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Product Information

Anti-DOCK1 (C-terminal)
produced in rabbit, affinity isolated antibody

Product Number **D9945**

Product Description

Anti-DOCK1 (C-terminal) is produced in rabbit using as the immunogen a synthetic peptide corresponding to a sequence at the C-terminal of human DOCK1 (GeneID: 1793) conjugated to KLH. The corresponding sequence is identical in mouse and rat DOCK1. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-DOCK1 (C-terminal) specifically recognizes human, rat, and mouse DOCK1. The antibody may be used in various immunochemical techniques including immunoblotting (~180 kDa) and immunofluorescence. Staining of the DOCK1 band by immunoblotting is specifically inhibited by the DOCK1 immunizing peptide.

DOCK1 (also termed as DOCK180) is a member of a family of guanine nucleotide exchange factors (GEF), implicated in integrin signaling through the Crk-p130^{Cas} complex, and involved in cytoskeletal reorganization and cell migration.[1,2] DOCK1 is found in the Crk-p130^{Cas} complex that is localized at focal adhesions, and induces the phosphorylation of p130^{Cas}.

Downstream of Crk, DOCK1 functions as an activator of Rac and regulates cell motility, filopodia formation, and phagocytosis, primarily through the activation of β_1 and $\alpha_v\beta_5$ integrins.[3] DOCK1 forms a complex with ELMO1 that functions as a bipartite GEF for Rac.[4] In mammalian cells, the Crk-ELMO1-DOCK1 complex has been shown to promote phagocytosis and morphological changes such as integrin-mediated cell spreading and NGF-induced neurite outgrowth. DOCK1 has been suggested to play a central role in netrin signaling during neuronal development by mediating the attractive responses by neurons to netrin-1.[5]

DOCK1 has been found to undergo ubiquitination and proteasome-dependent degradation, a process enhanced in response to EGF, Crk and adhesion-dependent signals.[6] ELMO1 inhibits the ubiquitylation of DOCK1, resulting in an increase in DOCK1 levels, suggesting a mechanism that might contribute to the regulation and local activation of Rac1 on the plasma membrane.

Reagent

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

Antibody concentration: ~1.5 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

Store at –20 °C. For continuous use, the product may be stored at 2–8 °C for up to one month. For extended storage, freeze in working aliquots at –20 °C. 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 antibody concentration of 2-4 μg/mL is recommended using HeLa or PC12 cell lysates.

Immunofluorescence: a working antibody concentration of 10-20 μg/mL is recommended using NIH-3T3 cells.

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

References

1. Kiyokawa, E. et al., *Genes & Dev.*, **12**, 3331-3336 (1998).
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3. Albert, M.L. et al., *Nature Cell Biol.,* **2**, 899-905 (2000).
4. Grimsley, C.M. et al., *J. Biol. Chem.,* **279**, 6087-6097 (2004).
5. Li, X. et al., *Nature Neurosci.,* **11**, 28-35 (2008).
6. Makino, Y. et al., *J. Cell Sci.,* **119**, 923-932 (2006).

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