

MerTK (B-4): sc-515338

BACKGROUND

MerTK, also called c-Mer, is a member of the Mer/Axl/Tyro3 receptor kinase family. It is a 984 residue transmembrane protein made up of one tyrosine kinase domain, 2 Fibronectin type-III domains and 2 immunoglobulin-like C2-type domains. MerTK is the mammalian ortholog of the chicken retroviral oncogene product v-Eyk. This protein plays a critical role in macrophage activation, platelet aggregation, clot stability and the efficient removal of apoptotic cells. Specifically, MerTK acts as a signaling molecule, triggering outer segment ingestion in the retinal pigment epithelium (RPE) phagocytic process. Evidence suggests that MerTK signals via interaction with phosphatidylinositol-specific phospholipase C γ 2 (PI-PLC γ 2). When the gene encoding for MerTK is mutated, the RPE phagocytosis pathway is disrupted and autosomal recessive retinitis pigmentosa (RP) may result, leading to degeneration of retinal photoreceptor cells.

REFERENCES

- Graham, D.K., et al. 1994. Cloning and mRNA expression analysis of a novel human proto-oncogene, c-Mer. *Cell Growth Differ.* 5: 647-657.
- Gal, A., et al. 2000. Mutations in MerTK, the human orthologue of the RCS rat retinal dystrophy gene, cause retinitis pigmentosa. *Nat. Genet.* 26: 270-271.
- D'Cruz, P.M., et al. 2000. Mutation of the receptor tyrosine kinase gene MerTK in the retinal dystrophic RCS rat. *Hum. Mol. Genet.* 9: 645-651.
- Kumar, A., et al. 2001. Retinitis pigmentosa: mutations in a receptor tyrosine kinase gene, MerTK. *J. Biosci.* 26: 3-5.
- Feng, W., et al. 2002. Mertk triggers uptake of photoreceptor outer segments during phagocytosis by cultured retinal pigment epithelial cells. *J. Biol. Chem.* 277: 17016-17022.
- Todt, J.C., et al. 2004. The receptor tyrosine kinase MerTK activates phospholipase C γ 2 during recognition of apoptotic thymocytes by murine macrophages. *J. Leukoc. Biol.* 75: 705-713.

CHROMOSOMAL LOCATION

Genetic locus: Mertk (mouse) mapping to 2 F1.

SOURCE

MerTK (B-4) is a mouse monoclonal antibody raised against amino acids 1-217 mapping within an N-terminal extracellular domain of MerTK of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

MerTK (B-4) is recommended for detection of MerTK of mouse origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MerTK siRNA (m): sc-37128, MerTK shRNA Plasmid (m): sc-37128-SH and MerTK shRNA (m) Lentiviral Particles: sc-37128-V.

Molecular Weight of MerTK: 110 kDa.

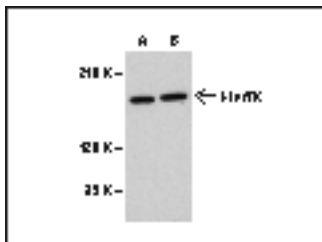
Molecular Weight of glycosylated MerTK: 140-205 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211 or NIH/3T3 whole cell lysate: sc-2210.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



MerTK (B-4) sc-515338. Western blot analysis of MerTK expression in NIH/3T3 (A) and RAW 264.7 (B) whole cell lysates.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CONJUGATES

See **MerTK (B-1): sc-365499** for MerTK antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.