

## Ephrin A3/EFNA3 Protein, Human, Recombinant

### General Information

Synonyms:	Ehk1-L;ephrin-A3;EFL2;LERK3;EPLG3
Protein Construction:	A DNA sequence encoding the human EphrinA3 (NP_004943.1) (Met 1-Ser 213) with quinary-aa peptide (DDDDK) at the C-terminus was expressed and purified. Predicted N terminal: Gln 23
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P52797-1
Molecular Weight:	22 kDa (predicted); 35-40 kDa (reducing condition, due to glycosylation)

### QC Testing

Biological Activity:	Measured by its ability to bind biotinylated mouse EPHA6-Fc in a functional ELISA.
Purity:	> 70 % 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 50 mM Tris, 100 mM NaCl, pH 8.0. 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-A3 also known as EPH-related receptor tyrosine kinase ligand 3 or EFNA3, is a member of the ephrin family. The Eph family receptor interacting proteins (ephrins) are a family of proteins that serve as the ligands of the Eph receptor, which compose the largest known subfamily of receptor protein-tyrosine kinases (RTKs). Ephrin-A3 and their Eph family of receptor tyrosine kinases are expressed by cells of the SVZ. Ephrin subclasses are further

distinguished by their mode of attachment to the plasma membrane: Ephrin-A3 ligands bind EphA receptors and are anchored to the plasma membrane via a glycosylphosphatidylinositol (GPI) linkage, whereas ephrin-B ligands bind EphB receptors and are anchored via a transmembrane domain. Ephrin-A3 expressed on astrocytes activates EphA4 on the post-synaptic neuron and restricts the growth of dendritic spines through multiple pathways.

### Reference

Klein R. (2009) Bidirectional modulation of synaptic functions by Eph/ephrin signaling. *Nat Neurosci.* 12(1): 15-20.

Lai KO, et al. (2009) Synapse development and plasticity: roles of ephrin/Eph receptor signaling. *Curr Opin Neurobiol.* 19(3): 275-83.

Prevost N, et al. (2002) Interactions between Eph kinases and ephrins provide a mechanism to support platelet aggregation once cell-to-cell contact has occurred. *Proc Natl Acad Sci U S A.* 99(14): 9219-24.

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