      1  ALDIERIKEELSQATVLEL KQLIDALKEAWGVTAAPVAVAA--A-----PAAGAA
RML7_HUMAN     61  PPKIQQLVQDIASLTLEL EISDLNELLKKTLKI QDVGLVPMGGVM SGAVPAAAAQEAVEED
```

```
RL7_HAEIN      48  AAAAEEKTEFDVVLKSAG-ANKVAVIKAVRGAT-GLGLKEAKDLVESAPANLKEGVSKEE
RL7_ECOLI      45  VEAAEEKTEFDVILKAAG-ANKVAVIKAVRGAT-GLGLKEAKDLVESAPAALKEGVS KDD
RL7_BACSU      50  --AAEEQSEFDLILAGAG-SQKIKVIKVVREIT-GLGLKEAKELVDNTPKPLKEGIAKEE
RL7_MYCTU      54  VEAAEEQSEFDVILEAAG-DKKIGVIKVVREIVSGLGLKEAKDLVDGAPKPLEKVAKEA
RL7_THET8      50  AAPAAEEKTEFDVILKEAG-AKKLEVIKELRAIT-GLGLKEAKDLAEKG-GPVKEGVS KQE
RML7_HUMAN     121  IPIAKERTHFTVRLTEAKPVDKVKLIKEIKNYIQGINLVQAKKLVE SLPQEIKANVAKAE
```

```
RL7_HAEIN      106  AEALKKELEEAGAEVEVK
RL7_ECOLI      103  AEALKKALEEAGAEVEVK
RL7_BACSU      106  AEELKAKLEEVGASVEVK
RL7_MYCTU      113  ADEAKAKLEAAGATVTVK
RL7_THET8      107  AEEIKKKLEAVGAVVELK
RML7_HUMAN     181  AEKIKAALEAVGGTVVLE
```


L14

```

                                *      *
RL14_THET8      1  -----MIQPQTYLEVADNTGARKIMCIRVLKGSNA---KYATVGDVIVA
RL14_MYCTU      1  -----MIQQESRLKVADNTGAKEILCIRVLGGSSR---RYAGIGDVIVA
RL14_ECOLI      1  -----MIQEQTMLNVADNSGARRVMCIKVLGGSHR---RYAGVGDIIKI
RL14_HAEIN      1  -----MIQEQTMLDVADNSGARSVMCIKVLGGSHR---RYAAIGDIIKI
RL14_BACSU      1  -----MIQQETRLKVADNSGAREVLTIKVLGGSGR---KTANIGDVIVC
RML14_HUMAN     1  MAFFTGLWGPFTCVSRVLSHHCFSTTGSLSAIQKMTVRVVDNSALGNSPYHRAPRCIHV
```

```

RL14_THET8      42  SVKEAIPRG-----AVKEGDVVKAVVVRTKKEIKRPDGSAIRFDNAAVIINNQLE-PRG
RL14_MYCTU      42  TVKDAIPGG-----NVKRGDVVKAVVVRTVKERRRPDGSYIKFDENAAVI IKPDND-PRG
RL14_ECOLI      42  TIKEAIPRG-----KVKKGDVVKAVVVRTKKGVRRPDGSVIRFDGNACVLLNNNSEQPIG
RL14_HAEIN      42  TVKEAIPRG-----KVKKGDVVKAVVVRTKKGVRRPDGSVIRFDGNACVILNNNTEQPIG
RL14_BACSU      42  TVKQATPGG-----VVKKGEVVKAVIVRTKSGARRSDGSYISFDENACVIIRD DKS-PRG
RML14_HUMAN     61  YKKNGVGKVG DQILLAIK GQKKKALIVGHCMGPRMTP---RFDSNNVVLIEDNGN-PVG
```

```

                                *      *
RL14_THET8      96  TRVFGPVARELR--EKGFMKIVSLAPEVL
RL14_MYCTU      96  TRIFGPVGRELR--EKRFMKIISLAPEVL
RL14_ECOLI      97  TRIFGPVTREL R--SEKFMKIIISLAPEVL
RL14_HAEIN      97  TRIFGPVTREL R--SEKFMKIIISLAPEVL
RL14_BACSU      96  TRIFGPVARELR--ENNFMKIVSLAPEVI
RML14_HUMAN    117  TRIKTP IPTSLRKREGEYSKVLAI AQNFV
```


L16

