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Product Information

Anti-KIF17
produced in rabbit, affinity isolated antibody

Catalog Number **K3638**

Product Description

Anti-KIF17 is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 589-606 of mouse KIF17 conjugated to KLH. Anti-KIF17 is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-KIF17 may be detected by immunoblotting (170 kDa) and indirect immunofluorescence. Staining of KIF17 in immunoblotting is specifically inhibited with the KIF17 immunizing peptide.

The kinesin superfamily of proteins (KIFs) consists of a class of microtubule-dependent motors that play a major role in many cellular and developmental functions, including organelle transport, mitosis, meiosis, and possibly long-range signaling in neurons.[1,2] The kinesin proteins are involved in organelle transport and are primarily associated with anterograde transport of vesicles and organelles in neurons, epithelial cells, and melanosomes with bidirectional transport of mitochondria. They also mediate transport between the endoplasmic reticulum (ER) and the Golgi complex. In neurons, kinesin motors conduct vesicular transport, such as of synaptic vesicle components to axons and of neurotransmitter receptors to dendrites.

The kinesin superfamily of proteins are encoded by a large number (>30) of genes.[1,3,4] KIF17 belongs to the functionally diverse subgroup of the kinesin superfamily characterized by a N-terminal motor domain (N-IV class), that includes the KIF3 motor protein.[3,5] KIF17 and OSM-3, a putative dendritic motor for odorant receptors in *C. elegans*, constitute a family of motor proteins.[6] KIF17 is similar to OSM-3 in the head and tail domains and has two putative stalk domains that form an α-helical coiled coil. KIF17 probably exists as a homodimer and exhibits a plus end-directed microtubule sliding activity of ~1 μm/sec., suggesting that it can mediate fast axonal transport.

KIF17 is specifically expressed in the brain, present in abundance in the gray matter, particularly in the hippocampus and cerebral cortex, but not in the white matter such as the optic nerve. KIF17, a dendritic-specific motor protein, is localized in dendrites of pyramidal neurons, but not in axons or nuclei of the cerebral cortex.

KIF17 conveys (in dendrites) specific cargo vesicles that contain the glutamate receptor NR2B subunit, thus KIF17 functions as the sorting machinery for NR2B. Selective transport is achieved by a direct and specific interaction of the KIF17 tail with the PDZ domain of mLin-10 (Mint1/X11), which is a constituent of a large protein complex that includes mLin-2 (CASK), mLin-7 (MALS/Velis), and the NR2B subunit.[6] This interaction, specific for a neurotransmitter receptor and critically important for plasticity in the postsynaptic terminal, may be a regulatory point for synaptic plasticity and neuronal morphogenesis.

Reagent

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

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 prolonged 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 minimum working dilution of 1:1,000 is determined using a mouse brain cytosolic fraction.

Indirect immunofluorescence: a minimum working dilution of 1:100 is determined using rat pheochromocytoma PC12 cell line differentiated with NGF.

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

References

1. Hirokawa, N., *Science*, **279**, 519 (1998).
2. Hirokawa, N., *Traffic*, **1**, 29 (2000).
3. Aizawa, H., et al., *J. Cell Biol*., **119**, 1287 (1992).
4. Nakagawa, T., et al., Proc. Natl. Acad. Sci. USA, **94**, 9654 (1997).
5. Kondo, S., et al., *J. Cell. Biol*., **125**, 1095 (1994).
6. Setou, M., et al., *Science*, **288**, 1796 (2000).

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