



Structural Motifs Using Random Fields (SMURF)

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6-bladed

```
>YBL104C
Raw score: -0.2171
P-value: 0.05631

-----atvvtetvyrepaidsqgrafatssn----g-killldl----tgskkvlf
          BBB|||BBBBBB|||BBBBBB|    |||BB|||
MGLIKKVT-----HWSYDNLIDYLSVNPTRDEVTHYKVDPENESDESIKLT

pddnpspaviyd----ntgkllvvtrpt-nglviytlkw-----ekkt diga---iald
|||||BBBBB|    |||BBBBBB|||BBBBBB|||    |||||    |||
VKDFGSITCL-DYSESEIGMIGVGEKNGYLRIFNISGQNSSSPASHAPVGLNANNETSMT

nvndgafdtlkgalyvtdr-kvgsvyifyldsgkvtpfkgl si-ngiaispdgtlyir
||||BB|    |||BBBBBB|    |||BBBBBB|||BB|    |||||    |||BBBB|    |BBBBB
NASGGKAAQAENIVGSVSNLKD TQGYPVSETNYDIRVRAKKQRCINSLGINTN-GLIAMG

ett-----rnkiwkfel-----gtslvlk-datgpvgisvdsdgtlyvasgrsniary
B||    ||BBBBBB|    |||||    |||||BBBB|    ||BBBBB|    BBBBB
LDRNKHDSSLQIWD MN YHDDSHETINPMFSYCTNESIVSLKFLNDTSVLAASTK-FLKEI

kls--kdivqiespgkstysavspf-----dgsvlvessn-----sslyiln
B||    |||BB|    |||||BBBB|    |||BBBBBB|    |||BBBBB
DVRSPNPIYQHPT-RLTYDIKLNPFNDWQFSTYGDDGTLAIWDRRKLSDQASLGDLNVA

we-----
||
PLLTFEKLVGSGAASRKYMNSCFRWSCVRNNEFATLHRGDTIKRWRLGYCYCDSNRDIAAD

-----

DDNEMNIENLFVSSVH
```

```
>YBL104C
Raw score: 15.1542
P-value: 0.01016

-----dveieapaygsavilgdssllllias--sgqvyvwdlv-----
                                     BBBBBB  ||BBBBBB||
MGLIKKVTHWSYDNLI-----DYSVNPTRDEVTHYKVDPENESDE

tlkvtqrplrsivssvafspdg-dkvavag-dgrvalydle--a-kftaeapgv---
||||BBBBB| ||||BBBBB| ||| BBBBBB ||BBBBBB| | |||||
SIKLTHTVKDFGSITCLDYSESEIGMIGVGKNGYLRFNISGQNSSSPASHAPVGLNAN

-----talavskdgnkvvvvgssd--galsvldlegtptvv-elsdgvtsvldldperg
      |BBBBB| ||||BBBBBB| ||| ||BBBBBB| ||||BB| ||||| |BBBBB| ||||
NETSMTNASGGKAAQAENIVGSVSNLKDQTQYPVSETNYDIRVRAKKQRCINSLGINTNG

tlyaga-k---dgsiqvfdss---ksvaavtg-----kespravafspntglyvlsegk
|BBBBB| | ||BBBBB| ||| ||BB||| ||||BBBBB| |||BBBBBB| |B
LIAMGLDRNKHDDSSLQIWDMMNYHDDSHETINPMFSYCTNESIVSLKFLNDTSVLAASTKF

vcvidlddsevtvlrgeda-ltaiavsp--asvlyaatsdgtvylwdatkkckrvdalan
BBBBB| | ||||| ||||| ||BBBBB| |||BBBBB| ||||BBBBB| ||||| |||||
LKEIDVR-SPNPIYQHPTRLTYDIKLNPFNDWQFSTYGGDGTAIWD--RRKLSDAQSLG

ds-vssvavddkplyvgts---gri-viidle-----
|| |||BBB| |||BBB| ||| |||BBB| |||
DLNVASPLLTFEKLVGSGAASRKYMNSCFRWSCVRNNEFATLHRGDTIKRWRLGYYCDSN

-----

RDIAADDDNEMNIENLFVSSVH
```

8-bladed

```
>YBL104C
Raw score: -104.2041
P-value: 0.19648

fedlsellikildln----svdekskv-kvdstkndlsvsdg----rfilveyqvksdas
      BBBBBBBBBB      BB||||| ||||| BBBB|||      |BBBBBB|BB|BBB
