Data Sheet (Cat.No.TMPY-04416)

TargetMol

EphB1 Protein, Human, Recombinant (aa 565-984, His & GST)

General Information

Synonyms:	EPH receptor B1;EPHT2;ELK;Hek6;NET
Protein Construction:	A DNA sequence encoding the human EPHB1 (AAI11745.1) (Arg565-Ala984) was fused with the N-terminal polyhistidine-tagged GST tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	AAI11745.1
Molecular Weight:	75.3 kDa (predicted); 66 kDa (reducing conditions)

QC Testing

Biological Activity:	The specific activity was determined to be 140 nmol/min/mg using Poly(Glu:Tyr) 4:1 as substrate.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Supplied as sterile 20 mM Tris, 500 mM NaCl, 3 mM DTT, pH 8.0, 10% gly.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store the product under sterile conditions at -20°C to -80°C. Samples are stable for up to 12 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Shipping:

Shipping with blue ice.

Protein Background

Ephrin type-B receptor 1, also known as EphB1, belongs to the ephrin receptor subfamily of the protein-tyrosine kinase family which 16 known receptors (14 found in mammals) are involved: EPHA1, EPHA2, EPHA3, EPHA4, EPHA5, EPHA6, EPHA7, EPHA8, EPHA9, EPHA10, EPHB1, EPHB2, EPHB3, EPHB4, EPHB5, EPHB6. EphB2 receptor tyrosine kinase phosphorylates syndecan-2 and that this phosphorylation event is crucial for syndecan-2 clustering and spine formation. The Eph family of receptor tyrosine kinases (comprising EphA and EphB receptors) has been implicated in synapse formation and the regulation of synaptic function and plasticity6. Ephrin receptors are components of cell signalling pathways involved in animal growth and development, forming the largest sub-family of receptor tyrosine kinases (RTKs). Ligand-mediated activation of Ephs induces various important downstream effects and Eph receptors have been studied for their potential roles in the development of cancer.

EphB receptor tyrosine kinases are enriched at synapses, suggesting that these receptors play a role in synapse formation or function. We find that EphrinB binding to EphB induces a direct interaction of EphB with NMDA-type glutamate receptors. This interaction occurs at the cell surface and is mediated by the extracellular regions of the two receptors, but does not require the kinase activity of EphB.

Reference

Dalva MB, et al. (2000) EphB receptors interact with NMDA receptors and regulate excitatory synapse formation. Cell. 103(6): 945-56.
Takasu MA, et al. (2002) Modulation of NMDA receptor-dependent calcium influx and gene expression through EphB receptors. Science. 295(5554): 491-5.
Adams RH, et al. (1999) Roles of ephrinB ligands and EphB receptors in cardiovascular development: demarcation of arterial/venous domains, vascular morphogenesis, and sprouting angiogenesis. Genes Dev. 13(3): 295-306.

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