

MerTK (348): sc-53984

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

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- Gal, A., et al. 2000. Mutations in MerTK, the human ortholog 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.
- Graham, D.K., et al. 2006. Ectopic expression of the proto-oncogene Mer in pediatric T cell acute lymphoblastic leukemia. *Clin. Cancer Res.* 12: 2662-2669.
- Tschernutter, M., et al. 2006. Clinical characterization of a family with retinal dystrophy caused by mutation in the MerTK gene. *Br. J. Ophthalmol.* 90: 718-723.
- Cheong, H.S., et al. 2007. MerTK polymorphisms associated with risk of hematological disorders among Korean SLE patients. *Rheumatology* 46: 209-214.

STORAGE

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

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: MERTK (human) mapping to 2q13.

SOURCE

MerTK (348) is a mouse monoclonal antibody raised against the extracellular domain of recombinant MerTK of human 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.

APPLICATIONS

MerTK (348) is recommended for detection of MerTK of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for MerTK siRNA (h): sc-37127, MerTK shRNA Plasmid (h): sc-37127-SH and MerTK shRNA (h) Lentiviral Particles: sc-37127-V.

Molecular Weight of MerTK: 110 kDa.

Molecular Weight of glycosylated MerTK: 140-205 kDa.

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, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

RESEARCH USE

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



See **MerTK (B-1): sc-365499** for MerTK antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.