-----MGLIKKVTHWSYDNLIDYLSVNPTRDEV-T-HYKVDPENESDESIIKLHTVKDFGS

idiidl--akrqliteiikisnealvevskdk-vlvgasvrndiavkdeksleskrivft
BBBBB|   ||BB||||||| |||BBBB||| BBBB|||BBBBB|||   BB|||
ITCLDYSESEIGMIGVGEKNGYLRIFNISGQNSSSPASHAPVGLNANNETS---MTNASG

rgtykiveyrqsaliys--gevdllayaskedlieysfktvrvpyp--aetvkvfvnak
|   |||BBB||BBB|   |||BBBBBBBB|BBBBBBBBBBBBB||   ||BBBBBBBB|
G---KAAQAENIVGSVSNLKDTQGYPVSETNYDIRVRAKKQRCINSLGINTNGLIAMGLD

sitnltstaiqadhylndvtwseqkllslaarr--ssivdvldrde-----rdlsvadkv
|||||BBBB| |BBB|BBB||| |BBBBBBBB BBBB|BBBBB||   BBB|BBBB
RNKHDSQLQIW-DMNYHDDSHETINPMFSYCTNESIVSLKFLNDTSVLAASKFLKEIDV

dsdwvrkrpngedaftvdgkvfykiis-klgsiklfqaikgevaelteefsvigiealas
B||||||| |||BB||| |BBBBBBB |BBBBBBB||   BB||||||BB|BB|
RSPNPIYQHPTRLTYDIKLNPFNDWQFSTYGDDGTIAIWD---RRKLSDAQSLGDLNVA

dylyyit--adrsvkaidldldkltvklk-vvsqpfsnrakyvalrvgggs-llvvvs
|BBBBBB |||BBBBB||| |BBB||| |BBBBB||| |BBBBB||| BBBB
PLLTFEKLVGSGAASRKYMNSCFRWSCVRNNEFATLHRGDTIKRWRLGYYCDSNRDIAAD

skt-lkgkavle----
||| |BB|BB|
DDNEMNIENLFVSSVH
```

6-6-bladed

```
>YBL104C
Raw score: -196.7528
P-value: 0.98079

-atvvvtetvyrepaidsqgrafatss-n-gkillldltg-skkvl-frpddnpspaviyd
      BBB| BBBBBB| | |BBBBBB| | |BB| | | | | | | |BBBB
M-----GLIK--KVTHWSYDNLIDYLSVNPTRDEVTHYKVDPENESDESII--

ntgkllvvtrptnglviytlkwekktdigaialdnvndgafdtlkgalyvtdrkvgsvyi
      BBBBBB| | |BBBBBB| | |BB| | | | | | | |BBBB
---KLHTVKDF-GSITCLDY-----SESE--IGMIGVGEKNGYLRI

fyldsgkvtpfkglsingiaispdgtlyirettrnkiwkfelgtslvlkdatgpvgis
BB| |BB| | | | | | | | | | | | | | | | | | | | | |BB
FNI-SGQNSSSPASHAPVGLNANNE-TSMTNAS--GGKAAQAEN-----IVGSV

vds-dgtlyvasgrsniaryklskdivqiespgkstysavspfdgsvlvess----nssl
BB| | | | | | | | | | | | | | | | | | | | | | | |BB
SNLKDTQGYPVSETNYDIRVRA----KKQRC-INSLGINTNG---LIAMGLDRNKHDSSL

yilnweatvvvtetvyrepaidsqgrafatssngkillldltgskkvlfrpddnpspaviy
BBBB| | | | | | | | | | | | | | | | | | | | | | | |BB
QIWDMMNYHDD-----SHETINP--MFSYCTN-ESIVSLKFLNDTSVLAA-----STKFL-

dntgkllvvtrptnglviytl-kwekktdigaialdnvndgafdtl--kgalyvtd-rkv
      |BBBBBB| |BBBBBB| | | | | | | | | | | | | |BB| | | | | | | |
---KEIDVRSPN-PIYQHPTRLTYDIK-----LNPFNDWQFSTYGDDGTLAIWDRKRL

gsvyifyldsgkvtpfkglsingiaispdgtlyirettrnkiwkfelgtslvlkdatg
|BBBBBB| |BB| | | | | | | | | | | | | | | | | | | | | |
SDQASLG--DLNV-----ASPLLTFE--KLVGSG---AASRKYMN-SCFR-----

pvgisvdsdgtlyvasgrsniaryklskdivqiespgkstysavspfdgsvlvessnssl
      BBBB| | | | | | | | | | | | | | | | | |BB| | | | | |BB
