

# GFR $\alpha$ -1 (E-11): sc-271546



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

## CHROMOSOMAL LOCATION

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

## SOURCE

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

## PRODUCT

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

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

## APPLICATIONS

GFR $\alpha$ -1 (E-11) is recommended for detection of GFR $\alpha$ -1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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 $\alpha$ -1 siRNA (h): sc-35469, GFR $\alpha$ -1 siRNA (m): sc-35470, GFR $\alpha$ -1 siRNA (r): sc-270400, GFR $\alpha$ -1 shRNA Plasmid (h): sc-35469-SH, GFR $\alpha$ -1 shRNA Plasmid (m): sc-35470-SH, GFR $\alpha$ -1 shRNA Plasmid (r): sc-270400-SH, GFR $\alpha$ -1 shRNA (h) Lentiviral Particles: sc-35469-V, GFR $\alpha$ -1 shRNA (m) Lentiviral Particles: sc-35470-V and GFR $\alpha$ -1 shRNA (r) Lentiviral Particles: sc-270400-V.

Molecular Weight of GFR $\alpha$ -1 isoforms: 47/53 kDa.

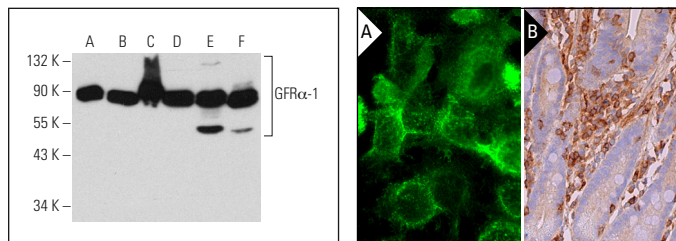
Molecular Weight of glycosylated GFR $\alpha$ -1: 57-88 kDa.

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

GFR $\alpha$ -1 (E-11): sc-271546. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic and membrane localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing membrane and cytoplasmic staining of lymphoid cells (B).

## SELECT PRODUCT CITATIONS

- He, S., et al. 2014. GFR $\alpha$ -1 released by nerves enhances cancer cell perineural invasion through GDNF-RET signaling. Proc. Natl. Acad. Sci. USA 111: E2008-E2017.
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- Wang, X., et al. 2018. Glial cell-derived neurotrophic factor alleviates sepsis-induced neuromuscular dysfunction by decreasing the expression of  $\gamma$ - and  $\alpha$ 7-nicotinic acetylcholine receptors in an experimental rat model of neuromyopathy. Biochem. Biophys. Res. Commun. 496: 260-266.
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## RESEARCH USE

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

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