Data Sheet (Cat.No.TMPY-00042)

TargetMol

EphB3 Protein, Rat, Recombinant (His)

General Information

Synonyms: EPH receptor B3

Protein Construction: A DNA sequence encoding the rat Ephb3 (NP_001099338.1) (Met1-Thr537) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Leu 30

Species: Rat

Expression Host: HEK293 Cells

Accession: A6JS76

Molecular Weight: 57 kDa (predicted)

QC Testing

Biological Activity: Measured by its binding ability in a functional ELISA. Immobilized rat EPHB3-His at 10 μg/ml (100 μl /well) can bind rat EFNB1-Fc, The EC50 of rat EFNB1-Fc is 2-6 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. 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 3, also known as EphB3 or HEK2, 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. 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

Bergemann AD, et al. (1998) Ephrin-B3, a ligand for the receptor EphB3, expressed at the midline of the developing neural tube. Oncogene. 16(4): 471-80.
Hock B, et al. (1998) PDZ-domain-mediated interaction of the Eph-related receptor tyrosine kinase EphB3 and the ras-binding protein AF6 depends on the kinase activity of the receptor. Proc Natl Acad Sci U S A. 95(17): 9779-84.
Liu X, et al. (2006) EphB3: an endogenous mediator of adult axonal plasticity and regrowth after CNS injury. J Neurosci. 26(12): 3087-101.