

# Themis (A-11): sc-514012

## BACKGROUND

Themis (thymocyte-expressed molecule involved in selection) is a 641 amino acid nuclear and cytoplasmic protein that exists as 3 alternatively spliced isoforms. Themis belongs to the themis family and interacts with PLC  $\gamma$ 1, Emt and GRB2. Acting through T-cell antigen receptor (TCR) signaling and through the regulation of calcium influx and phosphorylation of ERK 1, Themis plays a central role in late thymocyte development by controlling both positive and negative T-cell selection. Themis is phosphorylated on Tyr residues quickly after TCR stimulation. The gene that encodes Themis maps to human chromosome 6q22.33. With 170 million base pairs, chromosome 6 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. Brill, L.M., et al. 2004. Robust phosphoproteomic profiling of tyrosine phosphorylation sites from human T cells using immobilized metal affinity chromatography and tandem mass spectrometry. *Anal. Chem.* 76: 2763-2772.
2. Bläker, H., et al. 2008. Recurrent deletions at 6q in early age of onset non-HNPCC- and non-FAP-associated intestinal carcinomas. Evidence for a novel cancer susceptibility locus at 6q14-q22. *Genes Chromosomes Cancer* 47: 159-164.

## CHROMOSOMAL LOCATION

Genetic locus: THEMIS (human) mapping to 6q22.33; Themis (mouse) mapping to 10 A4.

## SOURCE

Themis (A-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 6-24 at the N-terminus of Themis of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Themis (A-11) is available conjugated to agarose (sc-514012 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514012 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514012 PE), fluorescein (sc-514012 FITC), Alexa Fluor® 488 (sc-514012 AF488), Alexa Fluor® 546 (sc-514012 AF546), Alexa Fluor® 594 (sc-514012 AF594) or Alexa Fluor® 647 (sc-514012 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514012 AF680) or Alexa Fluor® 790 (sc-514012 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-514012 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## APPLICATIONS

Themis (A-11) is recommended for detection of Themis 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Themis siRNA (h): sc-95448, Themis siRNA (m): sc-143258, Themis shRNA Plasmid (h): sc-95448-SH, Themis shRNA Plasmid (m): sc-143258-SH, Themis shRNA (h) Lentiviral Particles: sc-95448-V and Themis shRNA (m) Lentiviral Particles: sc-143258-V.

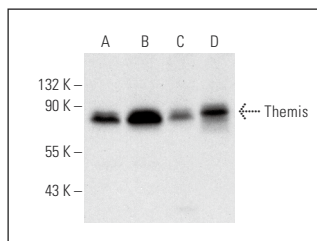
Molecular Weight of Themis isoforms: 73/69/63 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, MOLT-4 cell lysate: sc-2233 or Jurkat nuclear extract: sc-2132.

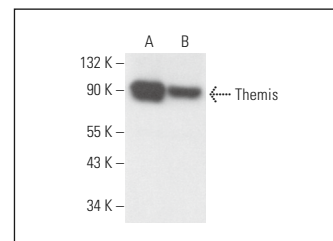
## RECOMMENDED SUPPORT REAGENTS

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™ 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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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



Themis (A-11): sc-514012. Western blot analysis of Themis expression in Jurkat (A) and MOLT-4 (B) whole cell lysates, Jurkat nuclear extract (C) and human thymus tissue extract (D).



Themis (A-11): sc-514012. Western blot analysis of Themis expression in Jurkat (A) and CCRF-CEM (B) 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](http://www.scbt.com) for detailed protocols and support products.