# Supplemental figure 2

## A

JIP1 V581A

```
JIP1  ----------QFRVKFLGSVQV-------PYHKGNDVLCAAMQKIAT-TRRLTVHFN--------------------PPSSCVL
Shc   KV---MGPGVSYLVRYMGCVEVLQSMRALDFNTRTQVTREAISLVCEAVPGAKGATRRRKPCSRPLSSILGRSNLKFAGMPITL
Dab1  LIKRFKGEGVRYKAKLIGIDEV-------SAARGDKLCQDSMMKLKGVVAGARSKGE--------------------HKQKIFL
```

```
JIP1  EISVRGVKIGVKADDALEAKGNKCSHFFQLKNISFC-GYHPKNNKYFGFITKHPADHRFACHVFVSEDSTKALAESVGRAFQQFYKQFVE
Shc   TVSTSSLNLMAA-------DCKQIIANHHMQSISFASGGDPDTAEYVAYVAKDPVNQRACHILECPEGLAQDVISTIGQAFELRFKQY--
Dab1  TISFGGIKIFDE-------KTGALQHHHAVHEISYI-AKDITDHRAFGYVCGKEGNHRFVA--IKTAQAAEPVILDLRDLFQLIYELKQR
```

JIP1 F642                                                                          JIP1 F687

## B

V581A

```
C.elegans      TFYLTMLASIEVAHHKGNDVLTQAMNKVLSMYKNSEEIIVPQTVLMEISFRGIHVIDKRRKNFFQ---CPMFDF
D.melanogaster RYLLGYLGSVETLAHKGTGVVCQAVRKIVGEYGNSP---TGQTCILEVSDQGLRMVDRSGPNQNKKDKKPCIDY
M.musculus     QFRVKFLGSVQVPYHKGNDVLCAAMQKIATTRRLTVHFNPPSSCVLEISVRGVKIGVKADDALEAKG-NKCSHF
H.sapiens      QFRVKFLGSVQVPYHKGNDVLCAAMQKIATTRRLTVHFNPPSSCVLEISVRGVKIGVKADDSQEAKG-NKCSHF
```

```
C.elegans      FYSLQNISFCGAHPKQLKYFGFITKHPLLPRFACHVFMSKNTTQPIVEAIGRAFKRSYDEYMAFAHPTEDIYLE
D.melanogaster FYSLKNVSFCAFHPRDHRFIGFITKHPTVQRFACHVFKGSESTRPVAEAVGRAFQRFYQKFIETAYPIEDIYIE
M.musculus     F-QLKNISFCGYHPKNNKYFGFITKHPADHRFACHVFVSEDSTKALAESVGRAFQQFYKQFVEYTCPTEDIYLE
H.sapiens      F-QLKNISFCGYHPKNNKYFGFITKHPADHRFACHVFVSEDSTKALAESVGRAFQQFYKQFVEYTCPTEDIYLE
```

F642V                                                              F687V       Kinesin-1 binding
                                                                               required