Human EphB2 Antibody

Monoclonal Mouse IgG_{2A} Clone # 669025

Catalog Number: MAB5189

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human EphB2 in direct ELISAs. In Western blots, less than 5% cross-reactivity with recombinant human (rh) EphA1, 2, 5, 6, 10, rhEphB3, 4, 6, recombinant mouse (rm) EphA3, 4, 7, 8, rmEphB2, or recombinant rat EphB1 is observed.
Source	Monoclonal Mouse IgG_{2A} Clone # 669025
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human EphB2 Val19-Leu543 Accession # P29323
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

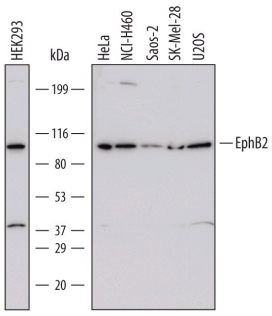
APPLICATIONS

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
Western Blot	1 µg/mL	See Below

DATA

Western Blot



Detection of Human EphB2 by Western Blot. Western blot shows lysates of HEK293 human embryonic kidney cell line transfected with human EphB2, HeLa human cervical epithelial carcinoma cell line, NCI-H460 human large cell lung carcinoma cell line, Saos-2 human osteosarcoma cell line, SK-Mel-28 human malignant melanoma cell line, and U2OS human osteosarcoma cell line. PVDF Membrane was probed with 1 µg/mL of Human EphB2 Monoclonal Antibody (Catalog # MAB5189) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). A specific band was detected for EphB2 at approximately 105 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.5 mg/mL.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month from date of receipt, 2 to 8 °C, reconstituted. ● 6 months from date of receipt, -20 to -70 °C, reconstituted.

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BACKGROUND

EphB2, also known as Cek5, Nuk, Erk, Qek5, Tyro5, Sek3, Hek5, and Drt, is a 125 kDa member of the transmembrane Eph receptor tyrosine kinase family that binds members of the Ephrin family on adjacent cells. The interaction triggers forward signaling in the receptor-expressing cells through the Eph receptor and reverse signaling in the ligand-expressing cells through Ephrin (1, 2). Human EphB2 cDNA encodes a 1055 amino acid (aa) precursor, which includes an 18 aa signal sequence, a 525 aa extracellular domain (ECD), a 21 aa transmembrane segment, and a 491 aa cytoplasmic domain. The ECD contains a cysteine-rich region followed by two fibronectin type III domains. The cytoplasmic domain contains the tyrosine kinase domain, a sterile alpha motif (SAM), and a PDZ binding motif (3). Human EphB2 shares 99% aa sequence identity with mouse and rat EphB2 within the ECD region. A short isoform that lacks 70 aa at the C-terminus has also been reported (4). Hippocampal neurons can release vesicles containing full length EphB2, and these are taken up by neighboring glial cells (5). EphB2 is expressed on both sides of the neuronal synapse. It controls axon guidance across the embryonic midline, promotes a neuronal fate from neural precursors, and regulates NMDA receptor activity (6 10). EphB2 interaction with Ephrin A5 promotes axonal growth cone collapse, while its interaction with Ephrin B ligands is required for inner ear, renal, urorectal, and vascular development (6, 11 15). Signaling in Ephrin-expressing cells through EphB2-Ephrin complex requires proteolytic cleavage of EphB2 that releases its extracellular domain (16). Following the shedding of the extracellular domain of EphB2, the cytoplasmic domain of EphB2 is released from the plasma membrane by the presenilin-dependent γ-secretase activity to initiate a signaling cascade in the EphB2-expressing cells (16). Aberrant EphB2 expression and activity are implicated in the progression of several cancers (17).

References:

1. Pasquale, E.B. (2008) Cell 133:38.
2. MerlosSuarez, A. and E. Batlle (2008) Curr. Opin. Cell Biol. 20:194.
3. Fox, G.M. et al. (1995) Oncogene 10:897.
4. Tang, X.X. et al. (1998) Oncogene 17:521.
5. Lauterbach, J. and R. Klein (2006) J. Neurosci. 26:11575.
6. Cowan C.A. et al. (2000) Neuron 26:417.
7. Bouvier, D. et al. (2008) J. Neurochem. 106:682.
8. Cramer, K.S. et al. (2006) Dev. Biol. 295:76.
9. Katakowski, M. et al. (2005) Neurosci. Lett. 385:204.
10. Henderson, J.T. et al. (2001) Neuron 32:1041.
11. Himanen, J.P.et al. (2004) Nat. Neurosci. 7:501.
12. Dravis, C. et al. (2007) Hear. Res. 223:93.
13. Dravis, C. et al. (2004) Dev. Biol. 271:272.
14. Ogawa, K. et al. (2006) J. Cell Sci. 119:559.
15. Salvucci, O. et al. (2006) Blood 108:2914.
16. Litterst, C. et al. (2007) J. Biol. Chem. 282:16155.

17. Castano, J. et al. (2008) Histol. Histopathol. 23:1011.