

Appendix 1A Rab27A protein sequence alignment

[illegible]

Identical amino acids are shown in blue

- * Identical Residues in all species
- : Conserved substitutions
- Semi-conserved substitutions

Appendix 1B Rab27B protein sequence alignment

```

* * * * *
Human      MTDGDYDYLIKLLALGDSGVGKTTFLYRYTDNKFNPKEFITTVGIDFREKRVVYNAQGPNG 60
Chimpanzee MTDGDYDYLIKLLALGDSGVGKTTFLYRYTDNKFNPKEFITTVGIDFREKRVVYNAQGPNG 60
Bovine     MTDGDYDYLIKLLALGDSGVGKTTFLYRYTDNKFNPKEFITTVGIDFREKRVAYNTQGPNG 60
Rat        MTDGDYDYLIKLLALGDSGVGKTTFLYRYTDNKFNPKEFITTVGIDFREKRVVYDTQGADG 60
Mouse      MTDGDYDYLIKLLALGDSGVGKTTFLYRYTDNKFNPKEFITTVGIDFREKRVVYDTQGADG 60
Xenopus    MTDGDYDYLIKLLALGDSGVGKTTFLYRYTDNKFNPKEFITTVGIDFREKRV IYSNAGPGG 60
1 . . . . . 10 . . . . . 20 . . . . . 30 . . . . . 40 . . . . . 50 . . . . . 60

```

```

* * * * *
Human      SSGKAFKVLHLQLWDTAGQERFRSLTTAFFRDAMGFLLMFDLTSQQSFLNVRNWMSQLQAN 120
Chimpanzee SSGKAFKVLHLQLWDTAGQERFRSLTTAFFRDAMGFLLMFDLTSQQSFLNVRNWMSQLQAN 120
Bovine     PTGKAFKVLHLQLWDTAGQERFRSLTTAFFRDAMGFLLMFDLTSQQSFLNVRNWMSQLQAN 120
Rat        SSGKAFKVLHLQLWDTAGQERFRSLTTAFFRDAMGFLLMFDLTSQQSFLNVRNWMSQLQAN 120
Mouse      ASGKAFKVLHLQLWDTAGQERFRSLTTAFFRDAMGFLLMFDLTSQQSFLNVRNWMSQLQAN 120
Xenopus    TP GKT FKVHLQLWDTAGQERFRSLTTAFFRDAMGFLLMFDLTSQQSFLNVRNWMSQLQAN 120
. . . . . 70 . . . . . 80 . . . . . 90 . . . . . 100 . . . . . 110 . . . . . 120

```

```

* * * * *
Human      AYCENPDIVLIGNKADLPDQREVNERQARELADKYGIPYFETS AATGQNVEKAVETLLDL 180
Chimpanzee AYCENPDIVLIGNKADLQDQREVNERQARELADKYGIPYFETS AATGQNVEKAVETLLDL 180
Bovine     AYCENPDIVLIGNKADLPDQREVNERQARDLAEKYSIPYFETS AATGQNVEKAVETLLDL 180
Rat        AYCENPDIVLIGNKADLLDQREVNERQARELAEKYGIPYFETS AATGQNVEKSVETLLDL 180
Mouse      AYCENPDIVLIGNKADLPDQREVNERQARELAEKYGIPYFETS AATGQNVEKSVETLLDL 180
Xenopus    AYCENPDIVLIGNKADLS DQREVNERQAKELADKYGIPYFETS AASGKDVEKSVDTLLDL 180
. . . . . 130 . . . . . 140 . . . . . 150 . . . . . 160 . . . . . 170 . . . . . 180

```

```

* * * * *
Human      IMKRMEQCV EKTQIPDTVNGGNSGNLDGEKPPEKKC I C 218
Chimpanzee IMKRMEQCV EKTQIPDTVNGGNSGNLDGEKPPEKKC I C 218
Bovine     IMKRMEQCV E KTHIPDTVNGSSSGKLDGEKSAEKKCAC 218
Rat        IMKRMEKCV EKTQVPDTVNGVNSGKVDGEKPAEKKCAC 218
Mouse      IMKRMEKCV EKTQVPDTVNGGNSGKLDGEKPAEKKCAC 218
Xenopus    IMKRMEQCV DKTQVPDAVNGGTSGKLDEAKPEGRKCAC 218
. . . . . 190 . . . . . 200 . . . . . 210 . . . . .

```

Identical amino acids are shown in blue

- * Identical Residues in all species
- : Conserved substitutions
- . Semi-conserved substitutions