```
RL16_ECOLI      1  -----MLQPKRTKFRKMHKG-----
RL16_HAEIN     1  -----MLQPKRTKFRKVHKG-----
RL16_THET8     1  -----MLMPRRMKYRKQQRG-----
RL16_BACSU     1  -----MLLPKRVKYRREHRG-----
RL16_MYCTU     1  -----MLIPRKVKHRKQHHP-----
RML16_HUMAN    1  MWRLRARASAPLLRLPLSDSWALLPASAGVKTLPLVPSFEDVSIPEKPKLRFIERAPLVP
```

* *

```
RL16_ECOLI     16  -----RNRGLAQG--TDVSFGSFGLKAVGRGRLTARQIEAARRAMTRAVKRQGGKIW
RL16_HAEIN     16  -----RNRGLASG--TEVSFGTYGLKAVGRCRLTARQIEAARRAMSRAVKRQGGKIW
RL16_THET8     16  -----RLKGATKGGDYVAFGDYGLVALEPAWITAQQIEAARVAMVRHFRGGKIF
RL16_BACSU     16  -----KMRGRAKGGTEVHFGEFGIQALEASWITNRQIEAARIAMTRYMKRGGKIVW
RL16_MYCTU     16  -----RQRGIASGGTTVNFVDYGIQALEHAYVTNRQIESARIAINRHIKRGKIVW
RML16_HUMAN    61  KVRREPKNLSDIRGSPSTEATEFTEGNFAILALGGGYLHWGHFEMMRLTINRSMDPKNMFA
```

*

```
RL16_ECOLI     65  IRVFPD--KPITEKPLAVRMGKGNVEYWVALIQPGKVLVEMDGVPE-ELAREAFKLAA
RL16_HAEIN     65  IRVFPD--KPITEKPLEVRMGKGNVEYWVALIQPGKVLVEMDGVSE-EVARNAFALAA
RL16_THET8     66  IRIFPD--KPYTKKPLEVRMGKGNVEGYVAVVKPGRVMFEVAGVTE-EQAMEALRIAG
RL16_BACSU     66  IKIFPS--KPYTAKPLEVRMGSGKGAPEGWAVVKPGKVLFEISGVSE-EVAREALRLAS
RL16_MYCTU     66  INIFPD--RPLTKKPAETRMGSGKGSPEWVAVVKPGRVLFELSYVNE-GVARAALTRAI
RML16_HUMAN    121 IWRVPAPFKPITRKSIVGHRMGGGKAIDHYVTPVKAGRLVEMGGRCFEFEVQGFLDQVA
```

* *

```
RL16_ECOLI     122 AKLPIKTTFVTKTVM-----
RL16_HAEIN     122 AKLPVKTTFVTKTVM-----
RL16_THET8     123 HKLPIKTKIVRRDAYDEAQ-----
RL16_BACSU     123 HKLPIKTKFVKREEIIGGESNES-----
RL16_MYCTU     123 HKLPIKARIITREEQF-----
RML16_HUMAN    181 HKLPFAAKAVSRGTLEKMRKDQEERERNNQNPWTFERIATANMLGIRKVLSPYDLTHKGG
```

```
RL16_ECOLI     -----
RL16_HAEIN     -----
RL16_THET8     -----
RL16_BACSU     -----
RL16_MYCTU     -----
RML16_HUMAN    241 YWGKFYMPKRV
```

L18

```
RL18_BACSU      1  -----MITKTSKNAAR-----
RL18_THET8     1  -----MARLTAY-----
RL18_ECOLI     1  -----MDKKSAR-----
RL18_HAEIN     1  -----MDKKSAR-----
RL18_MYCTU     1  -----MAQSVSATRRISR-----
RML18_HUMAN    1  MALRSRFWGLFSVCRNPGCRFAALSTSSEPAAKPEVDPVENEVAPEFTNRRNPRNLELLS
```

```

                                     *      **
RL18_BACSU     12  -LKRHARVRAKLSGTAERPRLNVFRSNKHIYAQIIDVNGVTLASASTLDKDLNVES--T
RL18_THET8     8  -ERRKFRVRNRIKRTG-RLRLSVFRSLKHIYAQIIDDEKGVTLVSASSLALKLKGN----
RL18_ECOLI     8  -IRRATRARRKLQELG-ATRLVVHRTPRHIYAQVIAPNGSEVLVAASTVEKAI AEQLKYT
RL18_HAEIN     8  -IRRAARARHMMREQG-VTRLVIHRTPRHIYAQVIAPNGSEVLAAASTVEKAIREQVKYT
RL18_MYCTU    14  -LRRHTRLRKKLSGTAERPRLVVHRSARHIHVQLVNDLNGTTVAAASSIEADVRGVP--G
RML18_HUMAN   61  VARKERGWRTVFPSPREFWHRLRVIRTQHHEALVEHQ-NGKVVSASTREWAIKKHLST
```

