

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

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⁺ T cells still develop, suggesting that TOX-dependent transition to the CD4⁺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

1. Saito, T. and Watanabe, N. 1998. Positive and negative thymocyte selection. *Crit. Rev. Immunol.* 18: 359-370.
2. Mitnacht, R., et al. 1998. Opposite CD4/CD8 lineage decisions of CD4⁺ mouse and rat thymocytes to equivalent triggering signals: correlation with thymic expression of a truncated CD8- α chain in mice but not rats. *J. Immunol.* 160: 700-707.
3. Wilkinson, B., et al. 2002. TOX: an HMG box protein implicated in the regulation of thymocyte selection. *Nat. Immunol.* 3: 272-280.
4. Aliahmad, P., et al. 2004. TOX provides a link between calcineurin activation and CD8 lineage commitment. *J. Exp. Med.* 199: 1089-1099.
5. Laky, K. and Fowlkes, B.J. 2005. Receptor signals and nuclear events in CD4 and CD8 T cell lineage commitment. *Curr. Opin. Immunol.* 17: 116-121.
6. Aliahmad, P. and Kaye, J. 2006. Commitment issues: linking positive selection signals and lineage diversification in the thymus. *Immunol. Rev.* 209: 253-273.
7. Laky, K., et al. 2006. TCR and notch signaling in CD4 and CD8 T-cell development. *Immunol. Rev.* 209: 274-283.
8. 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 (mouse) mapping to 4 A1.

PRODUCT

TOX (m): 293T Lysate represents a lysate of mouse TOX transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

APPLICATIONS

TOX (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive TOX antibodies. Recommended use: 10-20 μ l per lane.

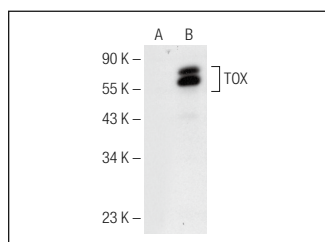
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

TOX (H-2): sc-374137 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse TOX expression in TOX transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

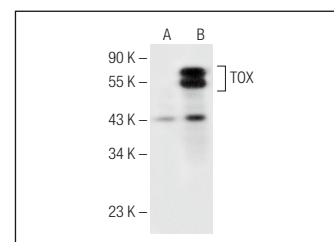
RECOMMENDED SUPPORT REAGENTS

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.

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.



TOX (G-5): sc-374136. Western blot analysis of TOX expression in non-transfected: sc-117752 (A) and mouse TOX transfected: sc-126147 (B) 293T whole cell lysates.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.