Multiple sequence alignment of RNPP-family regulators.

Block 1 — HTH motif indicated above (dashed line); `◦◦◦◦` markers below.

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                            -------------------------------- HTH --------------------------------
RapE B. thuringiensis     1 --------------------------------------------------MGAYIMSVSVKGNEQLTSLLNDWYRAMLSQQVIKATNLKKKIDEKINKLSIEPDQEHQDQNLLL  64
RapA B. thuringiensis     1 --------------------------------------------------MGADVVTREQMKHSLDDWYRVMLQQNIEKATEMKEEIDNKISGLDV-------DQELSL  52
RapC B. subtilis          1 ------------------------------------------------MKSGVIPSSAVGQKINEWYRYIRTFSVPDAEVLKAEIQQELKHMQH--------DSNLLL  52
NprR B. thuringiensis     1 MQQTLEKIGKQVFYKRLQQKMTQEELCQGICSVSYLSKIEN-GKIEASEEILQLLCARLEIAVTDLRDVEEDVKGKLDEWLNALVHDLKPQVERIYEELQGEMKHVL---DFEIIN 112
T reg E. faecalis         1 ----------MNSLGAVIKEIRKNRKLTQKMLSEDICSQSVSLSRIEN-NEELPNVLVMQQLCDRLGV--TVDQIMRYKS                                    66
DNAbd B. anthracis        1 ------MEFYDLGITIKELRIKKNISQSELCHGICSQSQISKIEK-GVIYPSSILLYQLSERLGI--DPNNIFALTQN                                       69
PlcR B. thuringiensis     1 ------MQAEKLGSEIKKIRVLRGLTQKQLSENICHQSEVSRIES-GAVYPSMDILQGIAAKLQI--PIIHFYEVLIY                                       69
PrgX E. faecalis          1 ------MFKIGSVLKQIRQELNYHQIDLYSGIMSKSVYIKVEA-DSRPISVEELSKFSERLGV--NFFEILNRAGM                                        67
TraA E. faecalis          1 -------MHLNELMKIQRKSEKLSQAKFYEGIFQRNSASLFENHNEHFLKIADLPILADRSNL--TIPEIIRTCNE                                        67
T act L. monocytogenes    1 ------MVAYGELIREVRLSKGLTQKEVYTGVISKSYAIGFEK-GKHDITLVLFEEILERVML--SSDEFFFMNRG                                        67
T reg L. casei            1 -------MEKIGELINHFRENKGMSQAELSGIKSKAQLSKFER-DLTKISVDKFLALLERLHV--TFTEFGNALAI                                        67
RggD S. gorondii          1 -------MTQLGQVFRFFREARHISLSEATGGEFSKSMLSRFEN-GQSELSAQKLFSALSAIHT--ETEEFTVAAGI                                        67
MutR S. mutans            1 MKVNQSMELGELYRELRIARGLKIKDIACKNLSKSQLSRFEN-GQTMLAADKLLLAISGIHM--SFSEFGYALSH                                         72
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Block 2 — `*`, `-` markers below.

```
RapE B. thuringiensis    65 YYSLLEFRYKVLTDSL-------GIQQNSFDTISDYDMPTDQFLRFYYHFFKSIHSTFISN--Y-TEAEEHYKLAEKILVAIPDEIEHAEFYYRIATFYHHT-YNNL-ASIEYANKSR 170
RapA B. thuringiensis    53 YFTLLDFRYKMLTDWL-------NIKENSFERIESFEIPTKGFLAYYYHFFKGIYCTSMSK--Y-SDAKESYEKANKLLKYASHSLENAEFDYRMGNFYYQT-YQQV-NAIDYLRKAK 158
RapC B. subtilis         53 YYSLMEFRHQLMLDYLEPLEKLNIEDQPSLSELSRNIDSNQADLKGLLDYYVNFFRGMYEFDKRE--F-ISAITYYKQAEKKLSFVADHIERAEFYFKLAEAYYYM-KQTY-FSLINIKNAY 169
NprR B. thuringiensis   113 YYKKLLYTRYLMMKRDL------------PAVEEELERLKKVYKKYSPFQKMLYTYNKALLYSVQYK--Y-TQALEYILKTEAMAKELG-YYETGIYNNLATTYSQM-EIDH-MTLYFANVAL 216
T reg E. faecalis        67 ----------------------------GDVHVVTYSFEKMAEYFRHKK--Y-QLLLNYLKENRI-EEQLY-LDTDWQKYYYLGSCEL-FVLND-YEKAIASLR 136
DNAbd B. anthracis       70 -----------------------------KKFKYTENVKCIMKDCIRQHQ--Y-KELYEIVTKEKNL-NNFRMKEDKQFLIWHEAIAIYRV-NNL-IKTALTLLN 139
PlcR B. thuringiensis    70 -----------------------------SDIERKKQFKDQVIMLCKQKR--Y-KEIYNKVWNELKK-EEYH-PEFQQFLQWQVYVAAYVLK-SEYC-ILELK 139
PrgX E. faecalis         68 NTKSVNETGKEKLLISKIFTNPD--LFDKNFQRIEPKR---LT-SLQYFSIYLGYLSIAHHYNIEVPTFNKTITSDLK 139
TraA E. faecalis         68 ----------DFKSVFDKDLETYYFVLSKIQQNPDSEYNQELYSLYQKSI--HEKFT-SLKYMNLYLLIKLQTSSLISEI-IVDKQDLADIK 146
T act L. monocytogenes   68 --------------YSLAEEDNFWYKFANAANQKSLADLQELYQEVLQGTQDRANLRKAIYHSRMEINQFLINNRFDVSIVSEKDKAVIQT 145
T reg L. casei           68 ------------QERLYEQAILEDITKAVINNNK-DQAGLVKERAEQHL--KKHH-GKYNQLTLIMVKAMICDM-EKGT-LPKADTKVLA 139
RggD S. gorondii         68 -----------QDHHSHKELLNQIQELLQTNQLNLLEKLYLEKKKIS--QKSK-ESNDWVERLIVKAYLCAL-KESEKASPDELDFLH 140
MutR S. mutans           73 ----------YEESDFFKRGHKLSELYAQKDIKGLKKLLEFNDNHE----VF-DVYNRLNKLVIQVTIHLLDTDYI-ISDDDKNFLT 143
```

