

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human EphB3 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human (rh) EphA3, rhEphA4, EphB2, or recombinant mouse EphB3 is observed.
Source	Monoclonal Mouse IgG _{2A} Clone # 647354
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human EphB3 Leu38-Ala550 Accession # P54753
Conjugate	Alexa Fluor 750 Excitation Wavelength: 749 nm Emission Wavelength: 775 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Flow Cytometry	0.25-1 µg/10 ⁶ cells	SH-SY5Y human neuroblastoma cell line

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

EphB3, also known as Cek10, Tyro6, Sek4, Hek2, and Mdk5, is a 110-130 kDa member of the transmembrane Eph receptor tyrosine kinase family. The A and B classes of Eph proteins are distinguished by Ephrin ligand binding preference but have a common structural organization. Eph-Ephrin interactions are widely involved in the regulation of cell migration, tissue morphogenesis, and cancer progression (1). The 526 amino acid (aa) extracellular domain (ECD) of mature human EphB3 contains a ligand binding domain followed by a cysteine rich region and two fibronectin type III domains. The 418 aa cytoplasmic domain contains a tyrosine kinase domain, a sterile alpha motif (SAM), and a PDZ binding motif (2). Within the ECD, human EphB3 shares 96% aa sequence identity with mouse and rat EphB3. Binding of EphB3 to its ligands Ephrin-B1, B2, and B3 triggers forward signaling through EphB3 as well as reverse signaling through the Ephrin (1, 3). EphB3 also interacts *in cis* with the receptor tyrosine kinase Ryk (4). Activation of its kinase is required for some but not all of the effects of EphB3 on cellular adhesion, motility, and morphology (5). EphB3 is widely expressed during development and in the adult; it shows a complementary tissue distribution to the Ephrin-B ligands (6-9). EphB3 function is important in vascular, nervous system, thymocyte, and palate development (6, 7, 10-12). It directs embryonic neuronal axon pathfinding, and its upregulation on local macrophages following neuronal injury promotes the growth of regenerating axons (10, 13). EphB3 inhibits colorectal carcinogenesis and invasion by preventing the migration of tumor cells out of the intestinal crypt (9, 14). EphB3 function is supported by the cooperative action of EphB2 in several of these processes (6, 10-12, 15).

References:

1. Pasquale, E.B. (2008) *Cell* **133**:38.
2. Bohme, B. *et al.* (1993) *Oncogene* **8**:2857.
3. Pasquale, E.B (2004) *Nat. Neurosci.* **7**:417.
4. Trivier, E. and T.S. Ganesan (2002) *J. Biol. Chem.* **277**:23037.
5. Miao, H. *et al.* (2005) *J. Biol. Chem.* **280**:923.
6. Adams, R.H. *et al.* (1999) *Genes Dev.* **13**:295.
7. Krull, C.E. *et al.* (1997) *Curr. Biol.* **7**:571.
8. Willson, C.A. *et al.* (2006) *J. Mol. Histol.* **37**:369.
9. Cortina, C. *et al.* (2007) *Nature Genet.* **39**:1376.
10. Birgbauer, E. *et al.* (2000) *Development* **127**:1231.
11. Alfaro, D. *et al.* (2008) *Immunology* **125**:131.
12. Rislely, M. *et al.* (2009) *Mech. Dev.* **126**:230.
13. Liu, X. *et al.* (2006) *J. Neurosci.* **26**:3087.
14. Battle, E. *et al.* (2005) *Nature* **435**:1126.
15. Holmberg, J. *et al.* (2006) *Cell* **125**:1151.

PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.