```
RL18_BACSU     69  GDTSAATKVGELVAKRAAEKGISDVVFD RGGYLYHGR-VKALADAAREAGLKF-----
RL18_THET8     62  -KTEVARQVGRALAEKALALGKQVAFDRGPPYKYHGR-VKALAEGAREGGLEF-----
RL18_ECOLI     66  GNKDAAAAVGKAVAERALEKGIKDVSFDRSGFQYHGR-VQALADAAREAGLQF-----
RL18_HAEIN     66  GNKDAAAAVGKAVAERALAKGVQAVAFDRSGFKYHGR-VQTLADAAREAGLQF-----
RL18_MYCTU     71  DKKARSVRVQGLIAERAKAAGIDTVVFD RGGYTYGGR-IAALADAARENGLSF-----
RML18_HUMAN   120  RNVVACESIGRVLAQRCL EAGINFMVYQPTPWEAASDSMKRLQSAMTEGGVVLREPQRIYE
```

L19

RML19_HUMAN 1 MAACIAAGHWAAMGLGRSFQAARTLLPPPASIAACRVHAGPVRQQSTGPSEPGAQFPKPKP

RL19_BACSU 1 -----MOK--LIEDITKEQLRTDLPAFRPGDTRLVH
RL19_MYCTU 1 -----MNR--LDFVDKPSLRDDIPAFNPGDTINVH
RL19_THET8 1 -----MNRGALIKLVESTRYVRTDLPEFRPGDTRVVS
RL19_ECOLI 1 -----MSN--IIKQLEQEQMKQDVPSFRPGDTVEVK
RL19_HAEIN 1 -----MSN--IIKQLEQEQLKQNVPSFRPGDTLEVK
RML19_HUMAN 61 VIVDKHRPVEPERRFLSPEFIPRRGRDPLKFKQIERKDMLERRKVLHIPEFYVGSILRVT

RL19_BACSU 30 VKVVEGNRERIQIFEGVVIKRRGGGISETFTVTRKISYGVGVERTFPVHTPKIAKIEVVRY
RL19_MYCTU 29 VKVIEGAKERLQVFKGVVIRRQGGGIRETFTVTRKESYGVGVERTFPVHSPNIDHIEVVTR
RL19_THET8 32 YKVKEGNRTRIQDFEGIVIRIRNRNGFNTFTVTRKVSYGVGVERIFPLHSPLIQKIDIVQR
RL19_ECOLI 30 VWVVEGSKKRLQAFEGVVIKRRGGGISETFTVTRKISYGVGVERTFPVHTPKIAKIEVVRY
RL19_HAEIN 30 VWVVEGSKRRLQAFEGVVIKRRGGGIRETFTVTRKESYGVGVERTFPVHSPNIDHIEVVTR
RML19_HUMAN 121 TADPYASG-KISQFLGICIQRSRGLGATFILRNVIIEGQGVETCFELYNPRVQEIQVVKL

RL19_BACSU 90 GKVRRAKLYYLR-----ELRGKAARIKEIRR-----
RL19_MYCTU 89 GDVRRAKLYYLR-----ELRGKKAARIKEKR-----
RL19_THET8 92 GRARRAKLYFIRNLSDREIRKRLRADRKRIDQDRAAERAKEEAQAQEPKASQE-----
RL19_ECOLI 90 GAVRKAKLYYLR-----ERTGKAARIKERLN-----
RL19_HAEIN 90 GAVRKAKLYYLR-----ERSGKSARIKERLGA-----
RML19_HUMAN 180 EKRLDDSLLYLRDALPEYSTFDVNMKPVVQEPNQQKVPVNELKVKMKPKPWSKRWERPNFN

RML19_HUMAN 240 IKGIRFDLCLTEQQMKEAQKWNQPWLEFDMREYDTSKIEAAIWKEIEASKRS

L21