Block 3 — `**  *  **` and `*  **  **` and `*` markers below.

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RapE B. thuringiensis   171 AIFSKYE-GYEV--KTAFCNSLLGGCCIYLK-Q-YEQAEEYLHCAIDLLQK---N--REEDSLLYVKNTMGWLYSDQSMSTLAIRHLSEVTEK------IPT--HFKAIFLQAKEHYKLG 272
RapA B. thuringiensis   159 EEFKKHI--GCEI--NIALCENAFGLCCVDLK-N-YELAEESFNAAMDIFQK---V-NYEKYILMVRHNLAFLYASQ-DLSELAVRHASEVTKKQ-----PK--FFKALFVEARECYKLG 260
RapC B. subtilis        170 EIYVEQE--TYNV--RIIQCHFVFGVNLMDER-N-FEQAARHFKLALNMAQA---E-QKAQLVGRAYYNLGLCYYNQ-DLLDPAIDYFEKAVSTF-ESSRIVNS--LPQAYFLITLIYYKQG 277
NprR B. thuringiensis   217 EGFKSEY--KFR--NIINCKFLIAFSYTRKK-Q-YNEAMEIYNHIIREATSF--A-DKDNILSIALNIGYLYYRQ-KNYTKAKEYYIECLKY--KKEEDMN--YIDAMYELSLQCIQLG 322
T reg E. faecalis       137 KGLSFTYKAD-KLNVSDLEIQLISCLGATYGYMGNRVEAERFLSLSIHYFNQLPNERS-NAELTKIIFFNYADFLFKN-YTEKDAEIYVDQGITWARKKNSYT--LSELLNLKYLVLMRKN 252
DNAbd B. anthracis      140 NALKIVTVNIDFLTEREIDIMQTMAIFHAENK-E-YKESINILKRCLNNFDKL-DFPRDKEIKLKIINLAKCLNYT-YQYEEAKKYIDKGIKLAINLNTLYL--LGELYYEKGSNLLKLE 252
PlcR B. thuringiensis   140 KLLNQQLTG-IDV-YQNLYIENAIANIYAENG-Y-LKKGIDLFEQILKQLOEAL-HD--NEEFDVKVRYNHAKALYLD-SRYEESLYQVNKAIEISCRINSMAL--IGQLYYQRGECLRKLE 250
PrgX E. faecalis        140 HLYDK--RTTF--FGIDYEIVSNLLNVL---P-YEEVSSIKPMYPIVDSF-GK-DYDLTIQTVLKNALTISIMN-RNLKEAQYYINQFEHLKTIKNISINGYYDLENYLKQIYQFLTD 248
TraA E. faecalis        147 KMFSS--SKRF--VLYHYKILSNLCTIF---P-YSDLQTLIEQLFPLREDS-DE-QIKDTACLSLSNAIALSIFT-KDYSSCFILLNHFETLLS-NYTSY--KYKLSFIASRNMLLYFTS 252
T act L. monocytogenes  146 YLWK---VQSW--TLEEIRIFANSVDYF---E-EDVQIYFFQLVKSLEKYKHYDRGKKVFSTLLSNIIEELITR-NQLEYAAQLLEILHELSSTHDCA--FYRIMHNYYQGLIWMKND 252
T reg L. casei          140 DYLFS--VDGW--THFELLLFGNTMSAL---S-LVTVNQLAEVLAAQINEAWAIHQNFQLTINLLYNVVILNLSA-KDLTTARLFLRVMKHSHV-EDSMM--AERYLIALADAYCYGE 247
RggD S. gorondii        141 DYLFS--VDIW--GRYELKFSICTPVL----F-LDLFSQYTKEILSRNDFTALFANNRNTLHTTFLNGYLLAISQ-ENIAHADYFQQVIERHFY-EENET--YFRIVYLFAQGELACLKG 248
MutR S. mutans          144 TYLYN--IEEW--TEYELYIFGNTMSIL---S-SDDLIFLGKAFVERDKLYISLPSHKKNAELTFLNLILILLER-KKLYQAIYFVENLEKLL-NYQDM--FAITFLKFLKKIITYFHD 250
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Block 4 — `*` marker below.

