3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Monoclonal Anti-Neuropilin-1, Clone 130603
produced in mouse, purified immunoglobulin

Catalog Number **N3287**

Product Description

Monoclonal Anti-Neuropilin-1 (rat), Clone 130603, was produced from a hybridoma resulting from the fusion of a mouse myeloma with B cells obtained from a mouse immunized with purified, NS0-derived, recombinant rat Neuropilin-1 (rrNeuropilin-1). The IgG fraction of the tissue culture supernatant was purified by Protein G affinity chromatography.

Monoclonal Anti-Neuropilin-1 (rat), Clone 130603 recognizes rat Neuropilin-1 in direct ELISAs and shows no cross-reactivity with rrNeuropilin-2.

Semaphorins, neuropilins and netrins are among a number of molecules and their receptors that regulate the developing nervous system to guide the development of neural circuits.[1] Although first identified as axon guidance cues,[2,3] it is now apparent that many of these same factors are not limited to the guidance of growing axons, but have roles in a range of processes from the guidance of cell migration to the regulation of the immune response, angiogenesis, lung branching morphogenesis, nervous system regeneration, and cancer.[4-9]

The semaphorins make up the largest family of axon guidance cues. They are characterized by the presence of an approximately 500 amino acid N-terminal semaphorin (Sema) domain. Semaphorins function mainly as chemorepellents that direct axons away from tissues.[3] Semaphorin 3A (Sema3A) has been shown to be repellent to cortical axons and to inhibit axon branching.[10] The transmembrane protein semaphorin 6A has been shown to repel embryonic sympathetic axons.[11] The actions of the various semaphorins are not always similar, however. Semaphorin 3A has been found to inhibit tumor development whereas semaphorin 6A may contribute to tumor progression.[9]

Neuropilins are the ligand binding moieties in the class 3 Semaphorin receptor complexes that subsequently activate signaling through associated plexins. Two types have been identified so far: Neuropilin-1 (Npn-1) and Neuropilin-2 (Npn-2) receptors. At the amino acid sequence level, Npn-1and Npn-2 share 44% identity. Npn-1 and Npn-2 show different expression patterns in developing neurons of the central and peripheral nervous systems, and show different binding specificities for different members of the semaphorin family. Both also function as receptors for some forms of vascular endothelial growth factor (VEGF).[12]

Netrins are a family of laminin-related small proteins that are involved in axon guidance and neurite outgrowth. Netrin-1 has been shown to attract cortical growth cones and promote axon branching.[10] Netrin-4 (first named β-netrin) was found to promote neurite elongation from olfactory bulb explants.[13] Netrin-G1 consists of at least six isoforms of which five were predominantly anchored to the plasma membrane via glycosyl phosphatidyl-inositol linkages, and lack appreciable affinity to receptors for classical netrins.[14,15]

Reagent

The antibody is supplied lyophilized from a 0.2 μm filtered solution in phosphate-buffered saline (PBS) with 5% trehalose.

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.

Preparation Instructions

Reconstitute with sterile PBS. If 1 mL of PBS is used, the antibody concentration will be 500 μg/mL.

Storage/Stability

For extended storage, lyophilized powder should be stored at –20 °C or below. The reconstituted solution can be stored at 2-8 °C for up to 2 weeks. For longer storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. 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

The recommended working dilution 0.5-1 μg/ml for Direct ELISA.

Note: In order to obtain best results and assay sensitivities of different techniques and preparations, determination of optimal working dilutions by titration test is recommended.

References

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