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RARA / RAR Alpha Antibody (clone 2C9-1F8)

Mouse Monoclonal Antibody
Catalog # ALS14145

Specification

RARA / RAR Alpha Antibody (clone 2C9-1F8) - Product Information

Application	**WB, IF, IHC**
Primary Accession	P10276
Reactivity	**Human**
Host	**Mouse**
Clonality	**Monoclonal**
Calculated MW	**51kDa KDa**

RARA / RAR Alpha Antibody (clone 2C9-1F8) - Additional Information

Gene ID 5914

Other Names
Retinoic acid receptor alpha, RAR-alpha, Nuclear receptor subfamily 1 group B member 1, RARA, NR1B1

Target/Specificity
Human RARA

Reconstitution & Storage
Store at -20°C or lower. Aliquot to avoid repeated freezing and thawing.

Precautions
RARA / RAR Alpha Antibody (clone 2C9-1F8) is for research use only and not for use in diagnostic or therapeutic procedures.

RARA / RAR Alpha Antibody (clone 2C9-1F8) - Protein Information

Name RARA

Synonyms NR1B1

Function
Receptor for retinoic acid (PubMed:19850744, PubMed:16417524, PubMed:20215566). 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 (PubMed:28167758). The RXR/RAR heterodimers bind to the retinoic acid response elements (RARE) composed of tandem 5'-AGGTCA-3' sites known as DR1-DR5 (PubMed:28167758, PubMed:<a

href="http://www.uniprot.org/citations/19398580" target="_blank">19398580). In the absence of ligand, the RXR-RAR heterodimers associate with a multiprotein complex containing transcription corepressors that induce histone deacetylation, chromatin condensation and transcriptional suppression (PubMed:16417524). On ligand binding, the corepressors dissociate from the receptors and associate with the coactivators leading to transcriptional activation (PubMed:9267036, PubMed:19850744, PubMed:20215566). Formation of a complex with histone deacetylases might lead to inhibition of RARE DNA element binding and to transcriptional repression (PubMed:28167758). Transcriptional activation and RARE DNA element binding might be supported by the transcription factor KLF2 (PubMed:28167758). RARA plays an essential role in the regulation of retinoic acid-induced germ cell development during spermatogenesis (By similarity). Has a role in the survival of early spermatocytes at the beginning prophase of meiosis (By similarity). In Sertoli cells, may promote the survival and development of early meiotic prophase spermatocytes (By similarity). In concert with RARG, required for skeletal growth, matrix homeostasis and growth plate function (By similarity). Together with RXRA, positively regulates microRNA-10a expression, thereby inhibiting the GATA6/VCAM1 signaling response to pulsatile shear stress in vascular endothelial cells (PubMed:28167758). In association with HDAC3, HDAC5 and HDAC7 corepressors, plays a role in the repression of microRNA-10a and thereby promotes the inflammatory response (PubMed:28167758).

Cellular Location
Nucleus. Cytoplasm. Note=Nuclear localization depends on ligand binding, phosphorylation and sumoylation (PubMed:19850744) Translocation to the nucleus in the absence of ligand is dependent on activation of PKC and the downstream MAPK phosphorylation (By similarity). Increased nuclear localization upon pulsatile shear stress (PubMed:28167758). {ECO:0000250|UniProtKB:P11416, ECO:0000269|PubMed:19850744, ECO:0000269|PubMed:28167758}

Tissue Location
Expressed in monocytes.

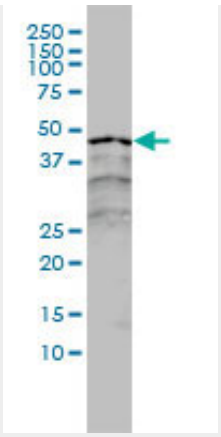
RARA / RAR Alpha Antibody (clone 2C9-1F8) - Protocols

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

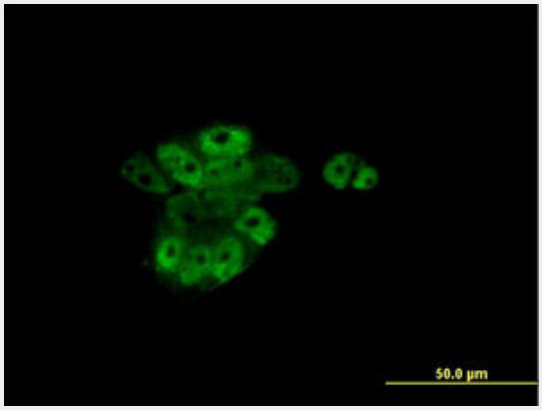
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

RARA / RAR Alpha Antibody (clone 2C9-1F8) - Images

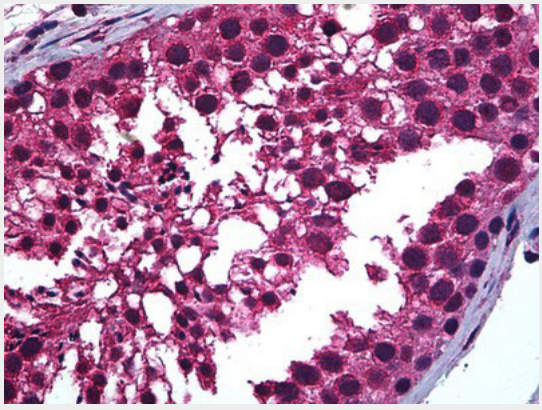
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RARA monoclonal antibody clone 2C9-1F8 Western blot of RARA expression in A-431.



Immunofluorescence of monoclonal antibody to RARA on A-431 cell. [antibody concentration 10 ug/ml]



Anti-RARA antibody IHC of human testis.

RARA / RAR Alpha Antibody (clone 2C9-1F8) - Background

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 KMT2E/MLL5. Mediates retinoic acid-induced granulopoiesis.

RARA / RAR Alpha Antibody (clone 2C9-1F8) - References

Giguere V.,et al.Nature 330:624-629(1987).
Chen Z.,et al.Proc. Natl. Acad. Sci. U.S.A. 91:1178-1182(1994).
Hjalt T.A.H.,et al.Mamm. Genome 10:528-529(1999).
Parrado A.,et al.Nucleic Acids Res. 29:4901-4908(2001).
Zody M.C.,et al.Nature 440:1045-1049(2006).