---WSCVRNNEFATLHRGDTIKRWRLGYCDSNRD-----IAADD--DNEMNIE---NL

yilnwe
BBBB| |
FVSSVH
```

6-7-bladed

```
>YBL104C
Raw score: -232.5815
P-value: 0.98032

-atvvvtetvyrepaidsqgrafatss-n-gkillldltg-skkvl-frpddnpspaviyd
      BBB|  BBBBBB|  |  BBBBBB||  |  BB|  |||||  BBBBB
M-----GLIK--KVTHWSYDNLIDYLSVNPTRDEVTHYKVDPENESDESII--

ntgkllvvtrptnglviytlkwekktdigaialdnvndgafdtlkgalyvtdrkvgsvyi
      BBBBBB||  BBBBBB|  BB||  BBBBBB||  BBBBB
---KLHTVKDF-GSITCLDY-----SESE--IGMIGVGEKNGYLRI

fyldsgkvtpflfkglsingiaispdgltyirettrnkiwkfelgtslvlkdatgpvgis
BB|  ||BB|||||||  BBBBB|  BBBBBB  |BBBBBB|  ||BB
FNI-SGQNSSSPASHAPVGLNANNE-TSMTNAS--GGKAAQAEN-----IVGSV

vds-dgtlyvasgrsniaryklskdivqiespgkstysavspfdgsvlvess----nssl
BB|  ||BBBBBB||  BBBBBB|  BB||  ||||  BBBBB|  BBBBBB|  |BB
SNLKDTQGYPVSETNYDIRVRA----KKQRC-INSLGINTNG---LIAMGLDRNKHDSSL

yilnwe-dveieapaygsavilgdssllliassgqvvywdlvtlkvtrqlprlsivssva
BBBB||  |  |||||  BBBBBB|BBBBBB  BBBB|  |BBB
QIWDMNYH-----DDSHETINP--MFSYCTNESIVSLK-----FLNDT----SVLA

fspdgdkvavagdgrrvalydleakftaeapgkvthalavskdgnkvvvvgssdgalsvldl
B||||  BBBBBB|  BBBBBB|  |||||  BBBB|  ||BBBBB||  BBBBB|
ASTKFLKEIDVRSPNPIYQHP---TRLTYDIK---LNPFN--DWQFSTYGDDGTLAIWDR

egtptvv-elsdgvtsvdldpergtlyagakdgsiqvfdssksvaavtgkespravafsp
      BB|  ||  BBBB|  BBBBB  BBBBB|  BB|||||  BBBBB|
----RKLSDQ-----ASLGD-----LNVAS---PLLTFE-----KLVGSGAASRKYMNSC

ntglyvlsegkvavidlddsevtvlrgedaltaiavspasvlyaatsdgtvyldatkk
|  BBBBBB|  BBBBBB||  |  ||BBBB  BBBB||  BBBBB|
F-RWSCVRNNEFATLHRGD-----T-IKRWRL-----GYCDSNRDIAADD-----

ekrvdalndsvssvavddkplyvgtsgriviidle
      |||  |  BBB  BBB  BBB  |
-DNEM-N-----IEN---LFV-----SSV--H
```

6-8-bladed

```
>YBL104C
Raw score: -546.7904
P-value: 0.99762

-atvvvtetvyrepaidsqgrafatssngkilllldltgskkvlfprddnpspaviydtngk
      BBB| BBBBBB| |BBBBBB  BB      |BBBB  B
M-----GLIK--KVTHWSY-DNLIDYL-----SV-----NPTRD-----E

llvvtrp---tnglvitytlkwekktdigaialdnvndgafdtlkgalyvtdrkvgsvyif
BBBBB||  ||BBBBBB|      BB||  BBBBBB  BBBBB
VTHYKVDPENESDESIIKL-----HTVK---DFGSIT----CLDYS

yldsgkvtpflfkglsingiaispdgltyirettrnkiwkfelgtslvlkdatgpvgisv
B|  BB||      BBBB|||BBBBBB|||BBBBBB|      ||||BBB
ES---EIGM-----IGVGEKNGYLRFNISGQNSSSPAS-----HAPVGLNA

dsdgtlyvasgrsniaryklskdivqiespgkstysavspfdgsvlvessnsslyilnwe
B|||BBBBBB| |BBBBBB|  BB|||      BBBB| ||BBBBBB  BBBBBB|
NNETSMTNASG-GKAAQAEN----IVGSV-----SNLKD-TQGYPVSE---TNYDIRV-

fedlsellikildlnsvdekskvkvdstkndlsvsdgrfilveyqvksdasidiidlakr
