

# THEM2 (B-12): sc-373696

## 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 $\alpha$  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  $\beta$ -Tubulin onto the microtubule. *Biochem. Biophys. Res. Commun.* 350: 850-853.

## CHROMOSOMAL LOCATION

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

## SOURCE

THEM2 (B-12) 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  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

THEM2 (B-12) is available conjugated to agarose (sc-373696 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-373696 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373696 PE), fluorescein (sc-373696 FITC), Alexa Fluor<sup>®</sup> 488 (sc-373696 AF488), Alexa Fluor<sup>®</sup> 546 (sc-373696 AF546), Alexa Fluor<sup>®</sup> 594 (sc-373696 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-373696 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-373696 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-373696 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## RESEARCH USE

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

## APPLICATIONS

THEM2 (B-12) 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  $\mu$ g per 100-500  $\mu$ 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.

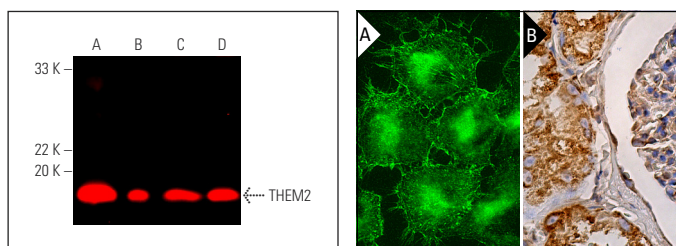
Molecular Weight of THEM2: 15 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, Ramos cell lysate: sc-2216 or K-562 whole cell lysate: sc-2203.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



THEM2 (B-12): sc-373696. Near-infrared western blot analysis of THEM2 expression in human liver tissue extract (A) and K-562 (B), Hep G2 (C) and Ramos (D) whole cell lysates. Blocked with UltraCruz<sup>®</sup> Blocking Reagent: sc-516214. Detection reagent used: m-IgG $\kappa$  BP-CFL 790: sc-516181.

THEM2 (B-12): sc-373696. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (B).

## STORAGE

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

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