```
RL21_ECOLI      1  -----  
RL21_HAEIN      1  -----  
RL21_BACSU      1  -----  
RL21_THET8      1  -----  
RL21_MYCTU      1  -----  
RML21_HUMAN     1  MAASSLTVTLGRLASACSHSILRPSGPGAASLWSASRRFNSQSTSYLPRYVPKTSLSPP
```

```
                                                                *  
RL21_ECOLI      1  -----MYAVFQSGGKQHRVSEGQTVRL-EKL  
RL21_HAEIN      1  -----MYAVFQSGGKQHRVSEGQVVRL-EKL  
RL21_BACSU      1  -----MYAIIKTGGKQIKVEEGQTVYI-EKL  
RL21_THET8      1  -----MFAIVKTGGKQYRVEPGLKLRV-EKL  
RL21_MYCTU      1  -----MMATYAIVKTGGKQYKVAVGDVVKV-EKL  
RML21_HUMAN     61 WPEVVLDPDVEETRHHAEVVKVNEMIVTGQYGRLEFAVVHFAFRQWKVTSEDLILIGNEL
```

```
RL21_ECOLI      26  DIATGETVEFAEVLMIANGEEVKIGVPFVDG--GVIIKAEVVAHGRGEKVKIVKFRRRKHY  
RL21_HAEIN      26  ELATGATVEFDSXLMVNVNGEDVKIGAPVVAG--AKVVAEVVAQGRGEKVKIVKFRRRKHS  
RL21_BACSU      26  AAEAGETVTFEDVLFVG-GDNVKGVNPTVEG--ATVTAKVEKQGRAKKITVFRYKPKKNV  
RL21_THET8      26  DAEPGATVELP-VLLIG-GEKTVVGTVPVEG--ASVVAEVLGHGRGKKILVSKFKAKVOY  
RL21_MYCTU      29  ESEQGEKVSLPVALVVD-GATVTTDAKALAK--VAVTGEVLGHTKGPKIRIHKFKNKTGY  
RML21_HUMAN     121 DLACGERIRLEKVLIVGADNFTLLGKPLLGKDLVRVEATVIEKTESWPRIIMRFRKRKNF
```