      BBBBBBBBBBBB  |      |BBBBB  BBBBBB|BB|BBBBBBBBB  |
-----RAKKQRCINSLG-----I-----NTNGL-----IAMGLDRNKHDSQLQIWD---M

qliteiikisnealvevskdkvlvgasvrndiavkdeksleskrivftrgtykiveyrqs
BB|||      BBBB|||BBBBB  | |BBBBB  BB      BBB||
NYHDD-----SHETINPMFSYCT--NESIVSL-----KF-----LNDTS

aliysgevdllayaskedlieysfktvrpypaetvkfvvnaksitnltstaiqadhyl
|BBB|||  BBBBBBBB|BBBBBBBBBBBBB|  BBBBBBBB      BBBB|  BBB
VLAASKT--FLKEIDVRSPNPIYQHPTRLTY---DIKLNPFN-----DWQFS--TYG

ndvtwseqkllslaarrssivdvldrderdlsvadkvdsdwvrkrpngedaftvdgkvfy
|BBBBB  BBBBBBBBBBBBBBBBBBBB  BBB| |BBBBB      BB  BBB
DDGTL----AIWDRRKLSDAQSLGDL--NVASPLLTFE-----KL-----VGS

kiisklgsiklfgaikgevaelteefsvigiealasdylyitadrsvkaidlkldklklt
BBBBB| |BBBBBBB      BB      BB|BB  BBBBBB| |BBBBBB      BB
GAASRKYMNSCFR-----WS-----CVRNN---EFATLHRGDTIKRWR-----LG

vlklkvvsqpfsnrakyvalrvggsgllvvvssktlkgkavle
B      BBBBBB|  BBBBBB  |BBBBBB  | |BB|BB  |
Y-----YCDSNR----DIAADD---DNEMNIE--NLFVSSV-H
```

7-6-bladed

```
>YBL104C
Raw score: -292.4823
P-value: 0.99883

dveieapaygsavilgdssllliassgqvvywdlvtl-kvtqrlplrsivssvafspdgd
      |||||      BBBBBB|BBBBBB| || | ||BBBB| |||||BBBB| |
-----MGLIKK---VTHWSYDNLIDYLSVNPTRDEVTHYKVDPENESDESII---

kvavag-dgrvalydleakftaeeapgkvtalavskdgnkvvvgssdgalsvldlegtpt
BBBBBB |BBBBBB|      |||||      BBBB| |||BBBBB| |||BBBBB| |B
KLHTVKDFGSITCLDY-----SESEIG---MIGVGEKNGYLRIFN-ISGQNSSSP---AS

vvelsdgvtsvldldpergtlyagakdgsiqvfdssksvaavtgkespravafspn-tgly
B|||      BBBB| ||| |BBBBB |BBBBB|      BB| |      BBBB| ||| |BBB
HAPV-----GLNANNET-SMTNAS-GGKAAQAE-----NIVG-----SVSNLKDTQGYF

vlsegkvccvidlddsevtvlrgedaltaiavspasvlyaats----dgtvyldwatkkke
BBB|BBBBBB| |      ||| |BBBB| |||BBBB| |      |||BBBB| |||
VSETNYDIRVRAK-----KQRC-INSLGINTNGLIAMGLDRNKHDSLSQIWD---MNY

krvdalndsvssvavddkplyvgtsgriviidleatvvtetvyrepaidsqgrafatssn
||||||| |||BBB      BBB      |||BBB      BBB|||BBBBBB|
--HDDSHETINPMFS---YCT--NESIVSL-----KFLNDTSVLAAST-

gkillldltgskkvlfrrpddnpspaviydnrtgkllvvtrptnglviytlkwekktdigai
|BBBBBB      BB|||      BBBB      |||BBBBBB| |BBBBBB|
KFLKEID-----VRSPNP-----IYQH--PTRLTYDIKLN--PFNDWQF-----

aldnvnvdgafdtlkgalyvtd-rkvgsvyifyldsgkvtpfkglslngiaispdgtly
|      BB| | |BBBBBB |||BBBBBB |BB      ||BBBB| |BBB
-S-----TYGD-DGTLAIWDRRKLSDQASLG--DLNV-----ASPLLTFF--KLV

irettrnkiwkfelgtslvlkdatgpvgisvdsdgtlyvasgrsniaryklskdivqies
BBB      |BBBBBB| |||      BBBB|||BBBBBB|||BBBBBB| |||BB|||
GSG---AASRKYMN-SCFR-----WSCVRNNEFATLHRGDTIKRWRLGYCDSNRD

