

## DESCRIPTION

|                                                                                                                                                                                                         |                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b>                                                                                                                                                                               | Human                                                                                    |
| <b>Specificity</b>                                                                                                                                                                                      | Detects human RanGAP1 in direct ELISAs and Western blots.                                |
| <b>Source</b>                                                                                                                                                                                           | Polyclonal Sheep IgG                                                                     |
| <b>Purification</b>                                                                                                                                                                                     | Antigen Affinity-purified                                                                |
| <b>Immunogen</b>                                                                                                                                                                                        | <i>E. coli</i> -derived recombinant human RanGAP1<br>Asn418-Val587<br>Accession # P46060 |
| <b>Conjugate</b>                                                                                                                                                                                        | Alexa Fluor 647<br>Excitation Wavelength: 650 nm<br>Emission Wavelength: 668 nm          |
| <b>Formulation</b>                                                                                                                                                                                      | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide                             |
| *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |                                                                                          |

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

**Western Blot** Optimal dilution of this antibody should be experimentally determined.

## PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

## BACKGROUND

RANGAP-1 (RAN [RAs-related Nuclear protein] GTPase-Activating Protein 1; also Fug1) is a 82-88 kDa member of the RNA1 family of molecules. It is widely expressed, and serves as a regulator of the nuclear regulatory protein RAN. RAN, when bound to GTP, is active, and is involved in the onset and termination of mitosis, plus the import and export of protein into the nucleus. In the cytosol, RAN:GTP is complexed to an Importin: cargo complex. RANGAP-1 converts the RAN-associated GTP into GDP, and this induces dissociation of the complex into RAN:GDP, Importin and cargo. The cargo stays in the cytosol, while both RAN:GDP and Importin now enter the nucleus. Here, RAN:GDP is converted into RAN:GTP by RCC1, where it binds to a newly formed Importin: cargo complex, and is exported out of the nucleus, completing a cycle. While in the cytoplasm, RANGAP-1 is phosphorylated and stabilized through SUMOylation and an interaction with Ubc9 and RanBP2. Human RANGAP-1 is 587 amino acids (aa) in length. It contains six LRRs (aa 48-343) plus two utilized acetylation sites and five phosphorylated Ser/Thr, and there is one SUMOylation motif between aa 523-526. There are three potential splice forms. One contains a single Ser insertion after Gly330, while a second contains an alternative start site 55 aa upstream of the standard site. A third isoform possesses that same upstream start site coupled to a 25 aa substitution for aa 525-587. Over aa 418-587, human RANGAP-1 shares 82% aa sequence identity with mouse RANGAP-1.

## PRODUCT SPECIFIC NOTICES

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