

# GFR $\alpha$ -4 (C-19): sc-46987

## BACKGROUND

Glial cell line-derived neurotrophic factor (GDNF) and the related neurotrophic factor neurturin (NTN) are potent survival factors for central and peripheral neurons. Receptors for these factors include GFR $\alpha$ -1 (previously designated GDNFR- $\alpha$ ), GFR $\alpha$ -2 (also designated RETL2), GFR $\alpha$ -3 and GFR $\alpha$ -4 (also known as persephin receptor). The receptors do not contain transmembrane domains and are attached to the cell membrane by glycosylphosphoinositol linkage. Binding of GDNF or NTN to one of these receptors leads to the activation of the tyrosine kinase Ret. GFR $\alpha$ -4 mediates the activation and GDNF-induced autophosphorylation of the RET receptor. It is mainly expressed in the adult thyroid gland, but lower levels may also be detected in fetal adrenal and thyroid glands.

## REFERENCES

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- Yang, J., Lindahl, M., Lindholm, P., Virtanen, H., Coffey, E., Runeberg-Roos, P. and Saarma, M. 2004. PSPN/GFR $\alpha$ -4 has a significantly weaker capacity than GDNF/GFR $\alpha$ -1 to recruit Ret to rafts, but promotes neuronal survival and neurite outgrowth. *FEBS Lett.* 569: 267-271.
- Vanhorne, J.B., Andrew, S.D., Harrison, K.J., Taylor, S.A., Thomas, B., McDonald, T.J., Ainsworth, P.J. and Mulligan, L.M. 2005. A model for GFR $\alpha$ -4 function and a potential modifying role in multiple endocrine neoplasia 2. *Oncogene* 24: 1091-1097.
- Lindfors, P.H., Lindahl, M., Rossi, J., Saarma, M. and Airaksinen, M.S. 2006. Ablation of persephin receptor glial cell line-derived neurotrophic factor family receptor  $\alpha$ -4 impairs thyroid Calcitonin production in young mice. *Endocrinology* 147: 2237-2244.

## CHROMOSOMAL LOCATION

Genetic locus: GFRA4 (human) mapping to 20p12; GFRA4 (mouse) mapping to 2 F1.

## SOURCE

GFR $\alpha$ -4 (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of mature GFR $\alpha$ -4 and GFR $\alpha$ -4 precursor of human origin.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-46987 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

GFR $\alpha$ -4 (C-19) is recommended for detection of GFR $\alpha$ -4 isoforms GFR $\alpha$ -4a and GFR $\alpha$ -4b of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GFR $\alpha$ -4 siRNA (h): sc-60683.

Molecular Weight of unglycosylated GFR $\alpha$ -4: 29 kDa.

Molecular Weight of glycosylated GFR $\alpha$ -4: 33 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## SELECT PRODUCT CITATIONS

- Lucini, C., et al. 2008. Cellular localization of GDNF and its GFR $\alpha$ 1/RET receptor complex in the developing pancreas of cat. *J. Anat.* 213: 565-572.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.