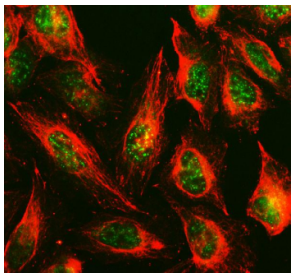
TOX3 Antibody / TOX high mobility group box family member 3 (FY13037)

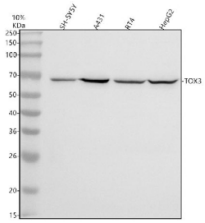
Catalog No.	Formulation	Size
FY13037	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

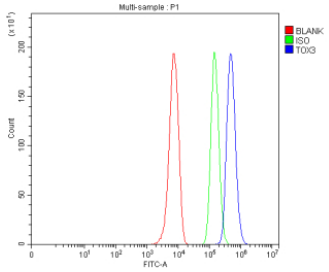
Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	O15405
Applications	Western Blot : 0.25-0.5ug/ml Immunocytochemistry/Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This TOX3 antibody is available for research use only.



Immunofluorescent staining of TOX3 using anti-TOX3 antibody (green) and anti-Beta Tubulin antibody (red). TOX3 was detected in an immunocytochemical section of U2OS cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-TOX3 antibody and mouse anti-Beta Tubulin antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG and Cy3 Conjugated Goat Anti-Mouse IgG were used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of TOX3 using anti-TOX3 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human SH-SY5Y whole cell lysates, Lane 2: human whole cell lysates, Lane 3: human RT4 whole cell lysates, Lane 4: human HepG2 whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-TOX3 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. The expected molecular weight of TOX3 is ~63 kDa.



Flow Cytometry analysis of HepG2 cells using anti-TOX3 antibody. Overlay histogram showing HepG2 cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-TOX3 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.

Description

TOX3 antibody detects TOX high mobility group box family member 3, a nuclear transcriptional cofactor involved in calcium-dependent gene regulation, chromatin remodeling, and neuronal survival. The UniProt recommended name is TOX high mobility group box family member 3 (TOX3). This protein functions as a chromatin-modifying transcriptional regulator and is expressed primarily in brain tissue, where it contributes to synaptic maintenance and neuroprotection.

Functionally, TOX3 antibody identifies a 576-amino-acid nuclear protein containing a high mobility group (HMG) box domain that binds to DNA and alters chromatin structure. TOX3 acts as a transcriptional co-regulator by interacting with CREB-binding protein (CBP), CITED1, and other transcriptional activators, enhancing the expression of calcium-dependent genes. It modulates neuronal plasticity and calcium signaling pathways crucial for learning, memory, and neuroprotection.

The TOX3 gene is located on chromosome 16q12.1 and encodes a transcription factor expressed in central nervous system neurons, endocrine tissues, and certain epithelial cells. Through chromatin remodeling, TOX3 facilitates access of transcriptional machinery to DNA and influences the balance between gene activation and repression. Its HMG box domain induces DNA bending, promoting nucleosome repositioning and chromatin flexibility.

TOX3 has attracted attention as a genetic susceptibility locus in breast cancer, where specific polymorphisms near the TOX3 gene are associated with increased risk. In tumors, aberrant TOX3 expression can alter transcriptional programs governing cell differentiation and apoptosis. In the nervous system, TOX3 helps protect neurons from excitotoxicity by modulating calcium-regulated gene networks. Reduced expression has been linked to increased vulnerability to neurodegenerative injury and impaired neuronal survival.

TOX3 antibody is widely used in neuroscience, epigenetics, and cancer biology research. It is suitable for western blotting, immunohistochemistry, and chromatin immunoprecipitation to detect TOX3 expression and DNA binding activity. This antibody supports studies of transcriptional regulation, calcium signaling, and chromatin dynamics. In oncology, it aids in exploring the functional relevance of TOX3 variants in hormone-responsive cancers.

Structurally, TOX3 contains an HMG DNA-binding domain and transcriptional regulatory regions that interact with coactivators and histone acetyltransferases. Its activity is modulated by calcium-dependent phosphorylation and nuclear

localization signals. NSJ Bioreagents provides TOX3 antibody reagents validated for use in chromatin regulation, neurobiology, and transcriptional control research.

Application Notes

Optimal dilution of the TOX3 antibody should be determined by the researcher.

Immunogen

E.coli-derived human TOX3 recombinant protein (Position: M1-Q560) was used as the immunogen for the TOX3 antibody.

Storage

After reconstitution, the TOX3 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.