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Product Information

Anti-Flotillin 1–Cy3™
produced in rabbit, affinity isolated antibody

Catalog Number **F8931**

Product Description

Anti-Flotillin 1–Cy3 is a Cy3 conjugate of Anti-Flotillin 1 antibody produced in rabbit using as immunogen a synthetic peptide corresponding to amino acid residues 413-428 of mouse flotillin 1 (GeneID 14251) conjugated to KLH. The corresponding sequence is identical in rat and differs by one amino acid in human. Anti-Flotillin 1. The Cy3 conjugate is prepared by conjugation of the affinity purified antibody to Cy3. The conjugate is purified by gel filtration to remove unbound Cy3 fluorophore.

Anti-Flotillin 1–Cy3 recognizes mouse, rat, and human flotillin 1. The product may be used for the detection and localization of flotillin 1 by direct immuno-fluorescence staining.

Flotillins are lipid raft-associated proteins involved in various cellular processes such as endocytosis, phagocytosis, neuronal regeneration and insulin signaling.[1,2] Lipid raft microdomains are glycosphingolipid- and cholesterol-rich membrane organized, dynamic structures connected to the cytoskeleton. Lipid raft domains are insoluble in non-ionic detergents, have a low buoyant density and contain proteins such as Src family kinases, glycosylphosphatidylinositol (GPI)-linked proteins, caveolins, sphingolipids and cholesterol. Lipid rafts have a central role in cellular organization, membrane trafficking and signaling events.[3,4] The flotillin protein family consists of two proteins, flotillin 1 and 2, also named reggie-2 and -1, respectively. Flotillins belong to a larger family of integral membrane proteins that contain an evolutionarily conserved domain called the prohibitin homology (PHB) domain or SPFH domain (stomatin/prohibitin/flotillin/HflK/C domain). It has been suggested that the PHB domain constitutes a lipid recognition motif which can target proteins to the plasma membrane.[2,4] The association of flotillin 1 to the plasma membrane depends on palmitoylation in a conserved Cys[34] residue, whereas the association of flotillin 2 depends on both myristolation and palmitoylation.[2,5]

The flotillin proteins are conserved and ubiquitously expressed. Flotillin 1 and 2 show a complementary tissue distribution. While flotillin 1 is mainly expressed in striated muscle tissues, adipose tissue and lung, flotillin 2 is much widely distributed, but is absent in skeletal muscle.[6] Flotillin 1 is mostly localized to the plasma membrane although it was reported to reside also in a specific population of endocytic intermediates. Flotillin 1 does not colocalize with endocytosed transferrin and caveolin-1, indicating that it could be associated with endocytosis via a pathway that is different from clathrin-coated pits and caveolin-1-positive caveolae.[7]

Flotillin 1 was found to specifically interact with the multivalent adaptor protein CAP, the Src family kinase Fyn and F-actin in lipid raft microdomains in adipocytes. Therefore, it was suggested that flotillin 1 may function as a molecular link between lipid rafts of the plasma membrane and a multimeric signaling complex at the actin cytoskeleton.[4] Flotillin 1 may be used as a marker protein for lipid raft microdomains.

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: 1.0 - 3.0 mg/mL
Molar Ratio (F/P): 3-9

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
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 at –20 °C in working aliquots. Protect from prolonged exposure to light. 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 dilution samples should be discarded if not used within 12 hours.

Product Profile
Direct immunofluorescence: a working antibody concentration of 2-5 µg/mL is recommended using human HEK-293T or HeLa cells.

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

References

1. Bickel, P.E., et al., *J. Biol. Chem*., **272**, 13793-13802 (1997).
2. Neumann-Giesen, C., et al., *Biochem. J*., **378**, 509-518 (2004).
3. Salzer, U., and Prohaska, R., *Blood*, **97**, 1141-1143 (2001).
4. Liu, J., et al., *J. Biol. Chem*., **280**, 16125-16134 (2005).
5. Morrow, I.C., et al., *J. Biol. Chem*., **277**, 48834-48841 (2002).
6. Volonte, D., et al., *J. Biol. Chem*., **274**, 12702-12709 (1999).
7. Glebov, O.O., et al., *Nature Cell Biol*., **8**, 46-54 (2006).

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