SANTA CRUZ BIOTECHNOLOGY, INC.

GDNF (E-10): sc-398555

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Glial cell line-derived neurotrophic factor (GDNF) has been identified as a potent neurotrophic factor that enhances survival of midbrain dopaminergic neurons. GDNF is a glycosylated, disulfide-bonded homodimer and is a distantly related member of the TGFβ superfamily of growth regulatory ligands. GDNF contains the seven conserved cysteine residues in the same relative spacing characteristic of all members of the TGFβ superfamily. In embryonic midbrain cultures, GDNF promotes the survival and morphological differentiation of dopaminergic neurons and increases their high-affinity dopamine uptake. On the basis of these findings, it has been suggested that GDNF may have utility in the treatment of Parkinson's disease, which is marked by progressive degeneration of midbrain dopaminergic neurons.

REFERENCES

1. Schubert, D., et al. 1974. Clonal cell lines from the rat central nervous system. Nature 249: 224-227.
2. Derynck, R., et al. 1985. Human transforming growth factor-β complementary DNA sequence and expression in normal and transformed cells. Nature 316: 701-705.
3. ten Dijke, P., et al. 1988. Identification of another member of the transforming growth factor type β gene family. Proc. Natl. Acad. Sci. USA 85: 4715-4719.
4. Miller, D.A., et al. 1990. Transforming growth factor-β: a family of growth regulatory peptides. Ann. N.Y. Acad. Sci. 593: 208-217.
5. Lin, L.H., et al. 1993. GDNF: a glial cell line-derived neurotrophic factor for midbrain dopaminergic neurons. Science 260: 1130-1132.
6. Pozas, E., et al. 2005. GDNF and GFRα-1 promote differentiation and tangential migration of cortical GABAergic neurons. Neuron 45: 701-713.
7. Hofmann, M.C., et al. 2005. Isolation of male germ-line stem cells; influence of GDNF. Dev. Biol. 279: 114-124.

CHROMOSOMAL LOCATION

Genetic locus: GDNF (human) mapping to 5p13.2; Gdnf (mouse) mapping to 15 A1.

SOURCE

GDNF (E-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 174-209 near the C-terminus of GDNF of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-398555 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

GDNF (E-10) is recommended for detection of GDNF p20 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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 GDNF siRNA (h): sc-35462, GDNF siRNA (m): sc-35463, GDNF siRNA (r): sc-156116, GDNF shRNA Plasmid (h): sc-35462-SH, GDNF shRNA Plasmid (m): sc-35463-SH, GDNF shRNA Plasmid (r): sc-156116-SH, GDNF shRNA (h) Lentiviral Particles: sc-35462-V, GDNF shRNA (m) Lentiviral Particles: sc-35463-V and GDNF shRNA (r) Lentiviral Particles: sc-156116-V.

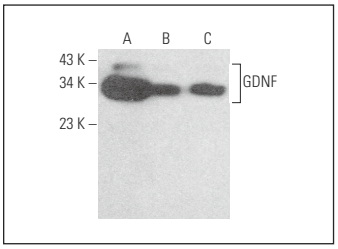
Molecular Weight of GDNF: 15 kDa.

Positive Controls: MIA PaCa-2 cell lysate: sc-2285, PANC-1 whole cell lysate: sc-364380 or T98G cell lysate: sc-2294.

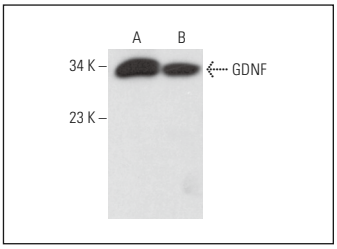
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



GDNF (E-10): sc-398555. Western blot analysis of GDNF expression in PANC-1 (**A**), MIA PaCa-2 (**B**) and T98G (**C**) whole cell lysates.



GDNF (E-10): sc-398555. Western blot analysis of GDNF expression in MIA PaCa-2 (**A**) and HEK293 (**B**) whole cell lysates.

STORAGE

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

CONJUGATES

See **GDNF (B-8): sc-13147** for GDNF antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.