

**TOX Antibody**  
**Catalog # ASC11529****Specification**

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**TOX Antibody - Product Information**

|                   |                                                                                                                         |
|-------------------|-------------------------------------------------------------------------------------------------------------------------|
| Application       | WB, IF                                                                                                                  |
| Primary Accession | <a href="#">O94900</a>                                                                                                  |
| Other Accession   | <a href="#">NP_055544</a> , <a href="#">7662322</a>                                                                     |
| Reactivity        | Human                                                                                                                   |
| Host              | Rabbit                                                                                                                  |
| Clonality         | Polyclonal                                                                                                              |
| Isotype           | IgG                                                                                                                     |
| Calculated MW     | 58 kDa KDa                                                                                                              |
| Application Notes | TOX antibody can be used for detection of TOX by Western blot at 1 - 2 µg/mL. For immunofluorescence start at 20 µg/mL. |

**TOX Antibody - Additional Information**Gene ID **9760****Target/Specificity**

TOX; No alternatively spliced transcript variants have been observed.

**Reconstitution & Storage**

TOX antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

**Precautions**

TOX Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**TOX Antibody - Protein Information****Name** TOX {ECO:0000303|PubMed:21126536, ECO:0000312|HGNC:HGNC:18988}**Function**

Transcriptional regulator with a major role in neural stem cell commitment and corticogenesis as well as in lymphoid cell development and lymphoid tissue organogenesis (By similarity). Binds to GC-rich DNA sequences in the proximity of transcription start sites and may alter chromatin structure, modifying access of transcription factors to DNA. During cortical development, controls the neural stem cell pool by inhibiting the switch from proliferative to differentiating progenitors. Beyond progenitor cells, promotes neurite outgrowth in newborn neurons migrating to reach the cortical plate. May activate or repress critical genes for neural stem cell fate such as SOX2, EOMES and ROBO2 (By similarity). Plays an essential role in the development of lymphoid tissue-inducer (LTi) cells, a subset necessary for the formation of secondary lymphoid organs: peripheral lymph nodes and Peyer's patches. Acts as a developmental checkpoint and regulates thymocyte positive selection toward T cell lineage commitment. Required for the development of various T cell subsets, including CD4-positive helper T cells, CD8-positive cytotoxic T cells, regulatory T cells and

CD1D-dependent natural killer T (NKT) cells. Required for the differentiation of common lymphoid progenitors (CMP) to innate lymphoid cells (ILC) (By similarity). May regulate the NOTCH-mediated gene program, promoting differentiation of the ILC lineage. Required at the progenitor phase of NK cell development in the bone marrow to specify NK cell lineage commitment (PubMed:<a href="http://www.uniprot.org/citations/21126536" target="\_blank">21126536</a>) (By similarity). Upon chronic antigen stimulation, diverts T cell development by promoting the generation of exhausted T cells, while suppressing effector and memory T cell programming. May regulate the expression of genes encoding inhibitory receptors such as PDCD1 and induce the exhaustion program, to prevent the overstimulation of T cells and activation-induced cell death (By similarity).

#### Cellular Location

Nucleus {ECO:0000255|PROSITE-ProRule:PRU00267}.

#### Tissue Location

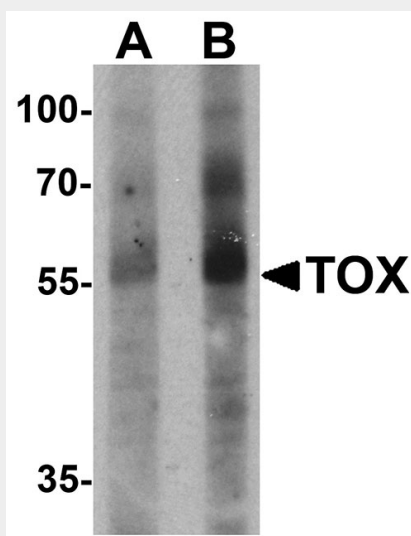
Expressed in NK cells (PubMed:21126536). Highly expressed in tumor-infiltrating CD8-positive T cells (at protein level) (PubMed:31207604).

### TOX Antibody - Protocols

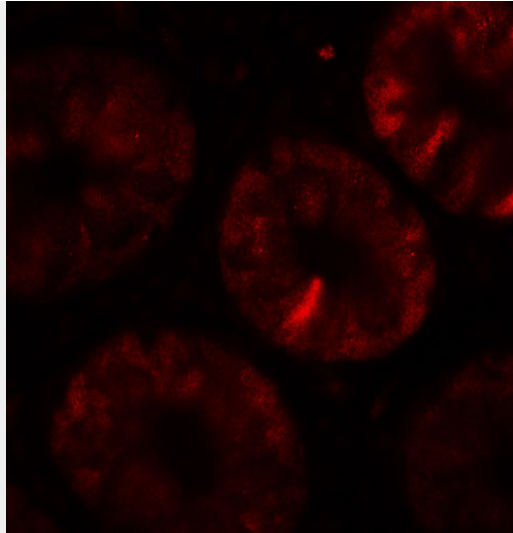
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### TOX Antibody - Images



Western blot analysis of TOX in human colon tissue lysate with TOX antibody at (A) 1 and (B) 2  $\mu$ g/mL.



Immunofluorescence of TOX in human colon tissue with TOX antibody at 20 µg/mL.

### **TOX Antibody - Background**

**TOX Antibody:** TOX (thymocyte selection-associated high mobility group (HMG) box protein) is a member of the HMG box family of DNA-binding proteins and likely plays a role in the regulation of T-cell development. It is a 526 amino acid nuclear protein and the expression of TOX is upregulated by pre-T cell receptor (pre-TCR) and TCR activation in immature thymocytes. TOX-mediated positive selection is associated with up-regulation of RUNX3 and is calcineurin dependent. TOX-dependent transition to the CD4+CD8 stage is required for development of class II major histocompatibility complex-specific T cells.

### **TOX Antibody - References**

Wilkinson B, Chen JY, Han P, et al. TOX: an HMG box protein implicated in the regulation of thymocyte selection. *Nat. Immunol.* 2002; 3:272-80.  
Saito T and Watanabe N. Positive and negative thymocyte selection. *Crit. Rev. Immunol.* 1998; 18:359-70  
Aliahmad P, O'Flaherty E, Han P, et al. TOX provides a link between calcineurin activation and CD8 lineage commitment. *J. Exp. Med.* 2004; 199:1089-99.  
Aliahmad P, Kadavallore A, de la Torre B, et al. TOX is required for development of the CD4 T cell lineage gene program. *J. Immunol.* 2011; 187:5931-40.