

Ephrin-A1/EFNA1 Protein, Human (AAH32698.1, HEK293, His)

Cat. No.:	HY-P70164
Synonyms:	rHuEphrin-A1, His; Ephrin-A1; EPH-Related Receptor Tyrosine Kinase Ligand 1; LERK-1; Immediate Early Response Protein B61; Tumor Necrosis Factor Alpha-Induced Protein 4; TNF Alpha-Induced Protein 4; EFNA1; EPLG1; LERK1; TNFAIP4
Species:	Human
Source:	HEK293
Accession:	AAH32698.1/NP_004419.2 (D19-S182)
Gene ID:	1942
Molecular Weight:	25-30 kDa

PROPERTIES

AA Sequence	<pre> DRHTVFWNSS NPKFRNEDYT IHVQLNDYVD IICPHYEDHS VADAAMEQYI LYLVEHEEYQ LCQPQSKDQV RWQCNRPSAK HGPEKLSEKF QRFPTFTLGK EFKEGHSYYY ISKPIHQHED RCLRLKVTVS GKITHSPQAH DNPQEKRLAA DDPEVRVLHS IGH S </pre>
Biological Activity	<p>1. Immobilized Human Ephrin-A1-His at 10 µg/mL (100 µl/well) can bind Human EphA2-Fc. The ED₅₀ for this effect is 12.71 ng/mL.</p> <p>2. Measured by its binding ability in a functional ELISA. When Recombinant Human (rh) EphA2 is coated at 2 µg/mL (100 µL/well), the concentration of rhEphrin-A1 Fc Chimera that produces 50% of the optimal binding response is found to be approximately 4.998 ng/mL.</p>
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 µm filtered solution of 20 mM Tris-HCl, 4% Trehalose, 4% Mannitol, 0.02% Tween 80, pH 8.0 or 20 mM PB, 150 mM NaCl, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	The ephrin family consists of eight members, divided into A and B subclasses based on their mode of cell membrane
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attachment. Ephrin-A1-A5 are linked to the membrane via a Glycosylphosphatidylinositol (GPI) moiety, while ephrin-B1-B3 are anchored by a transmembrane domain and contain a cytoplasmic tail. Due to their membrane localization, ephrins are able to engage in both forward and reverse signaling^[1].

The G-H loop of ephrin-A1, a highly conserved region of 15 amino acids that connects the G and H β -strands, is inserted into a channel on the surface of EphA2 to form a heterodimeric, 1:1 ligand/receptor complex. Ligand binding of ephrin-A1 induces EphA2 autophosphorylation and interaction with c-Cbl followed by internalization and degradation of the receptor^[1].

EphA2 activation by ephrin-A1 decreases cell attachment to ECM and counteracts integrin signalling in multiple cells types leading to Rac-mediated upregulation of Rho activity. ephrin-A1 stimulation of EphA2 leads to the inhibition of both basal and EGF-induced MAPK activity^[1].

The overexpression of the membrane attached form of EFNA1 suppresses growth of HeLa cells in 3D but not 2D. Knockdown of endogenous EFNA1, or overexpression of full-length EFNA1, resulted in relocalization of EPHA2 from the cell surface to sites of cell-cell contact. Overexpression of soluble EFNA1 however resulted in more EPHA2 distributed on the cell surface, away from cell-cell contacts, and promoted the growth of HeLa cells^[2].

EFNA1 binding to CD4+ T cells stimulates both stromal cell-derived factor 1alpha (SDF-1alpha)- and macrophage inflammatory protein 3beta (MIP3beta)-mediated chemotaxis^[3].

Caution: Product has not been fully validated for medical applications. For research use only.

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