

THEM2 (F-3): sc-514392



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 (F-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 118-140 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.

Blocking peptide available for competition studies, sc-514392 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

THEM2 (F-3) 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) 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.

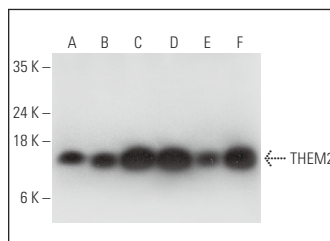
Positive Controls: Hep G2 cell lysate: sc-2227, K-562 whole cell lysate: sc-2203 or human liver extract: sc-363766.

RECOMMENDED SUPPORT REAGENTS

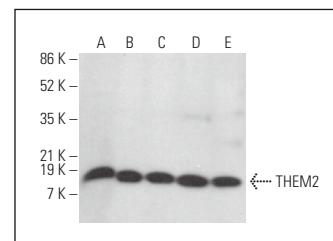
To ensure optimal results, the following support reagents are recommended:

- 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.

DATA



THEM2 (F-3): sc-514392. Western blot analysis of THEM2 expression in HeLa (A), Ramos (B), Hep G2 (C) and K-562 (D) whole cell lysates and human cerebellum (E) and human liver (F) tissue extracts.



THEM2 (F-3): sc-514392. Western blot analysis of THEM2 expression in Hep G2 (A), Raji (B), BJAB (C), MM-142 (D) and HEL 92.1.7 (E) whole cell lysates.

STORAGE

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

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.