

GFR α -1 (E-11): sc-271546

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 TGF β superfamily of growth factors. Three receptors for these factors, GFR α -1 (also designated GDNFR- α , RETL1 or TrnR-1), GFR α -2 (also designated GDNFR- β , RETL2, NTNR- α or TrnR-2) and GFR α -3 have been identified. The receptors do not contain transmembrane domains and are attached to the cell membrane by glycosyl-phosphoinositol linkage. Both GFR α -1 and GFR α -2 have been shown to mediate the GDNF-dependent and NTN-dependent phosphorylation and activation of the tyrosine kinase Ret. GFR α -3 is expressed only during development.

CHROMOSOMAL LOCATION

Genetic locus: GFRA1 (human) mapping to 10q25.3; Gfra1 (mouse) mapping to 19 D2.

SOURCE

GFR α -1 (E-11) is a mouse monoclonal antibody raised against amino acids 368-437 of GFR α -1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG $_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GFR α -1 (E-11) is available conjugated to agarose (sc-271546 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271546 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271546 PE), fluorescein (sc-271546 FITC), Alexa Fluor® 488 (sc-271546 AF488), Alexa Fluor® 546 (sc-271546 AF546), Alexa Fluor® 594 (sc-271546 AF594) or Alexa Fluor® 647 (sc-271546 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271546 AF680) or Alexa Fluor® 790 (sc-271546 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

GFR α -1 (E-11) is recommended for detection of GFR α -1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 α -1 siRNA (h): sc-35469, GFR α -1 siRNA (m): sc-35470, GFR α -1 siRNA (r): sc-270400, GFR α -1 shRNA Plasmid (h): sc-35469-SH, GFR α -1 shRNA Plasmid (m): sc-35470-SH, GFR α -1 shRNA Plasmid (r): sc-270400-SH, GFR α -1 shRNA (h) Lentiviral Particles: sc-35469-V, GFR α -1 shRNA (m) Lentiviral Particles: sc-35470-V and GFR α -1 shRNA (r) Lentiviral Particles: sc-270400-V.

Molecular Weight of GFR α -1 isoforms: 47/53 kDa.

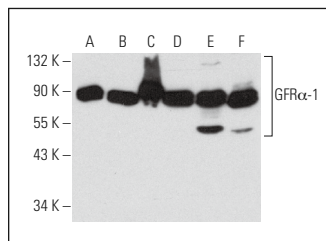
Molecular Weight of glycosylated GFR α -1: 57-88 kDa.

Positive Controls: H4 cell lysate: sc-2408 or C6 whole cell lysate: sc-364373.

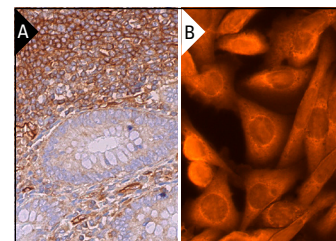
STORAGE

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

DATA



GFR α -1 (E-11): sc-271546. Western blot analysis of GFR α -1 expression in H4 (A), Caki-1 (B), C2C12 (C), NIH/3T3 (D), C6 (E) and NRK (F) whole cell lysates.



GFR α -1 (E-11): sc-271546. Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing membrane and cytoplasmic staining of lymphoid cells (A). GFR α -1 (E-11) Alexa Fluor® 546: sc-271546 AF546. Direct immunofluorescence staining of formalin-fixed SW480 cells showing cytoplasmic and membrane localization. Blocked with UltraCruz® Blocking Reagent: sc-516214 (B).

SELECT PRODUCT CITATIONS

- He, S., et al. 2014. GFR α -1 released by nerves enhances cancer cell perineural invasion through GDNF-RET signaling. *Proc. Natl. Acad. Sci. USA* 111: E2008-E2017.
- Wang, X., et al. 2018. Glial cell-derived neurotrophic factor alleviates sepsis-induced neuromuscular dysfunction by decreasing the expression of γ - and α 7-nicotinic acetylcholine receptors in an experimental rat model of neuromyopathy. *Biochem. Biophys. Res. Commun.* 496: 260-266.
- Moraveji, S.F., et al. 2019. Optimizing methods for human testicular tissue cryopreservation and spermatogonial stem cell isolation. *J. Cell. Biochem.* 120: 613-621.
- Poursaeid, S., et al. 2020. Isolation, characterization, *in vitro* expansion and transplantation of Caspian trout (*Salmo trutta*) type A spermatogonia. *Gen. Comp. Endocrinol.* 289: 113341.
- Solomon, R., et al. 2021. Involvement of cytokines and hormones in the development of spermatogenesis *in vitro* from spermatogonial cells of cyclophosphamide-treated immature mice. *Int. J. Mol. Sci.* 22: 1672.
- Yuan, Z.L., et al. 2022. Activation of GDNF-ERK-Runx1 signaling contributes to P2X3R gene transcription and bone cancer pain. *iScience* 25: 104936.
- Nakamura, A., et al. 2023. PLA2G2E-mediated lipid metabolism triggers brain-autonomous neural repair after ischemic stroke. *Neuron* 111: 2995-3010.e9.
- Avenel, I.C.N., et al. 2024. GDNF/GFRA1 signaling contributes to chemo- and radioresistance in glioblastoma. *Sci. Rep.* 14: 17639.

RESEARCH USE

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

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