

THEM2 (G-5): sc-373697

The Power to Question

BACKGROUND

Esterases comprise a superfamily of hydrolase enzymes that use water to catalyze the dissociation of an ester into an acid and an alcohol. The thioesterases, a subfamily of esterase proteins, exhibit thiol-specific esterase activity. THEM2 (thioesterase superfamily member 2), also known as HT012 or PNAS-27, is a 140 amino acid proteins that belongs to the thioesterase subfamily of esterase enzymes. Highly expressed in kidney with moderate expression in brain, liver and intestines, THEM2 contains a hotdog-fold and is thought to co-localize with microtubules, possibly playing a role in cellular proliferation events. The gene encoding THEM2 maps to chromosome 6, which contains 170 million base pairs and comprises nearly 6% of the human genome. Deletion of a portion of the q arm of chromosome 6 is associated with early onset intestinal cancer, suggesting the presence of a cancer susceptibility locus. Additionally, porphyria cutanea tarda, Parkinson's disease, Stickler syndrome and a susceptibility to bipolar disorder are all associated with genes that map to chromosome 6.

REFERENCES

1. Mungall, A.J., et al. 2003. The DNA sequence and analysis of human chromosome 6. *Nature* 425: 805-811.
2. Lucas, B., et al. 2005. HNF4 α reduces proliferation of kidney cells and affects genes deregulated in renal cell carcinoma. *Oncogene* 24: 6418-6431.
3. Cheng, Z., et al. 2006. Crystal structure of human thioesterase superfamily member 2. *Biochem. Biophys. Res. Commun.* 349: 172-177.
4. Cheng, Z., et al. 2006. Human thioesterase superfamily member 2 (hTHEM2) is co-localized with β -Tubulin onto the microtubule. *Biochem. Biophys. Res. Commun.* 350: 850-853.
5. Kanno, K., et al. 2007. Interacting proteins dictate function of the minimal START domain phosphatidylcholine transfer protein/StarD2. *J. Biol. Chem.* 282: 30728-30736.
6. Grigo, K., et al. 2008. HNF4 α orchestrates a set of 14 genes to down-regulate cell proliferation in kidney cells. *Biol. Chem.* 389: 179-187.

CHROMOSOMAL LOCATION

Genetic locus: ACOT13 (human) mapping to 6p22.3; Acot13 (mouse) mapping to 13 A3.1.

SOURCE

THEM2 (G-5) is a mouse monoclonal antibody raised against amino acids 53-140 mapping at the C-terminus of THEM2 of human origin.

PRODUCT

Each vial contains 200 μ g IgG $_1$ 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

THEM2 (G-5) is recommended for detection of THEM2 of mouse, rat and human 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

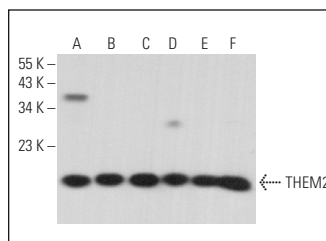
Suitable for use as control antibody for THEM2 siRNA (h): sc-95646, THEM2 siRNA (m): sc-154253, THEM2 shRNA Plasmid (h): sc-95646-SH, THEM2 shRNA Plasmid (m): sc-154253-SH, THEM2 shRNA (h) Lentiviral Particles: sc-95646-V and THEM2 shRNA (m) Lentiviral Particles: sc-154253-V.

Molecular Weight of THEM2: 15 kDa.

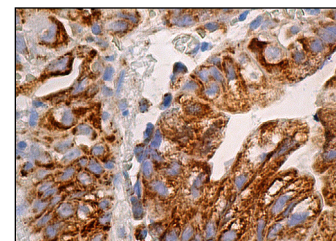
Positive Controls: Hep G2 cell lysate: sc-2227, Raji whole cell lysate: sc-364236 or NAMALWA cell lysate: sc-2234.

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). 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. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA

THEM2 (G-5): sc-373697. Western blot analysis of THEM2 expression in Hep G2 (A), Raji (B), NAMALWA (C), RAW 264.7 (D), WEHI-231 (E) and MM-142 (F) whole cell lysates.



THEM2 (G-5): sc-373697. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic staining of glandular cells.

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.