

A -

**N-terminal domain**

```
Bsub --MFVDQVKVYVKGGDGGNGMVAFFREKYVPKGGPAGGDGKGGDVVFEVDEGLRTLMDF 58
Ecoli -MKFVDEASILVVGADGGNGCVSFRREKYIPKGGPDGGDGGDGVWMEADENLNTLIDY 59
Ttherm --MFQDVLVITVAAGRGGDGAVSFRREKFVPKGGPDGGDGGRGGSVYLRARGSVDSLRL 58
MsTS- MAKFIDQVKIMLKAKGGDGMISFRREAHVDKGGPDGGDGGTGGNIYFVADLGKNTLLSF 60
MsTS+ MAKFIDQVKIMLKAKGGDGMISFRREAHVDKGGPDGGDGGTGGNIYFVADLGKNTLLSF 60
Mmc -MKFVDFADLIKAKGGDGAVSFLHALFVFNPPGGDGGDGGDGGSVYFLGDEGKHSLLDL 59
* * : : . * ** : * : * : : : : * * * * * * * * : : . : *
```

**80 85**

```
Bsub RYKKHFKAIRGEHGMSKNQHGRNADVMVIKVPVGTVVTTDDDTKQVIADLTEHGQRAVIAR 118
Ecoli RFEKSFRAERQNGASRDCTCKRKGKVTIKVPVGTTRVIDDQGTGETMGDMTKHGQRLLVAK 119
Ttherm S-KRTYKAEDGEHGRGSQQHGRGGEDLIEVPRGTTRVFDADTGELLADLTEEGQTVLVAR 117
MsTS- YKNKFI IAEDGVKGGPKNLYCAKGGKDTIVKVPLGTLVYKNNK--IVADVIKENHLYLVAK 118
MsTS+ YKNKFI IAEDGVKGGPKNLYCAKGGKDTIVKVPLGTLVYKNNK--IVADVIKENHLYLVAK 118
Mmc KLQKYSQAQDGFKGDINKMHCAKGEKIKIVPVGTILYDKTNTILADINENNKLVLIK 119
: : * * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * :
```

**124 G1**

```
Bsub GGRGCRNSRFATPANPAPQALSENPEFGKERYIVLELKVADVGLVGFPSVKGSTLLSVV 178
Ecoli GGWHCLGNTRFKSSVNRTPRQKTNGTPEGDKRELLLELMLIADVGLMGMPNAGKSTFIRAV 179
Ttherm GGAGCRNMHFVSPTRQAPRFAEAGEEGEKRRRLLELMLIADVGLVGYPNAGKSSLLAAM 177
MsTS- GGKGCRRNNKFKTSKNTAPRIAENGMPGEKYEANIVLKII SDVGLVGLPSCGKSTLLNAL 178
MsTS+ GGKGCRRNNKFKTSKNTAPRIAENGMPGEKYEANIVLKII SDVGLVGLPSCGKSTLLNAL 178
Mmc GGKCCGNARFANSRNRKAPTIFEAELGQEFELRAELKVIADVGFVGLPNAGKSTLLRAI 179
** : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * : * :
```

**Switch I G2 G3 Switch II**

```
Bsub SSAKPKIADYHFTTLVFNLMGVETDDGRSFMADLPGLIEGAHQGVGLGHQFLRHIERTR 238
Ecoli SAAKPKVADYPTTLVPSLGVVRMDNEKSFVADIPGLIEGAAEGAGLGIRFLKHLERCR 239
Ttherm TRAHPKIAPYPTTLSPNLGVVEVSDEERFTIADIPGIEGASEGKGLGLEFLRHIAATR 237
MsTS- SNAKAKVAEYEFHTLVPQLGLVKYYDY-SYTIADLPGLIKGASLGKGLGIQFLRHIERCK 237
MsTS+ SNAKAKVAEYEFHTLVPQLGLVKYYDY-SYTIADLPGLIKGASLGKGLGIQFLRHIERCK 237
Mmc SNSKPVVADYPTTITPQLGVARTKNNDTFIVADLPGLIQGASLGKGLGHQFLKHIERCL 239
: : : : * * * * * : * : * : * : * : * : * : * : * : * : * : * : * :
```

