Recombinant Human IGF-II R/IGF2R His-tag

Catalog Number: 11783-GR

DESCRIPTION

Source

Chinese Hamster Ovary cell line, CHO-derived human IGF-II R/IGF2R protein

Human IGF2R (Ser1510-Val2127) Accession # NP_000867.2	(DYKDDDDK)x3	6-His tag

N-terminus C-terminus

N-terminal Sequence Analysis	Ser1510
Predicted Molecular Mass	72 kDa

SPECIFICATIONS

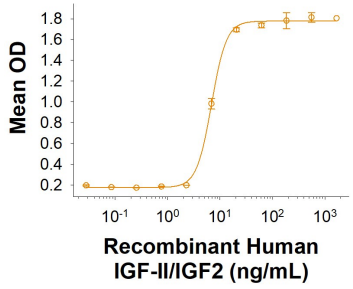
SDS-PAGE	78-89 kDa, under reducing conditions.
Activity	Measured by its binding ability in a functional ELISA. Recombinant Human IGF-II R/IGF2R His-tag (Catalog # 11783-GR) binds to Recombinant Human IGF-II/IGF2 (Catalog # 292-G2) with an ED_{50} of 2.00-20.0 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in water.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

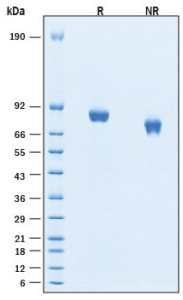
DATA

Binding Activity



Recombinant Human IGF-II R/IGF2R His-tag Protein Binding Activity. In a functional ELISA, Recombinant Human IGF-II R/IGF2R His-tag Protein (Catalog # 11783-GR) binds to Recombinant Human IGF-II/IGF2 (Catalog # 292-G2) with an ED_{50} of 2.00-20.0 ng/mL.

SDS-PAGE



Recombinant Human IGF-II R/IGF2R His-tag Protein SDS-PAGE. 2 µg/lane of Recombinant Human IGF-II R/IGF2R His-tag Protein (Catalog # 11783-GR) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 78-89 kDa, under reducing conditions.

Bio-Techne®
Global | bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL: 1.612.379.2956
USA | TEL: 800.343.7475 Canada | TEL: 855.668.8722 Europe | Middle East | Africa TEL: +44.0.1235.529449
China | info.cn@bio-techne.com TEL: 400.821.3475

Recombinant Human IGF-II R/IGF2R His-tag

Catalog Number: 11783-GR

BACKGROUND

The type 2 insulin-like growth factor receptor (also known as cation-independent mannose-6 phosphate receptor/CI-MPR) is a 300 kDa member of the P-type lectin family of molecules. P-type lectins generate functional eukaryotic lysosomes by binding and sorting lysosomal enzymes expressing phosphorylated mannose residues (M6P) (1-3). IGF-II R is a type I transmembrane glycoprotein that contains a 2,264 amino acid (aa) extracellular region, a 23 aa transmembrane segment and a 124 aa cytoplasmic tail (4, 5). The extracellular region consists of 15 contiguous “binding” repeats of about 150 aa each. The odd-numbered repeats interact with “ligands” while the even-numbered repeats likely generate a nondisulfide homodimer in the membrane (1). Repeat #11 binds IGF-II, while repeats 3 and 9 bind mannose-6 phosphate; repeat #13 contains a fibronectin type II motif and assists in IGF-II binding (1, 2). In the extracellular region of IGF-II R expressed by R&D Systems, human IGF-II R is 85% aa identical to both mouse and bovine IGF-II R. This expressed region includes binding repeats #11, 12, and 13. In addition to IGF-II, CI-MPR/IGF-II R binds non-M6P containing ligands such as retinoic acid, urokinase-type plasminogen-activator receptor and plasminogen, plus M6P-containing molecules such as lysosomal enzymes, TGF-β1 precursor, proliferin, LIF, CD26, herpes simplex glycoprotein D and granzymes A and B (2, 6). IGF-II R regulates many diverse biological functions that range from intracellular trafficking to the internalization of extracellular factors and modulation of cellular responses. It delivers newly synthesized M6P-tagged lysosomal enzymes from the trans-golgi network to endosomes, and facilitates the clearance of extracellular lysosomal and matrix degrading enzymes by internalization into clathrin-coated vesicles and delivery into endosomes. With respect to IGF-II biology, it would appear that IGF-II R is principally a regulator of local IGF-II levels, targeting IGF-II for destruction in lysosomes (2). However, some evidence suggests the receptor will signal via G-proteins, an effect that has yet to be conclusively shown (6).

References:

1. Ghosh, P. *et al.* (2003) Nat. Rev. Mol. Cell. Biol. **4**:202.
2. Dahms, N.M. and M.K. Hancock (2002) Biochim. Biophys. Acta. **1572**:317.
3. Zaina, S. and J. Nilsson (2003) Curr. Opin. Lipidol. **14**:483.
4. Morgan, D.O. *et al.* (1987) Nature **329**:301.
5. Oshima, A. *et al.* (1988) J. Biol. Chem. **263**:2553.
6. Hawkes, C. and S. Kar (2004) Brain Res. Rev. **44**:117.

Bio-Techne®
Global | bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL: 1.612.379.2956
USA | TEL: 800.343.7475 Canada | TEL: 855.668.8722 Europe | Middle East | Africa TEL: +44.0.1235.529449
China | info.cn@bio-techne.com TEL: 400.821.3475