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RapE B. thuringiensis   273 E--QSTASQLIDKGLQICRKIHNE-EYTHHFSILKRLN-ENIPLEELEKIIQEGILYFKEEELWEYVVEYAELFATKCRQLENHQKVSDYFHICYQARQKSIAKGVLK---- 376
RapA B. thuringiensis   261 Q--YQLAADLVEKGLDICKELNKE-EFQYRFMILKSVN-EKSPTLSLEQVVLEGIIYFKEEELWECIQEYAAEMLALRFYKEENHKASHYFYMSHKAQKNLLKKGALK---- 364
RapC B. subtilis        278 K--HDKASEYHKRGYEYAKETDDA-DYAVKFEFLQSLY-QDQPN--EEGIERCFQYLKNKNMYAD IEDLALEVAKYYYEKKWFKLSASYFLQVEEARKQISEGLYEIEI 382
NprR B. thuringiensis   323 E--IIEEAAKWIEKGIIAARKDDRYKGMLYLLLSLRYKHFEERDVY-KKFLEIEVVPFFKAEENIKDLKKIYLELAEYLEECSDFKESNRYYKLAINLLEE 419
T reg E. faecalis       253 E--HEEAERYLNLAQQMKNVE-SG-NL-                                                                              275
DNAbd B. anthracis      255 QSNKEEVADNMKTALFIFELT-KN-EKKLQIIKEGYFEKHCN                                                                294
PlcR B. thuringiensis   251 YE-EAEIEDAYKKASFFFDIL-EM-HAYKEALVNKISRLE                                                                  287
PrgX E. faecalis        249 KN-IDSYLNAVNINIFKII---GK-EDIHRSLVEELTKISAKEKFTPPKEVTMYYENYVAIENNPIPEIKEQS                                 317
TraA E. faecalis        253 GD-TEHIMKVFSYVEILKVQ--ES-PEYVEGLHKISKSDDEKAKQIFGVLDDDGQVLDPKNFDHKKID                                      321
T act L. monocytogenes  253 QV-EQGLKESKSAIRILDVL--DY-KSLAQLYNTLLQQFLEKENIQIV                                                          296
T reg L. casei          248 PT-VEHENNVKRMIEIQKEI--GS-TNFFVAFNNQAKMFISETKISSNDSAGNV                                                    297
RggD S. gorondii        249 QK-KEGLAQMEKAVDIFQILNCQHSADLFQEALEAAFQKYSK                                                                289
MutR S. mutans          251 KS-VDMSELEHYINIVEEI---N-PTIASILKSNLNQLL                                                                   284
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