

# TOX (H-2): sc-374137

## BACKGROUND

TOX (thymocyte selection-associated high mobility group (HMG) box protein) is a 526 amino acid nuclear protein that is a member of the HMG box family of DNA-binding proteins and likely plays a role in the regulation of T-cell development. Expression of TOX is upregulated by pre-T cell receptor (pre-TCR) and TCR activation in immature thymocytes, but not by TCR activation in mature thymocytes. CD4 T cells fail to develop in TOX-deficient mice, however functional CD8<sup>+</sup> T cells still develop, suggesting that TOX-dependent transition to the CD4<sup>+</sup>CD8 stage is required for development of class II major histocompatibility complex-specific T cells. Calcineurin activation events and CD8 lineage commitment seem to be linked due to evidence that up-regulation of TOX in double positive thymocytes is calcineurin dependent.

## REFERENCES

- Saito, T., et al. 1998. Positive and negative thymocyte selection. *Crit. Rev. Immunol.* 18: 359-370.
- Mitnacht, R., et al. 1998. Opposite CD4/CD8 lineage decisions of CD4<sup>+</sup> mouse and rat thymocytes to equivalent triggering signals: correlation with thymic expression of a truncated CD8  $\alpha$  chain in mice but not rats. *J. Immunol.* 160: 700-707.
- Wilkinson, B., et al. 2002. TOX: an HMG box protein implicated in the regulation of thymocyte selection. *Nat. Immunol.* 3: 272-280.
- Aliahmad, P., et al. 2004. TOX provides a link between calcineurin activation and CD8 lineage commitment. *J. Exp. Med.* 199: 1089-1099.
- Laky, K., et al. 2005. Receptor signals and nuclear events in CD4 and CD8 T cell lineage commitment. *Curr. Opin. Immunol.* 17: 116-121.
- Aliahmad, P., et al. 2006. Commitment issues: linking positive selection signals and lineage diversification in the thymus. *Immunol. Rev.* 209: 253-273.
- Laky, K., et al. 2006. TCR and Notch signaling in CD4 and CD8 T-cell development. *Immunol. Rev.* 209: 274-283.
- Aliahmad, P. and Kaye, J. 2008. Development of all CD4 T lineages requires nuclear factor TOX. *J. Exp. Med.* 205: 245-256.

## CHROMOSOMAL LOCATION

Genetic locus: TOX (human) mapping to 8q12.1; Tox (mouse) mapping to 4 A1.

## SOURCE

TOX (H-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 31-63 near the N-terminus of TOX of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>3</sub> 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-374137 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

TOX (H-2) is recommended for detection of TOX 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).

TOX (H-2) is also recommended for detection of TOX in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for TOX siRNA (h): sc-77552, TOX siRNA (m): sc-154562, TOX shRNA Plasmid (h): sc-77552-SH, TOX shRNA Plasmid (m): sc-154562-SH, TOX shRNA (h) Lentiviral Particles: sc-77552-V and TOX shRNA (m) Lentiviral Particles: sc-154562-V.

Molecular Weight (predicted) of TOX: 58 kDa.

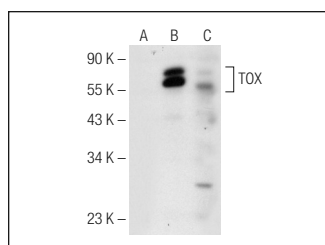
Molecular Weight (observed) of TOX: 58-70 kDa.

Positive Controls: TOX (m): 293T Lysate: sc-126147 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



TOX (H-2): sc-374137. Western blot analysis of TOX expression in non-transfected: sc-117752 (A) and mouse TOX transfected: sc-126147 (B) 293T whole cell lysates and Jurkat nuclear extract (C).

## 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.