abcam

Product datasheet

Anti-PML Protein antibody - N-terminal ab53773

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Overview

Product name	Anti-PML Protein antibody - N-terminal
Description	Rabbit polyclonal to PML Protein - N-terminal
Host species	Rabbit
Specificity	This antibody detects endogenous levels of total PML protein.
Tested applications	**Suitable for:** WB, ELISA, IHC-P, ICC/IF, ChIP, IP
Species reactivity	**Reacts with:** Human, African green monkey
Immunogen	Synthetic peptide corresponding to Human PML Protein aa 39-53 (N terminal). Sequence: PSPTERAPASEEEFQ Database link: P29590 Run BLAST with Run BLAST with
Positive control	WB: A549 cell extracts. ICC/IF: HeLa cells. ChIP:Chromatin was prepared from modified murine D3 ES cells (an in vitro model of RB1 imprinted expression was generated by integrating human PPP1R26P1 into intron 2 of mouse Rb1 in murine embryonic stem cells (mESCs)). IHC-P: Human normal colon tissue.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C. Avoid freeze / thaw cycle.
Storage buffer	pH: 7.40 Preservative: 0.02% Sodium azide Constituents: 50% Glycerol, 0.87% Sodium chloride, PBS PBS without Mg2+ and Ca2+
Purity	Immunogen affinity purified
Clonality	Polyclonal
Isotype	IgG

Applications

Our Abpromise guarantee covers the use of **ab53773** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB	★★★★★	1/500 - 1/1000. Detects a band of approximately 100 kDa (predicted molecular weight: 69 kDa).
ELISA		1/10000.
IHC-P	★★★★☆	Use a concentration of 4 µg/ml. Perform heat mediated antigen retrieval before commencing with IHC staining protocol.
ICC/IF	★★★★☆	1/100 - 1/250.
ChIP		Use at an assay dependent concentration. PubMed: 24019952
IP		Use at an assay dependent concentration. PubMed: 23222847

Target

Function

Key component of PML nuclear bodies that regulate a large number of cellular processes by facilitating post-translational modification of target proteins, promoting protein-protein contacts, or by sequestering proteins. Functions as tumor suppressor. Required for normal, caspase-dependent apoptosis in response to DNA damage, FAS, TNF, or interferons. Plays a role in transcription regulation, DNA damage response, DNA repair and chromatin organization. Plays a role in processes regulated by retinoic acid, regulation of cell division, terminal differentiation of myeloid precursor cells and differentiation of neural progenitor cells. Required for normal immunity to microbial infections. Plays a role in antiviral response. In the cytoplasm, plays a role in TGFB1-dependent processes. Regulates p53/TP53 levels by inhibiting its ubiquitination and proteasomal degradation. Regulates activation of p53/TP53 via phosphorylation at 'Ser-20'. Sequesters MDM2 in the nucleolus after DNA damage, and thereby inhibits ubiquitination and degradation of p53/TP53. Regulates translation of HIF1A by sequestering MTOR, and thereby plays a role in neoangiogenesis and tumor vascularization. Regulates RB1 phosphorylation and activity. Required for normal development of the brain cortex during embryogenesis. Can sequester herpes virus and varicella virus proteins inside PML bodies, and thereby inhibit the formation of infectious viral particles. Regulates phosphorylation of ITPR3 and plays a role in the regulation of calcium homeostasis at the endoplasmic reticulum (By similarity). Regulates transcription activity of ELF4. Inhibits specifically the activity of the tetrameric form of PKM2. Together with SATB1, involved in local chromatin-loop remodeling and gene expression regulation at the MHC-I locus. Regulates PTEN compartmentalization through the inhibition of USP7-mediated deubiquitinylation.

Involvement in disease

Note=A chromosomal aberration involving PML may be a cause of acute promyelocytic leukemia (APL). Translocation t(15;17)(q21;q21) with RARA. The PML breakpoints (type A and type B) lie on either side of an alternatively spliced exon.

Sequence similarities

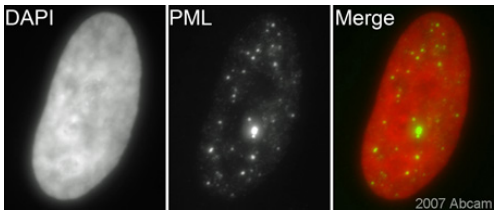
Contains 2 B box-type zinc fingers.
Contains 1 RING-type zinc finger.

Domain

Interacts with PKM2 via its coiled-coil domain.
Binds arsenic via the RING-type zinc finger.

