

Product Information

Anti-Nap1 (N-terminal)

produced in rabbit, affinity isolated antibody

Product Number **N3788**

Product Description

Anti-Nap1 (N-terminal) is produced in rabbit using as immunogen a synthetic peptide corresponding to a sequence at the N-terminal of human Nap1 (GeneID: 10787) conjugated to KLH. This sequence is identical in mouse and rat Nap1. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Nap1 (N-terminal) specifically recognizes human, mouse, and rat Nap1 by immunoblotting (~125 kDa). Staining of the Nap1 band by immunoblotting is specifically inhibited by the Nap1 immunizing peptide.

Actin dynamics play a central role in cellular function. Reorganization of the actin cytoskeleton, via actin polymerization and depolymerization, is required for diverse cellular processes, including cell morphology, cytokinesis, cell adhesion, and motility. These processes are induced by the Rho family of small GTPases Cdc42 and Rac.

The N-WASP and WAVE are members of a family of proteins that use the Arp2/3 complex to stimulate actin polymerization and cytoskeletal organization.¹⁻³ The WAVE proteins also play key roles in the induction of various actin remodeling processes including membrane ruffling and lamellipodia formation. The activity of the WAVE proteins is regulated via the formation of macromolecular complexes. The majority of cellular WAVE-1 and WAVE-2 is in complex with Nap1, PIR121/Sra1, HSPC300, and Abi1.

Nap1 (also known as Nap125, Nck-associated protein 1, and NCKAP1) is an essential component of this signaling complex.⁴⁻⁶ Nap1 along with Sra1 and Abi1 is involved in stabilizing WAVE2. Removal of Nap1 or Sra1 by RNAi abrogated the formation of lamellipodia induced by growth factor.⁷ Nap1 interacts directly with Abi1. It has been shown that Nap1 mediates the interaction of the Nap1-PIR121 complex to Abi1. Abi1 positively regulates WAVE activity and connects WAVE to Rac through assembly of the WAVE-Abi1-Nap1-PIR121 complex.^{5, 6}

Reagent

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

Antibody concentration: ~1.0 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the 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 0.5–1.0 µg/mL is recommended using 3T3 cells lysate and HEK-293T cells expressing human Nap1.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

1. Pollard, T.D., and Borisy, G.G., *Cell*, **112**, 453-465 (2003).
2. Takenawa, T., and Miki, H., *J. Cell Sci.*, **114**, 1801-1809 (2001).
3. Millard, T.H. et al., *Biochem. J.*, **380**, 1-17 (2004).
4. Yamamoto, A. et al., *Gene*, **271**, 159-169 (2001).
5. Innocenti, M. et al., *Nature Cell Biol.*, **6**, 319-327 (2004).
6. Innocenti, M. et al., *Nature Cell Biol.*, **7**, 969-976 (2005).
7. Steffen, A. et al., *EMBO J.*, **23**, 749-759 (2004).

VS,ER,KAA,PHC,MAM 02/19-1