pgkstysavspfdgsvlvessnsslyilnwe
      BBBB| |BBBBBB BBBB| |
-----IAADD--DNEMNIE---NLFVSSVH
```

7-7-bladed

```
>YBL104C
Raw score: -335.0246
P-value: 0.99877

dveieapaygsavilgdssllliassgqvyyvwdlvtl-kvtqrlplrsivssvafspdgd
|||||  BBBBBB|BBBBBB| || | ||BBBB| ||||BBBB|
-----MGLIKK---VTHWSYDNLIDYLSVNPTRDEVTHYKVDPENESDESII---

kvavag-dgrvalydleakftaeeapgkvtalavskdgnkvvvgssdgalsvldlegtpt
BBBBBB ||BBBBBB| |||||  BBBB||| |BBBBB| || |BBBBB| |B
KLHTVKDFGSITCLDY-----SESEIG---MIGVGEKNGYLRIFN-ISGQNSSSP---AS

vvelsdgvtsvldldpergtlyagakdgsiqvfdssksvaavtgkespravafspn-tgly
B|||  BBBB||| |BBBBB |BBBBB|  BB||  BBBB||| |BBB
HAPV-----GLNANNET-SMTNAS-GGKAAQAE-----NIVG-----SVSNLKDTQGYF

vlsegkvavidlddsevtvlrgedaltaiavspasvlyaatsdgtvylwdattkkekrrvd
BBB| |BBBBBB|||  ||BBBB  BBBB|| | |BBBB|  |||
VSETNYDIRVRAKK-----QRCINS-----LGINTN-GLIAMGL-----DRNK

alndsvssvavddkplyvgtsgriviidle-dveieapaygsavilgdssllliassgqv
||  BBB|  BBB  |BBB||| |  |||  BBBBBB| |BB
HD-----SSLQ---IWD-----MNYHDDSHE-----TINP--MFSYCTNESI

yyvwdlvtlkvtqrlplrsivssvafspdgdkvavagdgrvalydleakftaeeapgkvt
BBBBB  BBBB|  |BBBB||| |BBBBBB|BBBBBB|  |||||  B
VSLK-----FLNDT---SVLAASKFLKEIDVRSPNPIYQHP---TRLTYDIK---L

lavskdgnkvvvgssdgalsvldlegtptvv-elsdgvtsvldldpergtlyagakdgsiq
BBB|  |BBBBB||| |BBBBB|  BB|  |  BBBB|  BBBBB  BBB
NPFN--DWQFSTYGDDGTLAIWDR----RKLSAQ-----ASLGD-----LNVAS---PLL

vfdssksvaavtgkespravafspntglyvlsegkvavidlddsevtvlrgedaltaiav
BB|  BB||| ||| |BBBB||| BBBBBB|BBBBBB|||  | |BBBB
TFE-----KLVGSGAASRKYMNSCF-RWSCVRNNEFATLHRGD-----T-IKRWRL

spasvlyaatsdgtvylwdattkkekrrvdalndsvssvavddkplyvgtsgriviidle
BBBB||| |BBBB|  ||| |  BBB  BBB  BBB |
-----GYYCDSNRDIAADD-----DNEM-N-----IEN----LFV-----SSV--H
```


7-8-bladed

```
>YBL104C
Raw score: -636.5831
P-value: 0.99935

dveieapaygsavilgdssllliassgqvvywdlvtlktvtrplrsivssvafspdgdk
          BBBBBB |BBBBBB          BBBB|          BBBB|| ||B
-----MGLIKK-VTHWSYD-----NLIDY-----LSVNPT-RDE

vavag-dgrvalydleakftaeapgvktalavskdgnkvvvgssdgalsvldlegtptv
BBBBB ||BBBBBB|          ||BBBB|          BBBBB          BBB
VTHYKVDPENESDES-----IIKLHTV----KDFGS-----ITCLDY----SE

velsdgvtsvldldpergtlyaga-kdgsiqvfdssksvaavtgkespravafspntglyv
          BBBB          BBBBB |||BBBB|| ||BB||          BBBB||| BBBB
-----SEIG-----MIGVGEKNGYLRIFNI--SGQNSS-----SPASHAP-VGLN

lsegkvcvidlddsevtvlrgedaltaiavspasvlyaatsdgtvyldattkkekrvda
BB| BBBBBB|||          ||BBBB          BBBB||          BBBB          |
ANN-ETSMTNASG-----GKAAQA-----ENIVGS---VSNL-----K

