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## Human GFRα-1/GDNF Rα-1 Antibody

Antigen Affinity-purified Polyclonal Goat IgG Catalog Number: AF714

## RDSYSTEMS

DESCRIPTION		
Species Reactivity	Human	
Specificity	Detects human GFRα-1/GDNF Rα-1 in direct ELISAs and Western blots. In direct ELISAs, approximately 10% cross-reactivity with recombinant rat GFRα-1 is observed and less than 5% cross-reactivity with recombinant human (rh) GFRα-2, rhGFRα-3, and rhGFRα-4 is observed.	
Source	Polyclonal Goat IgG	
Purification	Antigen Affinity-purified	
Immunogen	Mouse myeloma cell line NS0-derived recombinant human GFRα-1/GDNF Rα-1 Met1-Lys429 Accession # NP_665736	
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.	

#### APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.			
	Recommended Concentration	Sample	
Western Blot	0.1 µg/mL	Recombinant Human GFRα-1/GDNF Rα-1 Fc Chimera (Catalog # 714-GR)	
Immunohistochemistry	5-15 μg/mL	See Below	

#### DATA

Immunohistochem	istry
	GFRa-1/GDNF Ra-1 in Human         Spinal Cord. GFRa-1/GDNF         Ra-1 was detected in immersion         fixed paraffin-embedded sections         of human spinal cord using Goat         Anti-Human GFRa-1/GDNF Ra-1         Antigen Affinity-purified Polyclonal         Antibody (Catalog # AF714) at 15         µg/mL overnight at 4 °C. Tissue         was stained using the Anti-Goat         HRP-DAB Cell & Tissue Staining         Kit (brown; Catalog # Catalog #         CTS008) and counterstained with         hematoxylin (blue). Specific         staining of Paraffin-embedded         Staining of Paraffin-embedded         Tissue Stections.
PREPARATION AND S	STORAGE
Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<ul> <li>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</li> <li>12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> </ul>

• 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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### BACKGROUND

**R**Dsystems

Glial cell line-derived growth factor (GDNF), neurturin (NTN), artemin and persephin are distant members of the TGF- $\beta$  superfamily. They function as neurotrophic factors for a variety of neuronal populations in the central and peripheral nervous systems. The bioactivities of GDNF and NTN are mediated through a receptor complex composed of the non ligand-binding signaling subunit (c-Ret receptor tyrosine kinase) and either of two ligand binding subunits [GDNF receptor a-1 (GFRa-1) or GFRa-2]. GFRa-1 and -2 are members of a family of at least four cysteine-rich glycosyl-phosphatidylinositol (GPI)-linked cell surface proteins that share conserved placements of many of their cysteine residues. Binding of GDNF to membrane-associated GFRa-1 or GFRa-2 initiates the association with and activation of the Ret tyrosine kinase. Soluble GFRa-1, can also bind with high-affinity to GDNF and trigger the activation of Ret tyrosine kinase.

Human GFRα-1 cDNA encodes a 465 amino acid (aa) residue protein with an N-terminal 24 aa residue hydrophobic signal peptide. Like other GPI-linked proteins, human GFRα-1 has a C-terminal hydrophobic region which is preceded by a three aa residue (ASS) GPI-binding site. Human GFRα-1 shares 93% aa identity with rat GFRα-1. The expression of the various GFRαs are differentially regulated in the central and peripheral nervous system, suggesting complementary roles for the GFRαs in mediating the activities of the GDNF family of neurotrophic factors.

#### References:

- 1. Thompson, J. et al. (1998) Mol. Cell Neurosci. 11:117.
- 2. Trupp, M. et al. (1998) Mol. Cell Neurosci. 11:47.
- 3. Baloh, R.H. et al. (1998) Proc. Natl. Acad. Sci. USA 95:5801.

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