**244 GTP-binding domain G4**

```
Bsub VIVHVIDMSG-LEGRDPYDDYLTINQELSEYNLRLTERPQIVANKMDMP---EAAENLE 294
Ecoli VLLHVIDIDP-IDGTDPEVENARI IISELEKYSQDLATKPRWLNVFNKIDLLDKVEAEKAK 298
Ttherm VLLYLDA-----DEPLKTLKTLRKEVGAYDPTLLRRPSLVALNKVDLL---EEEVVK 288
MsTS- VVIHIVDFGS---PDKDSIQSYETIQKELESYKLNLTQKQPQLVVANKSDLA---NFKNNI- 291
MsTS+ VVIHIVDFGS---PDKDSIQSYETIQKELESYKLNLTQKQPQLVVANKSDLA---NFKNNI- 291
Mmc VICHVIDASGNPFGSEDIKNYELIRDELKAYNLNLEKRPEIIVLNKMDLD---EAQLNLL 296
* : : * : : : : * : * : * : * : * : * : * : * : * :
```

**G5**

```
Bsub AFKEKLTDG-YPVFPISAVTREGRLLELFEVANQLENTPEFPLYDEEELTQNRVMYTMEN 353
Ecoli AIAEALGWE-DKYYLISAASGLGVKDLCDVMT-----DWDDWDE-----FIEN 335
Ttherm ALADALAREGLAVLPSALTAGLPAKALHALVRSTP-----PEMPKPVPR 337
MsTS- -EKFKAKYPNIEIEISALNYHNVENLKKIIEWFLEKTSHLQIKIED--DFETEVEKIN 348
MsTS+ -EKFKAKYPNIEIEISALNYHNVENLKKIIEWFLEKTSHLQIKIED--DFETEVEKIN 348
Mmc DEKIINYFKDKKVVRIISGLKKENIDQLLFMIYEELKVAKKQPLWELDKNNDQDEIAIYKF 356
: * . . . : * :
```

**C-terminal domain**

```
Bsub EEVPF--NITRDPDGVFVLSGDSLERLFKMTDFSRDESVKRFARQMRGMGVDEALRERGA 411
Ecoli PVVQA--EAKQPEKVEFMWDDYHRQLEEIAEEDDE-----DWDDWDE--DD 380
Ttherm KEVQAGVEVVPVAEGVYEVRAPEVERYLARIKGDLMEAAAGYLQEVFRRHGVEAALRAKGV 397
MsTS- EP---DFVIQKMNRNHFVTKGKIEELVVKIPINTFDNLMRFNNILKKGIVWETLIKRD 405
MsTS+ EP---DFVIQKMNRNHFVTKGKIEELVVKIPINTFDNLMRFNNILKKGIVWETLIKRD 405
Mmc EEQKEDIQVYKGNRWEIAGETIFKIYQKFPITWEDNLLMFNEKLEKTVYETLVKGGI 416
: : : : : : : : : : : : : : : : : : : : : : : : : : : :
```

**428 433**

```
Bsub KGDIIIRLLEFEFEFID-- 428
Ecoli EEG-----VEFIYKR---- 390
Ttherm RAGDLVRIGGLEFEYIPEV 416
MsTS- QKGDLEVIYQHKFEWEEEL 424
MsTS+ QKGDLEVIYQHKFEWEEEL 424
Mmc KKGDFVKVDFYELEWTD-- 433
. * : :
```

**B -**

<b>Percentage of identity</b>	<b><i>Mmc</i> Whole aa sequence</b>	<b><i>Mmc</i> Obg N-term part</b>	<b><i>Mmc</i> Obg GTP binding domain</b>	<b><i>Mmc</i> Obg C-term part</b>	<b><i>Mmc</i> Obg N-term part + GTP binding domain</b>
<b><i>M. synoviae</i></b>	44.89	51.25	48.72	34.69	50
<b><i>B. subtilis</i></b>	41.82	47.83	51.85	17.14	49.85
<b><i>E. coli</i></b>	41.87	43.21	45.68	22	44
<b><i>T. thermophilus</i></b>	37.7	46.25	41.40	17.71	43.85