Post-translational modifications	Ubiquitinated; mediated by RNF4, SIAH1 or SIAH2 and leading to subsequent proteasomal degradation. 'Lys-6'-, 'Lys-11'-, 'Lys-48'- and 'Lys-63'-linked polyubiquitination by RNF4 is polysumoylation-dependent. Undergoes 'Lys-11'-linked sumoylation. Sumoylation on all three sites is required for nuclear body formation. Sumoylation on Lys-160 is a prerequisite for sumoylation on Lys-65. The PML-RARA fusion protein requires the coiled-coil domain for sumoylation. Desumoylated by SENP2 and SENP6. Arsenic induces PML and PML-RARA oncogenic fusion proteins polysumoylation and their subsequent RNF4-dependent ubiquitination and proteasomal degradation, and is used as treatment in acute promyelocytic leukemia (APL). Phosphorylated in response to DNA damage, probably by ATR. Acetylation may promote sumoylation and enhance induction of apoptosis.
Cellular localization	Nucleus > nucleoplasm. Cytoplasm. Nucleus > PML body. Nucleus > nucleolus. Endoplasmic reticulum membrane. Early endosome membrane. Sumoylated forms localize to the PML nuclear bodies. The B1 box and the RING finger are also required for this nuclear localization. Isoforms lacking a nuclear localization signal are cytoplasmic. Detected in the nucleolus after DNA damage. Sequestered in the cytoplasm by interaction with rabies virus phosphoprotein.

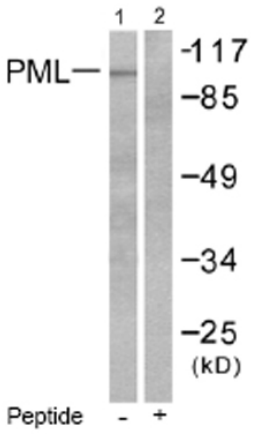
Images



Immunocytochemistry/ Immunofluorescence - Anti-PML Protein antibody - N-terminal (ab53773)

This image is courtesy of an Abreview submitted by Dr Kirk McManus

ab53773 (1/200) staining PML protein in HeLa (Human epithelial cell line from cervix adenocarcinoma) cells (green). Cells were fixed with methanol, permeabilized with triton X-100/PBS and counterstained with DAPI in order to highlight the nucleus (red). Please refer to abreview for further experimental details.

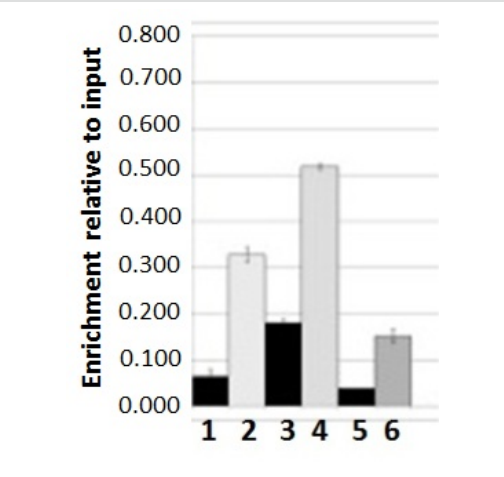


Western blot - Anti-PML Protein antibody - N-terminal (ab53773)

All lanes : Anti-PML Protein antibody - N-terminal (ab53773) at 1/500 dilution

Lane 1 : A549 (Human lung carcinoma cell line) cell extracts
Lane 2 : A549 (Human lung carcinoma cell line) cell extracts with immunizing peptide

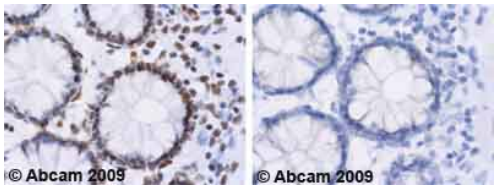
Predicted band size: 69 kDa
Observed band size: 100 kDa
why is the actual band size different from the predicted?



ChIP - Anti-PML Protein antibody - N-terminal (ab53773)

Image from Steenpass et al. PLoS One. 2013 8(9):e74159. Figure 3. doi: 10.1371/journal.pone.0074159. eCollection 2013

Chromatin was prepared from modified murine D3 ES cells (an *in vitro* model of RB1 imprinted expression was generated by integrating human PPP1R26P1 into intron 2 of mouse Rb1 in murine embryonic stem cells (mESCs)). Cells were fixed with formaldehyde for 10 minutes. Chromatin was sheared into fragment sizes ranging from 200 to 600 bp. For immunoprecipitation 50 µl of sheared chromatin was set aside as input and 20-40 µg of sheared chromatin in a volume of 100 µl was used for antibody incubation. 4 µg of ab53773 to PML was used as a non-related control (black bars) and 4 µl of a rabbit polyclonal to RNAPII CTD repeat YSPTSPS (phospho S5) (shaded bars) was added as the test. The immunoprecipitated DNA was quantified at 3 positions on the the retinoblastoma (Rb1) promoter. 1,2 = Rb1_48; 3,4 = Rb1_69 and 5,6 = Rb1_74



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PML Protein antibody - N-terminal (ab53773)

ab53773 staining PML in human normal colon tissue. Staining is localized to the nucleus.
Left panel: ab53773 at 4 µg/ml. Right panel: Isotype control. Sections were stained using an automated system at room temperature. Sections were rehydrated and antigen retrieved with the EDTA pH 9.0 buffer. Slides were blocked in 3% H_2O_2 in methanol for 10 minutes. They were then blocked for 10 minutes (containing casein 0.25% in PBS), then incubated with primary antibody for 20 minutes, and detected for 30 minutes. Colorimetric detection was completed with diaminobenzidine for 5 minutes. Slides were counterstained with hematoxylin and coverslipped. Please note that for manual staining we recommend to optimize the primary antibody concentration and incubation time (overnight incubation), and amplification may be required.

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit https://www.abcam.com/abpromise or contact our technical team.

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