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Product datasheet

Anti-Retinoic Acid Receptor alpha antibody ab231896

2 Images

Overview

Product name	Anti-Retinoic Acid Receptor alpha antibody
Description	Rabbit polyclonal to Retinoic Acid Receptor alpha
Host species	Rabbit
Tested applications	**Suitable for:** WB, ChIP
Species reactivity	**Reacts with:** Human
Immunogen	Synthetic peptide corresponding to Human Retinoic Acid Receptor alpha (C terminal) conjugated to keyhole limpet haemocyanin. Two KLH-conjugated synthetic peptides containing sequences from the C-terminal region of the protein. Database link: **P10276**
Positive control	ChIP: NB4 cells. WB: HEK-293T cells transfected with a RARA construct lysate.
General notes	The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

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 long term. Avoid freeze / thaw cycle.
Storage buffer	Preservative: 0.05% Sodium azide
Purity	Whole antiserum
Clonality	Polyclonal
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab231896 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		1/750.
ChIP		Use at an assay dependent concentration. 4 µl/ChIP reaction.

Target

Function

Receptor for retinoic acid. Retinoic acid receptors bind as heterodimers to their target response elements in response to their ligands, all-trans or 9-cis retinoic acid, and regulate gene expression in various biological processes. The RXR/RAR heterodimers bind to the retinoic acid response elements (RARE) composed of tandem 5'-AGGTCA-3' sites known as DR1-DR5. In the absence of ligand, the RXR-RAR heterodimers associate with a multiprotein complex containing transcription corepressors that induce histone acetylation, chromatin condensation and transcriptional suppression. On ligand binding, the corepressors dissociate from the receptors and associate with the coactivators leading to transcriptional activation. RARA plays an essential role in the regulation of retinoic acid-induced germ cell development during spermatogenesis. Has a role in the survival of early spermatocytes at the beginning prophase of meiosis. In Sertoli cells, may promote the survival and development of early meiotic prophase spermatocytes. In concert with RARG, required for skeletal growth, matrix homeostasis and growth plate function (By similarity). Regulates expression of target genes in a ligand-dependent manner by recruiting chromatin complexes containing MLL5. Mediates retinoic acid-induced granulopoiesis.

Involvement in disease

Note=Chromosomal aberrations involving RARA are commonly found in acute promyelocytic leukemia. Translocation t(11;17)(q32;q21) with ZBTB16/PLZF; translocation t(15;17)(q21;q21) with PML; translocation t(5;17)(q32;q11) with NPM. The PML-RARA oncoprotein requires both the PML ring structure and coiled-coil domain for both interaction with UBE2I, nuclear microspeckle location and sumoylation. In addition, the coiled-coil domain functions in blocking RA-mediated transactivation and cell differentiation.

Sequence similarities

Belongs to the nuclear hormone receptor family. NR1 subfamily.
Contains 1 nuclear receptor DNA-binding domain.

Domain

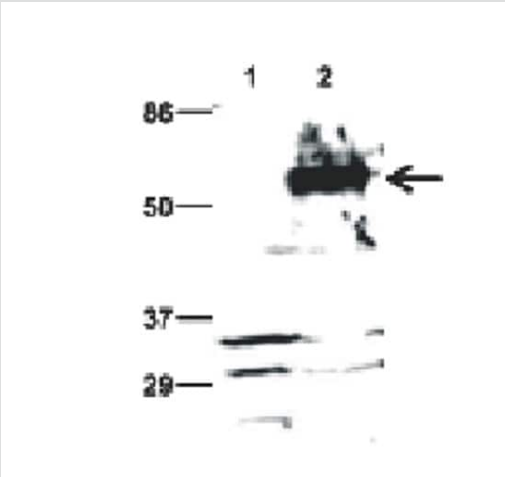
Composed of three domains: a modulating N-terminal domain, a DNA-binding domain and a C-terminal ligand-binding domain.

Post-translational modifications

Phosphorylated on serine and threonine residues. Phosphorylation does not change during cell cycle. Phosphorylation on Ser-77 is crucial for transcriptional activity (By similarity).
Phosphorylation by AKT1 is required for the repressor activity but has no effect on DNA binding, protein stability nor subcellular localization. Phosporylated by PKA in vitro. This phosphorylation on Ser-219 and Ser-369 is critical for ligand binding, nuclear localization and transcriptional activity in response to FSH signaling.
Sumoylated by SUMO2, mainly on Lys-399 which is also required for SENP6 binding. On all-trans retinoic acid (ATRA) binding, a confromational change may occur that allows sumoylation on two additional site, Lys-166 and Lys-171. Probably desumoylated by SENP6. Sumoylation levels determine nuclear localization and regulate ATRA-mediated transcriptional activity.
Trimethylation enhances heterodimerization with RXRA and positively modulates the transcriptional activation.
Ubiquitinated.

Cellular localization	Nucleus. Cytoplasm. Nuclear localization depends on ligand binding, phosphorylation and sumoylation. Transloaction to the nucleus in the absence of ligand is dependent on activation of PKC and the downstream MAPK phosphorylation.

Images



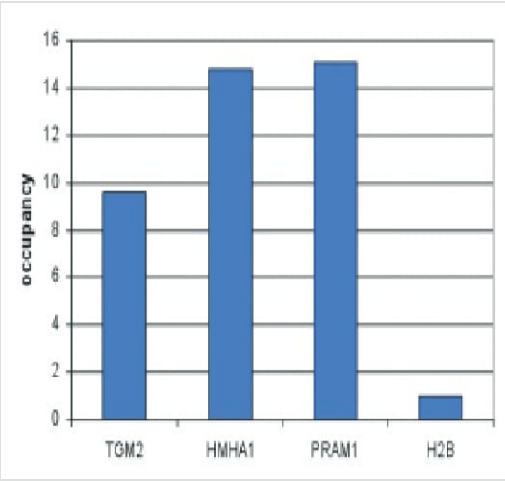
Western blot - Anti-Retinoic Acid Receptor alpha antibody (ab231896)

All lanes : Anti-Retinoic Acid Receptor alpha antibody (ab231896) at 1/750 dilution

Lane 1 : HEK-293T (Human epithelial cell line from embryonic kidney transformed with large T antigen) transfected with a negative control construct

Lane 2 : HEK-293T (Human epithelial cell line from embryonic kidney transformed with large T antigen) transfected with a RARA construct

Dilution buffer: BSA/PBS-Tween.



ChIP - Anti-Retinoic Acid Receptor alpha antibody (ab231896)

ChIP assays were performed using NB4 cells, ab231896 and optimized primer pairs for qPCR. Sheared chromatin from 6 million cells and 4 µl of antibody were used per ChIP experiment. QPCR was performed using primers specifc for the TGM2, HMHA1, PRAM1 and H2B genes.

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