

DESCRIPTION

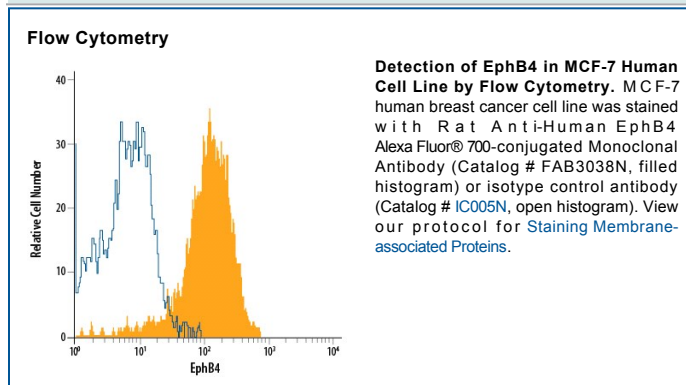
Species Reactivity	Human
Specificity	Detects human EphB4 in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant human EphA1, A2, A5, A6, A10, B2, B3, B6, recombinant mouse EphA3, A4, or recombinant rat EphB1 is observed.
Source	Monoclonal Rat IgG ₁ Clone # 395810
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human EphB4 Ala16-Ala539 Accession # AAH52804
Conjugate	Alexa Fluor 700 Excitation Wavelength: 675-700 nm Emission Wavelength: 723 nm
Formulation	Supplied 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	5 μ L/10 ⁶ cells	See Below

DATA



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

EphB4, also known as Htk, Myk1, Tyro11, and Mdk2, is a member of the Eph receptor tyrosine kinase family and binds Ephrin-B2. The A and B class Eph proteins have a common structural organization (1-4). The human EphB4 cDNA encodes a 987 amino acid precursor that includes a 15 amino acid (aa) signal sequence, a 524 aa extracellular domain (ECD), a 21 aa transmembrane segment, and a 427 aa cytoplasmic domain (5). The ECD contains an N-terminal globular domain, a cysteine-rich domain, and two fibronectin type III domains. The cytoplasmic domain contains a juxtamembrane motif with two tyrosine residues which are the major autophosphorylation sites, a kinase domain, and a conserved sterile alpha motif (SAM) (5). Activation of kinase activity occurs after membrane-bound or clustered ligand recognition and binding. The ECD of human EphB4 shares 89% aa sequence identity with mouse EphB4 and 42-45% aa sequence identity with human EphB1, 2, and 3. EphB4 is expressed preferentially on venous endothelial cells (EC) and inhibits cell-cell adhesion, chemotaxis, and angiogenesis. Opposing effects are induced by signaling through Ephrin-B2 expressed on arterial EC: adhesion, endothelial cell migration, and vessel sprouting (6). EphB4 signaling contributes to new vascularization by guiding venous EC away from Ephrin-B2 expressing EC. Ephrin-B2 signaling induces arterial EC to migrate towards nascent EphB4 expressing vessels (6). The combination of forward signaling through EphB4 and reverse signaling through Ephrin-B2 promotes *in vivo* mammary tumor growth and tumor-associated angiogenesis (7). EphB4 promotes the differentiation of megakaryocytic and erythroid progenitors but not granulocytic or monocytic progenitors (8, 9).

References:

1. Poliakov, A. *et al.* (2004) *Dev. Cell* **7**:465.
2. Surawska, H. *et al.* (2004) *Cytokine Growth Factor Rev.* **15**:419.
3. Pasquale, E.B. (2005) *Nat. Rev. Mol. Cell Biol.* **6**:462.
4. Davy, A. and P. Soriano (2005) *Dev. Dyn.* **232**:1.
5. Bennett, B.D. *et al.* (1994) *J. Biol. Chem.* **269**:14211.
6. Fuller, T. *et al.* (2003) *J. Cell Sci.* **116**:2461.
7. Noren, N.K. *et al.* (2004) *Proc. Natl. Acad. Sci.* **101**:5583.
8. Wang, Z. *et al.* (2002) *Blood* **99**:2740.
9. Inada, T. *et al.* (1997) *Blood* **89**:2757.

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.