

EphA7 Protein, Rat, Recombinant (hFc)

General Information

Synonyms:	Ehk3;Ehk-3;Eph receptor A7
Protein Construction:	A DNA sequence encoding the rat Epha7 (NP_599158.1) (Met1-Ser539) was expressed with the Fc region of human IgG1 at the C-terminus. Predicted N terminal: Gln 28
Species:	Rat
Expression Host:	HEK293 Cells
Accession:	P54759
Molecular Weight:	58.9 kDa (predicted)

QC Testing

Biological Activity:	Measured by its binding ability in a functional ELISA. Immobilized mouse EFNA4-His at 10 µg/ml (100 µl/well) can bind rat EPHA7-Fc3, The EC50 of rat EPHA7-Fc3 is 10-30 ng/mL.
Purity:	> 90 % 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-A receptor 7, also known as EphA7, 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. Eph receptor-mediated signaling, which is triggered by

ephrins7, probably modifies the properties of synapses during synaptic activation and remodeling. 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. Down-regulation of EphA7 secondary to hypermethylation has been reported in colorectal cancer. The expression of EphA7 was reduced in all tested gastric cancer cell lines; however, there is marked variability in expression among gastric carcinoma specimens. EphA7 may have roles in the pathogenesis and development of gastric carcinomas.

Reference

Rashid T, et al. (2005) Opposing gradients of ephrin-As and EphA7 in the superior colliculus are essential for topographic mapping in the mammalian visual system. *Neuron*. 47(1): 57-69.

Wang J, et al. (2007) Differential expression of EphA7 receptor tyrosine kinase in gastric carcinoma. *Hum Pathol*. 38 (11): 1649-56.

Rogers JH, et al. (1999) Distribution of the receptor EphA7 and its ligands in development of the mouse nervous system. *Brain Res Mol Brain Res*. 74(1-2): 225-30.

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