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Product Information

Anti-GFRα-3
produced in rabbit, IgG fraction of antiserum

Catalog Number **G9540**

Product Description

Anti-GFRα-3 (GDNFRγ, RETL2, TrnR2, NTNR-α) is produced in rabbit using a synthetic peptide corresponding to amino acids from 347-360 of murine GFRα-3 as immunogen.[1]

Anti-GFRα-3 is specific for GFRα-3 by immunoblotting (43 kDa). Anti-GFRα-3 reacts with mouse tissue lysates.

The GDNF family comprises glial cell line-derived neurotrophic factor (GDNF) and the related proteins neurturin (NTN), artemin (ART) and persephin (PSP), which form a subgroup of the TGF-β superfamily. All four neurotrophic factors provide neuronal cell protection and cell survival. In addition, GDNF and NTN are also responsible for the development and survival of the enteric neurons, and NTN for parasympathetic neurons. GDNF, a mesenchyme-derived signaling molecule, is also responsible for the promotion of ureteric branching in kidney development. NTN, ART, and PSP are also expressed in the developing kidney, and NTN and PSP induce ureteric branching *in vitro*, but their true *in vivo* role in kidney morphogenesis is still unclear. The members of the GDNF family, GDNF, NTN, PSP, and ART have seven conserved cysteine residues with similar spacing. Like the members of the neurotrophin family, the GDNF family belongs structurally to the cysteine knot proteins. All neurotrophins bind to the p75 low-affinity receptor, but their ligand specificity is determined by Trk receptor tyrosine kinases. GDNF, NTN, PSP, and ART mediate their signals via a common receptor tyrosine kinase, Ret, but their ligand specificity is determined by a novel class of glycosylphosphatidylinositol (GPI)-anchored proteins called the GDNF family receptor alpha (GFRα). GDNF binds preferentially to GFRα-1, NTN to GFRα-2, ART to GFRα-3, and PSP to GFRα-4 as a co-receptor to activate Ret. At early stages of development GFRα-1 and GFRα-2 are expressed in the oculomotor, facial and spinal accessory, and only GFRα-1 in the trochlear, superior salivatory, trigeminal, hypoglossal and weakly in the dorsal motor nucleus of the vagus and the ambiguus nucleus. The abducens nucleus is negative for both GFRα-1 and GFRα-2. GFRα-3 was expressed only in the superior salivatory nucleus. GFRα-3 is expressed in developing and adult ganglia of the PNS but was not detected in the CNS.

Reagent

Supplied in phosphate buffered saline, containing 0.02% sodium azide.

Protein concentration is ~0.5 mg/ml.

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

Antibody can be stored at 2-8 °C for three months and at −20 °C for one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

Product Profile

Immunoblotting: recommended working dilution is 1:500-1:1,000 by immunoblotting using mouse kidney, liver or heart tissue lysates.

Note: In order to obtain best results and assay sensitivities of different techniques and preparations, we recommend determining optimal working dilutions by titration test.

References

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7. Mikaels, A., et al., A dynamic regulation of GDNF-family recepotrs correlates with a specific trophic dependency of cranial motor neuron subpopulations during development., *Eur. J. Neurosci*., **12**, 446-456 (2000).

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