

Product Information

Anti-RanGAP1 (N-terminal)
produced in rabbit, affinity isolated antibody

Catalog Number **R0280**

Product Description

Anti-RanGAP1 (N-terminal) is produced in rabbit using as immunogen, a synthetic peptide corresponding to amino acids 1-20 located at the N-terminus of human RanGAP1, (GenElD: 5905) conjugated to KLH. This sequence is identical in mouse RanGAP1. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-RanGAP1 (N-terminal) recognizes human RanGAP1. Applications include immunoblotting (~65 kDa) and immunofluorescence. Staining of the RanGAP1 band in immunoblotting is specifically inhibited by the immunizing peptide.

The nuclear Ras-like GTPase Ran is required for nuclear transport of both proteins and mRNAs across the nuclear pore complex (NPC), and also in cell cycle control, mitotic spindle formation, and post-mitotic nuclear assembly.¹ RanGAP1 (Ran GTPase Activating Protein 1, 65 kDa) is a key regulator of Ran activity. RanGAP1 specifically induces the GTPase activity of Ran.² Ran is also regulated by a chromatin-bound nucleotide exchange factor, RCC1 that keeps Ran in the active GTP-bound state. RanGAP1 is conjugated to the small ubiquitin-related modifier protein SUMO-1.³ The activity of Ran GAP1 is not substantially altered by SUMO-1 modification. However, this modification promotes association of RanGAP1 with the interphase NPC, through binding to the nucleoporin RanBP2 and with Ubc9.^{4,5} The association of RanGAP1 with RanBP2 may facilitate nuclear transport. The unmodified form of RanGAP1 (~65 kDa) is exclusively cytoplasmic, whereas the 90 kDa SUMO-1-modified form is associated with the cytoplasmic fibers of the NPC. During mitosis SUMO-1 modification has been shown to target RanGAP1 to the mitotic spindles and kinetochores.⁶

Reagent

Supplied as a solution in 0.01 M PBS, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~2 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 1-2 µg/mL is recommended using HEK-293T cells transfected with human RanGAP1.

Indirect immunofluorescence: a working concentration of 10-20 µg/mL is recommended using HeLa cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

1. Sazer, S., and Dasso, M., *J. Cell Sci.*, **113**, 1111-1118 (2000).
2. Bischoff, F.R., et al., *Proc. Natl. Acad. Sci. USA*, **92**, 1749-1753 (1995).
3. Matunis, M.J., et al., *J. Cell Biol.*, **135**, 1457-1470 (1996).
4. Joseph, J., et al., *Curr. Biol.*, **14**, 611-617 (2004).
5. Reverter, D., and Lima, C.D., *Nature*, **435**, 687-692 (2005).
6. Joseph, J., et al., *J. Cell Biol.*, **156**, 595-602 (2002).

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