

melanotransferrin (A-3): sc-271006

BACKGROUND

Melanotransferrin is a member of the transferrin family of iron-binding proteins, which also includes serum transferrin, lactoferrin and ovotransferrin, and it is highly expressed on melanoma cells. Melanotransferrin, also designated p97, shares a high degree of homology with transferrin, but does not play a significant role in the uptake of iron. Melanotransferrin utilizes a member of the low-density lipoprotein receptor family for transendothelial transport, which is not as efficient as the transport of transferrin through the corresponding transferrin receptor. The gene encoding human melanotransferrin maps to chromosome 3q29, and is predominantly expressed as either a membrane bound protein or a secreted form of the protein. Melanotransferrin is expressed in brain, where it may be involved in Alzheimer's disease. Melanotransferrin may also protect against membrane-lipid peroxidation, possess a metalloprotease activity and possibly participate in intracellular adhesion. Further research will be necessary to fully elucidate the functions of this protein.

REFERENCES

1. Le Beau, M.M., et al. 1986. Chromosomal sublocalization of the human p97 melanoma antigen. *Hum. Genet.* 72: 294-296.
2. Garratt, R.C., et al. 1992. A molecular model for the tumour-associated antigen, p97, suggests a Zn-binding function. *FEBS Lett.* 305: 55-61.
3. Rothenberger, S., et al. 1996. Coincident expression and distribution of melanotransferrin and transferrin receptor in human brain capillary endothelium. *Brain Res.* 712: 117-121.
4. Yamada, T., et al. 1999. Melanotransferrin is produced by senile plaque-associated reactive microglia in Alzheimer's disease. *Brain Res.* 845: 1-5.
5. Richardson, D.R. 2000. The role of the membrane-bound tumour antigen, melanotransferrin (p97), in iron uptake by the human malignant melanoma cell. *Eur. J. Biochem.* 267: 1290-1298.
6. Sekyere, E. and Richardson, D.R. 2000. The membrane-bound transferrin homologue melanotransferrin: roles other than iron transport? *FEBS Lett.* 483: 11-16.
7. Demeule, M., et al. 2002. High transcytosis of melanotransferrin (P97) across the blood-brain barrier. *J. Neurochem.* 83: 924-933.
8. Sala, R., et al. 2002. The human melanoma associated protein melanotransferrin promotes endothelial cell migration and angiogenesis *in vivo*. *Eur. J. Cell Biol.* 81: 599-607.

CHROMOSOMAL LOCATION

Genetic locus: MF12 (human) mapping to 3q29.

SOURCE

melanotransferrin (A-3) is a mouse monoclonal antibody raised against amino acids 601-670 mapping near the C-terminus of melanotransferrin of human origin.

RESEARCH USE

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

PRODUCT

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

APPLICATIONS

melanotransferrin (A-3) is recommended for detection of melanotransferrin of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 melanotransferrin siRNA (h): sc-41373, melanotransferrin shRNA Plasmid (h): sc-41373-SH and melanotransferrin shRNA (h) Lentiviral Particles: sc-41373-V.

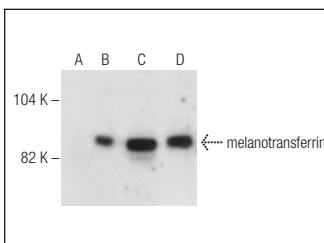
Molecular Weight of melanotransferrin: 82 kDa.

Positive Controls: SK-MEL-28 cell lysate: sc-2236, SK-MEL-24 whole cell lysate: sc-364259 or melanotransferrin (h): 293T Lysate: sc-171124.

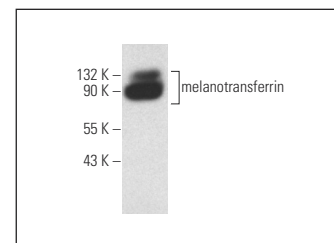
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



melanotransferrin (A-3): sc-271006. Western blot analysis of melanotransferrin expression in non-transfected 293T: sc-117752 (A), human melanotransferrin transfected 293T: sc-171124 (B) and SK-MEL-28 (C) whole cell lysates and human skin tissue extract (D).



melanotransferrin (A-3): sc-271006. Western blot analysis of melanotransferrin expression in SK-MEL-24 whole cell lysate.

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.