lndsvssvavddkplyvgtsgriviidlefedlsellik-ildlnsvdekskvkvdstkn
|          BBB          BBB |||BBB          BBBBB BBBBBBB ||          |
D-----TQG-----YPV--SETNYDI-----RVRACKQRCINSL----GI-----N

dlsvsdgrfilveyqvksdasidiidlakrqliteiikisnealvevskdkvlvgasvrn
BBBB          BBBBBB|BB|BBBBBBBB          BB|||          BBBB|||BBBBB ||
TNGL----IAMGLDRNKHDSSLQIWD---MNYHDD-----SHETINPMFSYCT--NE

diavkdeksleskrivftrgtykiveyrgsaliysgevdllayaskedlieysfktvrpv
BBBBB          BB          BBB|||BBB|||          BBBBBBBB|BBBBBBBBBBBBB
SIVSL-----KF-----LNDTSVLAASK--FLKEIDVRSPNPIYQHPTRLT

ypaetvkvfvnaksitnltstaiqadhyldvtwseqllslaarrssivdvldrderd
|          BBBBBBBB          BBBB|          BBB|BBBB          BBBBBBBBBBBBBBBBBB BB
Y---DIKLNPFN-----DWQFS--TYGDDGTL----AIWDRRKLSDQASLGDL--NV

lsvadkvdsdwwrkrpngedaftvdgkvfykiisklgsiklfqaikgevaelteefsvig
B|BBBBB          BB          BBBBBB|BBBBBBB          BB          B
ASPLLTFE-----KL-----VGSGAASRYMNSCFR-----WS-----C

iealasdylyyitadrsvkaidldkldkltvklkvvsqpfsnrakyvalrvgggslllv
B|BB          BBBBBB|||BBBBBB          BBB          BBBBB|          BBBBB          |BBBB
VRNN---EFATLHRGDTIKRWR-----LGY-----YCDSNR----DIAADD--DNEMN

vssktlkgkavle
BB ||BB|BB |
IE--NLFVSSV-H
```

8-6-bladed

```
>YBL104C
Raw score: -518.3263
P-value: 0.99500

fedlsellikildlnsvdekskvkvdstkndlsvsdgrfilveyqvksdasidiidlakr
      BBBBBBBBBBBBB      BBBB      BBBBBB|BB|BBBBBBBBB |||
-----MGLIKKVTHWSY-----DNLI----DYLSVNPTRDEVTHYKVD-PEN

qliteiikisnealvevskdkvlvgasvrndiavkdeksleskrivftrgtykiveyrgrs
BB|||      BBBB  ||BBBBB      BBBBB|      BB      BBB||
ESDES-----IIKL--HTVKDFG----SITCLD-----YS-----ESEIG

aliysgevdllayaskedlieysfktvrpypaetvkfvvnaksitnltstaiqadhyl
|BBB ||  BBBBBBBB BBBBBBBBBBBB      BBBBBBBB||      BBBB  BBB
MIGV-GE--KNGYLRIF-NISGQNSSSPAS----HAPVGLNANN-----ETSM---TNA

ndvtwseqkllslaarr--ssivdvldrderdlsvadkvsdswvrkrpngedaftvdgkv
|BBBB|||BBBBBBBBB      BBBBBBBBBB|BBB|BBBBBB      BB  B
SGGKAAQAENIVGSVSNLKDTQGYPVSETNYDIRVRAKKQ-----RC-----I

fykiisklgsiklfgaikgevaelteefsvigiealasdylyitadrsvkaidlkdldk
BBBBBB|BBBBBBB|      BB|||      BB|BB      BBBBBB|      BBBBBB|
NSLGINTNGLIAMGLD-----RNKHDS----SLQIW---DMNYHDD--SHETINP-----

ltvklkvvsqpfsnrakyvalrvggsgllvvvssktlkgkavleatvvtetvyrepaidd
BBB      BBBBB|      BBBBBB|||BBBBBB  ||BB|BB      |BBB
MFS-----YCTNES----IVSLKFLNDTSVLAAS--TKFLKEI-----DVRs

sqgrafatssngkilllldltgskkvlfprddnpspaviydtngkllvvtrpt-nglviyt
