Backround: The Eph receptors are the largest known family of receptor tyrosine kinases (RTKs). They can be divided into two groups based on sequence similarity and on their preference for a subset of ligands: EphA receptors bind to a glycosylphosphatidylinositol-anchored ephrin A ligand, and EphB receptors bind to ephrin B proteins that have a transmembrane and cytoplasmic domain (1,2). Eph receptors and ligands may be involved in many diseases including cancer (3). Both ephrin A and ephrin B ligands have dual functions. As RTK ligands, the ephrins stimulate the kinase activity of the Eph receptors and activate signaling pathways in receptor-expressing cells. The ephrin extracellular domain is sufficient for this function as long as it is clustered (4). The second function of ephrins has been described as “reverse signaling,” whereby the cytoplasmic domain becomes tyrosine phosphorylated, allowing interactions with other proteins that may activate signaling pathways in the ligand-expressing cells (5). Various stimuli can induce tyrosine phosphorylation of ephrin B, including binding to EphB receptors, activation of Src kinase and stimulation by PDGF and FGF (6). Tyrosines 324/327 have been identified as major phosphorylation sites of ephrin B1 in vivo (5). Various stimuli can induce tyrosine phosphorylation of ephrin B, including binding to EphB receptors, activation of Src kinase and stimulation by PDGF and FGF (6). Tyrosines 324/327 have been identified as major phosphorylation sites of ephrin B1 in vivo (5). Various stimuli can induce tyrosine phosphorylation of ephrin B, including binding to EphB receptors, activation of Src kinase and stimulation by PDGF and FGF (6). Tyrosines 324/327 have been identified as major phosphorylation sites of ephrin B1 in vivo (5).

EphA2 is overexpressed in various tumor cells, and it has been suggested that EphA2 may promote malignancy. However, several studies demonstrate that EphA2 plays an important role in tumor suppression (6). The role of EphA2 in tumor development may depend upon regulation of its tyrosine kinase activity.

Specificity/Sensitivity: EphA2 (D4A2) XP® Rabbit mAb recognizes endogenous levels of total EphA2 protein.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a human EphA2 recombinant protein fragment.

Western blot analysis of extracts from various cell lines using EphA2 (D4A2) XP® Rabbit mAb

Recommended Antibody Dilutions:

Western blotting 1:1000
Immunoprecipitation 1:100
Immunohistochemistry (Paraffin) 1:200†
Unmasking buffer: EDTA
Antibody diluent: SignalStain® Antibody Diluent #8112
Detection reagent: SignalStain® Boost (HRP, Rabbit) #8114†
Optimal IHC dilutions determined using SignalStain® Boost IHC Detection Reagent.
Immunofluorescence (IF-IC) 1:200

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

Background References:

Immunohistochemical analysis of paraffin-embedded SNB19 (left) and SKMEL28 (right) cell pellets using EphA2 (D4A2) XP® Rabbit mAb.

Immunohistochemical analysis of paraffin-embedded ovarian carcinoma using EphA2 (D4A2) XP® Rabbit mAb.

Immunohistochemical analysis of paraffin-embedded human non-small cell lung carcinoma using EphA2 (D4A2) XP® Rabbit mAb.