Data Sheet (Cat.No.TMPY-01997)

TargetMol

EphB1 Protein, Human, Recombinant (His)

General Information

Synonyms:	EPHT2;Hek6;ELK;EPH receptor B1;NET
Protein Construction:	A DNA sequence encoding the human EPHB1 (P54762-1) extracellular domain (Met 1-Pro 540) was expressed, with a polyhistidine tag at the C-terminus. Predicted N terminal: Met 18
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P54762-1
Molecular Weight:	60 kDa (predicted); 60 kDa (reducing conditions)

QC Testing

Biological Activity:	1. Immobilized Human EphB1 His at 2 μg/mL (100 μL/well) can bind Human Ephrin-B1 His & hFc, the EC50 of Human Ephrin-B1 His & hFc is 35-200 ng/mL. 2. Immobilized Human EphB1 His at 2 μg/mL (100 μL/well) can bind Human Ephrin B2 His & hFc, the EC50 of Human Ephrin B2 His & hFc is 1.5-9.0 ng/mL.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4, 5% glycerol. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

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 recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry 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.