|      BBBBBB|      BBBBBB      BB      BBBB      |BBBBBB|||      BBBBBB
P--NPIYQHP--TRLTYD-----IK-----LNPF----NDWQFSTYGDDGTLAIWD

lkwekktdigaialdnvndgafdtlkgalyvtdrvkgsvyifyldsgkvtpfkglsing
|      |||||BB||      BBBBBB      BBBBBB      BB|||
R-----RKLSDQASLG---DLNVA-----PLLTFE----KLVGSGA-----

iaispdgltyirettrnkiwkfelgtslvkdatgpvgisvdsdgtlyvasgrsniary
BBBB||  BBBBBB  |BBBBBB|      BBBB||BBBBBB      BBBBB
ASRKYM--NSCFRW--SCVRNNEF-----ATLHRGDTIKRWR--LGYYC

klskdivqiespgkstysavspfdgsvlvessnsslyilnwe
B|      BB      |BBBB|      BBBBBB      BBBBBB||
DS----NR-----DIAADD--DNEMNIE---NLFVSSVH
```

8-7-bladed

```
>YBL104C
Raw score: -575.2997
P-value: 0.99667

fedlsellikildlnsvdekskvkvdstkndlsvsdgrfilveyqvksdasidiidlakr
      BBBBBBBBBBBBB      BBBB      BBBBBB|BB|BBBBBBBBB |||
-----MGLIKKVTHWSY-----DNLI----DYLSVNPTRDEVTHYKVD-PEN

qliteiikisnealvevskdkvlvgasvrndiavkdeksleskrivftrgtykiveyrgrs
BB|||      BBBB  ||BBBBB      BBBBB|      BB      BBB||
ESDES-----IIKL--HTVKDFG----SITCLD-----YS-----ESEIG

aliysgevdllayaskedlieysfktvrpypaetvkfvvnaksitnltstaiqadhyl
|BBB || BBBBBBBB BBBBBBBBBBBB      BBBBBBBB||      BBBB BBB
MIGV-GE--KNGYLRIF-NISGQNSSSPAS----HAPVGLNANN-----ETSM---TNA

ndvtwseqkllslaarr--ssivdvldrderdlsvadkvdswvrkrpnedaftvdgkv
|BBBB|||BBBBBBBBB BBBBBBBBBB|BBB|BBBBBB      BB B
SGGKAAQAENIVGSVSNLKDTQGYPVSETNYDIRVRAKKQ-----RC-----I

fykiisklgsiklfgaikgevaelteefsvigiealasdylyitadrsvkaidlkdldk
BBBBBB|BBBBBBB|      BB|||      BB|BB      BBBBBB|      BBBBBB|
NSLGINTNGLIAMGLD-----RNKHDS----SLQIW---DMNYHDD--SHETINP-----

ltvklkvvsqpfsnrakyvalrvggsgllvvvssktlkgkavledveieapaygsavil
BBB      BBBB|      BBBBBB|| |BBBBBB      BB|BB
MFS-----YCTNES----IVSLKFLN-DTSVLAA----STKFL-----

gdssllliassgqvyvwdlvtlktvtrqlplrsivssvafspdgdkvavag-dgrvalydl
|      BBBBBB|BBBBBB      BBBB|      ||BBBB|      |BBBBBB      |BBBBBB|
K---EIDVRSPNPIYQHP-----TRLTY--DIKLNPFND--WQFSTYGDDGTLAIWDR

eakftaeeapgkvtalavskdgnkvvgssdgalsvldlegtptvvelsdgvtsvlddpe
      BBBB|      BBBB|      BBBB|      |BB||      BBBB
-----RKLSD----QASLGD----LNVASP---LLTFEK-----LVGS---

rgtlyagakdgsiqvfdssksvaavtgkespravafspntglyvlsegkvcvidlddsev
      BBBBB      BBBB|      BB      BBBB||      BBBBBB      BBBBBB
---GAASR---KYMNSC-----FR-----WSCVRNN-EFATLH--RGDTIK-----

tvlrgedaltaiavspasvlyaatsdgtvylwdattkkekrvdalndsvssvavddkply
      BBBB      BBBB|||BBBB|      ||||      BBB BB
-----RWRL-----GYYCDSNRDIAADD-----DNEM-N-----IEN---LF

vgtsgriviidle
B      BBB |
V-----SSV--H
