SANTA CRUZ BIOTECHNOLOGY, INC.

# TOX (S-13): sc-98181

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*The Power to Question*

## 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., et al. 1998. Positive and negative thymocyte selection. Crit. Rev. Immunol. 18: 359-370.
2. Mitnacht, R., et al. 1998. Opposite CD4/CD8 lineage decisions of $CD4^+8^+$ 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.
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., et al. 2005. Receptor signals and nuclear events in CD4 and CD8 T cell lineage commitment. Curr. Opin. Immunol. 17: 116-121.
6. Aliahmad, P., et al. 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., et al. 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 (S-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of TOX of human origin.

## STORAGE

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

## PROTOCOLS

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

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-98181 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

TOX (S-13) is recommended for detection of TOX of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 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: Jurkat nuclear extract: sc-2132.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RESEARCH USE

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