



Product Information

EphA5 EXTRACELLULAR DOMAIN/Fc CHIMERA

Rat, Recombinant

Expressed in NSO mouse myeloma cells

Product Number **E 8402**

Storage Temperature $-20\text{ }^{\circ}\text{C}$

Synonyms: Ehk1, Hek7 Bsk, Cek7, Rek7

Product Description

Recombinant rat EphA5 extracellular domain/Fc chimera consists of amino acid residues 1-573 (extracellular domain of rat EphA5)¹ that was fused by means of a polypeptide linker to the Fc portion of human IgG₁ that is histidine-tagged at the carboxyl terminus. The chimeric protein is expressed in a mouse myeloma cell line, NSO. Recombinant EphA5 is a disulfide-linked homodimer. The amino terminus is Ser(58) based on N-terminal sequencing. The calculated molecular mass of the reduced protein is approximately 84 kDa, but as a result of glycosylation, the recombinant EphA5/Fc chimera migrates as an approximately 110 kDa protein on reducing SDS-PAGE.

The Eph receptor family, of which EphA5 is a member, binds members of the Ephrin ligand family. Two classes of receptors exist, designated A and B, that have an extracellular domain made up of a globular domain, a cysteine-rich domain, and two fibronectin type III domains, followed by the transmembrane region and cytoplasmic region. The cytoplasmic region is a juxtamembrane region with two tyrosines, the major autophosphorylation sites, along with a kinase domain, and a conserved sterile alpha motif (SAM) in the carboxyl terminus, the latter including one conserved tyrosine. Ligand recognition and binding leads to kinase activation of the intrinsic kinase activity. EphA5 binds to Ephrin-A1, Ephrin-A2, Ephrin-A3, Ephrin-A4 and Ephrin-A5.^{2,3} Rat EphA5 extracellular domains shares approximately 98.5% amino acid homology with mouse EphA5 and shares a 96.5% amino acid homology with the human homolog. Only membrane-bound or Fc-clustered ligands have been shown to activate the receptor *in vitro*. Soluble monomeric ligands can bind the receptor, but do not induce receptor autophosphorylation and activation.² The ligands and receptors display reciprocal expression *in vivo*.³

Nearly all Ephrin-related receptors and ligands have been found to be expressed in developing and adult neural tissue.³ The Eph/Ephrin families may also play a role in angiogenesis.³

Reagents

Recombinant rat EphA5 extracellular domain/Fc chimera is supplied as approximately 200 μg of protein lyophilized from a sterile filtered phosphate-buffered saline (PBS) solution.

Preparation Instructions

Reconstitute the vial contents with sterile PBS. Stock solution concentration should be no less than 100 $\mu\text{g}/\text{ml}$.

Storage/Stability

Lyophilized samples are stable for more than six months at $-20\text{ }^{\circ}\text{C}$. Upon reconstitution, store at $2-4\text{ }^{\circ}\text{C}$ for up to one month. For extended storage, store in working aliquots at $-20\text{ }^{\circ}\text{C}$. Repeated freeze-thaw cycles should be avoided. Do not store in a frost-free freezer.

Product Profile

EphA5/Fc activity is measured by its ability to bind immobilized recombinant mouse Ephrin-A2/Fc in a functional ELISA assay. Immobilized recombinant rat EphA5/Fc (2 $\mu\text{g}/\text{ml}$, 100 $\mu\text{l}/\text{well}$) binds recombinant mouse Ephrin-A2/Fc with a linear range of 0.16-10 ng/ml. Optimal dilutions should be determined by each laboratory for each application.

Purity: >95% by SDS-PAGE, visualized by silver stain.

Endotoxin level: < 0.1 ng/ μg of protein as determined by the LAL (Limulus amoebocyte lysate) method.

References

1. Taylor V. *et al*, Expression and developmental regulation of Ehk-1, a neuronal Elk-like receptor tyrosine kinase in brain. *Neuroscience*, **63**, 163-178 (1994).
2. Flanagan, J.G. and P. Vanderhaegen, The ephrins and Eph receptors in neural development. *Annu. Rev. Neurosci.*, **21**, 309–345 (1998).
3. Pasquale, E.B., The Eph family of receptors. *Curr. Opin. Cell Biol.*, **9**, 608–615 (1997).

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