```

8-8-bladed

```
>YBL104C
Raw score: -1236.9611
P-value: 1.00000

fedlsellikildlnsvdekskvkdstkndlsvsdgrfilveyqvksdasidiidlakr
      BBBBBBBBBBBBB      BBBB      BBBBBB BB BBBBBBBBB
-----MGLIKKVTHWSY-----DNLI----DYLSVN-PT-RDEVTHYK----

qliteiikisnealvevskdkvlvgasvrndiavkdeksleskrivftrgtykiveyrgs
BB          BBBBB      BBBBB      BBBBB      BB      BBB
VD-----PENE----SDESI----IKLHT-----VK-----DFG--

aliysgevdllayaskedlieysfktvrpypaetvkfvvnaksitnltstaiqadhyl
BBB      BBBBBBBBB BBBBBBBBBBBBB      BBBBBBBBB      BBBB      BBB
-SIT-----CLDYSESE-IGMIGVGEKNGY----LRIFNISG-----QNSS---SPA

ndvtwseqkllslaarrssivdvldrderdlsvadkvdsdwvrkrpnedaftvdgkvfy
BBBBB      BBBBBBBBBBBBBBBBBBBB BBB BBBBB      BB      BBB
-SHAP----VGLNANNETSMTNASGG--KAA--QAENI-----VG-----SVS

kiisklgsiklfgaikgevaelteefsvigiealasdylyitadrsvkaidlkdldklt
BBBBB BBBBBBB      BB      BB BB      BBBBBB      BBBBBB      BB
NLKD--TQGYPVS-----ET-----NY-DI---RVRAKK---QRCINS-----LG

vlklkvvsqpfsnrakyvalrvggsgllvvvssktlkgkavlefedlsellikildlnsv
B      BBBBB      BBBBBB      BBBBBB      BB BB      BBBBBBBBBBBBB
I-----NTNGL-----IAMGLD---RNKHDS---SL-QI-----WDMNYHDDSHET

dekskvkdstkndlsvsdgrfilveyqvksdasidiidlakrqliteiikisnealvev
      BBBBB      BBBBBB BB BBBBBBBBB      BB      BBBB
-----INPM---FSYCTN-ES-IVSLKFLN----DT-----SVLA

skdkvlvgasvrndiavkdeksleskrivftrgtykiveyrgsaliysgevdllayaske
BBBBB      BBBBB      BB      BBB      BBB      BBBBBBBBB
----ASTKF----LKEID-----VR-----SPN---PIY----QHPTRLTY

dlieysfktvrpypaetvkfvvnaksitnltstaiqadhylndvtwseqkllslaarr
|BBBBBBBBBBBBB      BBBBBBBB      BBBB      BBB BBB      BBBBBBBB
DIKLNPFNDWQFS----TYGDDGTL-----AIWD---RRK-LSDQ----ASLGDLNV

ssivdvldrderdlsvadkvdsdwvrkrpnedaftvdgkvfykiisklgsiklfgaikg
BBBBBBBBBB BBB BBBBB      BB      BBBBBBB      BBBBBBB
ASPLLTFEK--LVG--SGAAS-----RK-----YMNSCFR--WSCVRNN----

evaelteefsvigiealasdylyitadrsvkaidlkdldkltvlklkvvsqpfsnraky
BB          BB BB      BBBBBB      BBBBBB      BBB      BBBBB      B
--EF-----AT-LH---RGDTIK---RWRLGY-----YCD-----SNRDI-----A

valrvggsgllvvvssktlkgkavle
BBBBB      BBBBBB      BB|BB||
ADDDN----EMNIEN----LFVSSVH
```

If you use SMURF, please cite: [M. Menke, B. Berger and L. Cowen, "Markov random fields reveal an N-terminal double beta-propeller motif as part of a bacterial hybrid two-component sensor system" PNAS March 2, 2010 vol. 107 no. 9 4069-4074.](#)

WebsERVER by Matt Menke (Based on [Anoop Kumar](#)'s [Matt script](#))