SANTA CRUZ BIOTECHNOLOGY, INC.

GFRα-2 (N-20): sc-7136

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Glial cell line-derived neurotrophic factor (GDNF) and the related neurotrophic factor neurturin (NTN) are potent survival factors for central and peripheral neurons. GDNF is a glycosylated, disulfide-bonded homodimer that is distantly related to the TGFβ superfamily of growth factors. Three receptors for these factors, GFRα-1 (also designated GDNFR-α, RETL1 or TrnR-1), GFRα-2 (also designated GDNFR-β, RETL2, NTNR-α or TrnR-2) and GFRα-3 have been identified. The receptors do not contain transmembrane domains and are attached to the cell membrane by glycosyl-phosphoinositol linkage. Both GFRα-1 and GFRα-2 have been shown to mediate the GDNF-dependent and NTN-dependent phosphorylation and activation of the tyrosine kinase Ret. GFRα-3 is expressed only during development.

REFERENCES

1. Lin, L.F., et al. 1993. GDNF: a glial cell line-derived neurotrophic factor for midbrain dopaminergic neurons. Science 260: 1130-1132.
2. Jing, S., et al. 1996. GDNF-induced activation of the Ret protein tyrosine kinase is mediated by GDNFR-α, a novel receptor for GDNF. Cell 85: 1113-1124.
3. Treanor, J.J., et al. 1996. Characterization of a multi-component receptor for GDNF. Nature 382: 80-83.
4. Kotzbauer, P.T., et al. 1996. Neurturin, a relative of glial-cell-line-derived neurotrophic factor. Nature 384: 467-470.
5. Baloh, R.H., et al. 1997. TrnR2, a novel receptor that mediates neurturin and GDNF signaling through Ret. Neuron 18: 793-802.
6. Naveilhan, P., et al. 1998. Expression and regulation of GFRα-3, a glial cell line-derived neurotrophic factor family receptor. Proc. Natl. Acad. Sci. USA 95: 1295-1300.

CHROMOSOMAL LOCATION

Genetic locus: GFRA2 (human) mapping to 8p21.3; Gfra2 (mouse) mapping to 14 D2.

SOURCE

GFRα-2 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of GFRα-2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7136 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

RESEARCH USE

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

APPLICATIONS

GFRα-2 (N-20) is recommended for detection of GFRα-2 of mouse, rat and 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).

GFRα-2 (N-20) is also recommended for detection of GFRα-2 in additional species, including equine, bovine, porcine and avian.

Suitable for use as control antibody for GFRα-2 siRNA (h): sc-35471, GFRα-2 siRNA (m): sc-35472, GFRα-2 shRNA Plasmid (h): sc-35471-SH, GFRα-2 shRNA Plasmid (m): sc-35472-SH, GFRα-2 shRNA (h) Lentiviral Particles: sc-35471-V and GFRα-2 shRNA (m) Lentiviral Particles: sc-35472-V.

Molecular Weight of GFRα-2: 72 kDa.

Positive Controls: Rat testis extract: sc-2400.

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

1. Cambiasso, M.J., et al. 2000. Differential effect of oestradiol and astroglia-conditioned media on the growth of hypothalamic neurons from male and female rat brains. Eur. J. Neurosci. 12: 2291-2298.
2. Jomary, C., et al. 2004. Expression of neurturin, glial cell line-derived neurotrophic factor, and their receptor components in light-induced retinal degeneration. Invest. Ophthalmol. Vis. Sci. 45: 1240-1246.
3. Serra, M.P., et al. 2005. Ret, GFRα-1, GFRα-2 and GFRα-3 receptors in the human hippocampus and fascia dentata. Int. J. Dev. Neurosci. 23: 425-438.
4. Ito, Y., et al. 2005. Expression of glial cell line-derived neurotrophic factor family members and their receptors in pancreatic cancers. Surgery 138: 788-794.
5. Lee, R.H., et al. 2006. Differential effects of glial cell line-derived neurotrophic factor and neurturin in RET/GFRα-1-expressing cells. J. Neurosci. Res. 83: 80-90.
6. Quartu, M., et al. 2007. Tissue distribution of Ret, GFRα-1, GFRα-2 and GFRα-3 receptors in the human brainstem at fetal, neonatal and adult age. Brain Res. 1173: 36-52.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.