

Reference Alignment for twi_168 in SABRE database

```
>d1f71a_
GIYGIGLDITELKRIASMAQRKRAERIL..LTRSELDQYYELS.EKKNFLAGRFAAKEAFSKAFGTGIGRQLSFQDIEIRKQNGKPYIICTKLSPAAPHVSITHTRKEYAAQVVI
ER.....
>d1qr0a1
...MKIYGIY..MDRPLS...QEENERFMTFISPEKREKCRRFYHKEDAHRTL LGDVLVRSVISRQY....QLDKSDIRFSTQEYGKPCIPDLPAHFNISHSG....RWIGAFDS
.....
>d1qr0a2
..QPIGIDIEK...TKPIS...L.EIAKRFF..FSKTEYSDDLAKD.KDEQTDYFYHLWSMKESFIKQE.GKGLSLPLDSFSVRLHQDQVSIELPDSSHSPCYIKTYEVDG.GYKMAVCAA
HPDPFPEDITMVSYEELLRAAA
```

Alignment generated by our method MSACompro (SP score = 0.853, TC score = 0.780)

```
>d1f71a_
GIYGIGLDITELKRIASMAQRKRAERIL--TRSELDQYYELS--K--AKNEFLAGRFAAKEAFSKAF--GTGIGRQLSFQDIEIRKQNGKPYIICTKLSPAAPHVSITHTRKEYAAQVVI
-----IER
-----IER
>d1qr0a1
--MKI-YGIYMDRPLSQ-----EENERFMTF--SPEKREKCRRFY--KED--AHRTL LGDVLVRSVISRQY-----QLDKSDIRFSTQEYGKPCIPDLPA--HFNISHSGRWIGAF--
-----DSS
-----DSS
>d1qr0a2
--QPIGIDIEKTKPISL-----EIAKRFF--SKTEYSDDLAKD--KDEQTDYFYHLWSMKESFIKQE--GKGLS--LPLDSFSVRLHQDQVSIELPDSSHSPCYIKTYEVDG--GYKMAVCAA
AHPDPFPEDITMVSYEELLRAAA
```

Diagram illustrating the alignment generated by MSACompro. Red boxes highlight specific regions of the alignment, and blue ovals indicate gaps or mismatches. Arrows point from the red boxes to the corresponding ovals.

Alignment generated by method MSAProbs (SP score = 0.307, TC score = 0.000)

```
>d1f71a_
-GIYGIGLDITELKRIASMAQRKRAERIL--TRSELDQYYELS--K--AKNEFLAGRFAAKEAFSKAF--GTG-----IGR--QLSFQDIEIRKQNGKPYII-C-----TKLSP--
---AAVH-----VSITHTRKEYAAQVVI
>d1qr0a1
MKIYGIYMD--RPLSQ-----EENERFMT--F--SPEKREKCRRFY--KED--AHRTL LGDVLVRSVISRQY--QLDKSDIRFSTQEYGKPCIPDLPA-----
----AH-----FNISHSGRWIGAF--AF--SS
>d1qr0a2
---QPIGIDIEKTKPISL-----EIAKRFF--SKTEYSDDLAKD--KDEQTDYFYHLWSMKESFIKQE--GKGLS--LPLDSFSVRLHQDQVSIELPDSSHSPCYIKTYEVDG--GYKM
AVCAHPDPFPEDITMVSYEELLRAAA
```

Diagram illustrating the alignment generated by MSAProbs. Green boxes highlight specific regions of the alignment, and blue arrows indicate alignment shifting. A blue box labeled "Obvious alignment shifting" is present on the right.

Obvious alignment shifting