```
RL21_ECOLI      84  RKQOGHRQWFTDVKITGISA-----  
RL21_HAEIN      84  RKQOGHRQWFTEVKITGIQA-----  
RL21_BACSU      83  HKKQGHRQPYTKVTIEKINA-----  
RL21_THET8      82  RRKKGHRQPYTELLIKEIRG-----  
RL21_MYCTU      86  HKRQGHROQLTVLKVGTGIA-----  
RML21_HUMAN     181 KKKRIVTTPQTVLRINSIEIAPCLL
```

L22

RL22_MYCTU 1 -----MTAATK
RL22_THET8 1 -----
RML22_HUMAN 1 MAAAVLGQLGALWIHNLSRGKLAGVLPQSYIHTSASLDISRKWEKKNKIVYPPQLPGE

RL22_HAEIN 1 ----METIAKHRYARTSAQKARLVADLIRGKKVAQALEILTFNKKAAALVKKVLESAlA
RL22_ECOLI 1 ----METIAKHRHARSSAQKVRVADLIRGKKVSOALDILTYTNKKAAVLVKKVLESAlA
RL22_BACSU 1 ----MQAKAVARTVRIAPRKARLVMDLIRGKQVGEAVSILNLTIPRAASPIIEKVLKSAIA
RL22_MYCTU 7 ATEYPSAVAKARFVRVSPRKARRVIDLVRGRSVSDALDILRWAPQAASGPVAKVIAASAAA
RL22_THET8 1 ----MEAKAIARYVRI SPRKVRLVVDLIRGKSLEEARNILRYTNKRGAYFVAKVLESAAA
RML22_HUMAN 61 PRRPAEIIYHCRROIKYISKDKMWYLAKLIRGMSIDQALAQLEFNDKKGAKIIEKVLLEAQD

** *

RL22_HAEIN 57 NAEHNDGADIDD-LKVAKIFVDEGPSMKRVM PRAKGRADRILKRTSHITVVVSDR-----
RL22_ECOLI 57 NAEHNDGADIDD-LKVTKIFVDEGPSMKRIMPRAKGRADRILKRTSHITVVVSDR-----
RL22_BACSU 57 NAEHNYEMDANN-LVLSQAFVDEGPTLKRFRPRAMGRASQINKRTSHITIVVSEKKEG--
RL22_MYCTU 67 NAQNNGGLDPAT-LVVATVYADQGPTAKRIRPRAQGRAFRIRRRRTSHITVVVESRPAKDQ
RL22_THET8 57 NAVNNHDMLEDR-LYVKAAYVDEGPALKRVLPRARGRADIIEKRTSHITVILGEKHGK--
RML22_HUMAN 121 MAVRDHNVEFRSNLYIAESTSGRGQCLKRIRYHGRGRFGIMEKVYCHYFVVKLVEGPPPPP

RL22_MYCTU 126 RSAKSSRARTEASKAASKVGATAPAKKAAAKAPAKKAPASSGVKKTPAKKAPAKKAPAK
RML22_HUMAN 181 EPPKTAVAHAKEYIQQLRSRTIVHTP-----

RL22_MYCTU 186 ASETSAAKGGSD

L28

*

RL28_ECOLI	1	-----MSR-VC-QVTGK-----	-----RPVTGN-----NRSHALNA
RL28_HAEIN	1	-----MSR-VC-QVTGK-----	-----RPAVGN-----NRSHAMNA
RL28B_MYCTU	1	-----MSA-HC-QVTGR-----	-----KPGFGN-----TVSHSHRR
RL28_BACSU	1	-----MAR-KC-VITGK-----	-----KTTAGN-----NRSHAMNA
RL28_THET8	1	-----MSK-VC-EISGK-----	-----RPIVANSIQRRGKAKRE

RL28_ECOLI	25	-----	TKRRFLPNLHSHRFWVESEK
RL28_HAEIN	25	-----	TRRRFLPNLHSHRFWVESEN
RL28B_MYCTU	25	-----	SRRRWSPNIQRTYYLPSEG
RL28_BACSU	25	-----	SKRTWGANLQKVRILVNGKP
RL28_THET8	28	GGVGK-----	-----KTTGISKRROYPNLQKVRVRVAGQE

RL28_ECOLI	45	RFVTLRVS--AKGMRVIDKK-----	G--IDTVLA-ELRARGEKY-
RL28_HAEIN	45	RFVTLRLT--AKGMRIIDKK-----	G--IDAVLA-EIRARGEKI-
RL28B_MYCTU	45	RRIRLRVS--TKGIKVIDRD-----	G--IEAVVA-RLRRQGQRI-
RL28_BACSU	45	K--KVYVS--AR---ALKSG-----	K--VERV-----
RL28_THET8	58	ITFRVAASHIPKVYELVERA-----	-----KGLKLEGLSPKEIKKELLKLL

L31

* * *

RL31_BACSU	1	MKAGIHPNFKKATVVKACGNEFETGSVKE--EVRVEICSECHPFYTGKQKFAFASADGRVDR
RL31_THET8	1	MKEGIHPKLVPARIICGCGNVIETYSTKP--EIIYVEVCSKCHPFYTGQORFVDTEGRVER
RL31_MYCTU	1	MKSDIHPAYEETTIVVCGCGNTFQTRSTKPGGRIVVEVCSQCHPFYTGKQKILDSGGRVAR
RL31_ECOLI	1	MKKDIHPKYEEITASCSCGNVMKIRSTVG-HDLNLDVCSKCHPFFFTGKQRDVATGGRVDR
RL31_HAEIN	1	MKQGIHPEYKEITATCSGCVNIKTRSTLG-KDINLDVCGNCHPFYTGKQRVVDTGGRVER

RL31_BACSU	59	FNKKYG---L---K-----
RL31_THET8	59	FQRRYGDSYR---KGR----
RL31_MYCTU	61	FEKRYGKRKVGADKAVSTGK
RL31_ECOLI	60	FNKRFPNIPGS---K-----
RL31_HAEIN	60	FNSRFKIPST---K-----

L31B

**

RL31B_ECOLI	1	MKPNIHPEYRTVVFDHDTSVDEYFKIGSTIKTDREIEL-DGVTYPYVTIDVSSKSHPFYTG
RL31B_BACSU	1	MKEGIHPKNHKVIFQDVNSGYRFLSTSTKTSNETAEWEDGNTYPVIKVEVSSDTHPFYTG

RL31B_ECOLI	60	KLRTVASEGNVAREFTQRFGRFVSTKKGA
RL31B_BACSU	61	RQKFNEKGRVEQFKKRYN-----MGK