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RORA Antibody (T216)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1085D

Product Information

Application	WB, IF, FC, E
Primary Accession	P35398
Other Accession	P51448, NP_599022
Reactivity	Human, Rat, Mouse
Predicted	Mouse, Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB16632
Calculated MW	58975
Antigen Region	193-222

Additional Information

Gene ID	6095
Other Names	Nuclear receptor ROR-alpha, Nuclear receptor RZR-alpha, Nuclear receptor subfamily 1 group F member 1, RAR-related orphan receptor A, Retinoid-related orphan receptor-alpha, RORA, NR1F1, RZRA
Target/Specificity	This RORA antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 193-222 amino acids from human RORA.
Dilution	WB~~1:1000 IF~~1:10~50 FC~~1:25 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	RORA Antibody (T216) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	RORA

Synonyms	NR1F1, RZRA
Function	Nuclear receptor that binds DNA as a monomer to ROR response elements (RORE) containing a single core motif half-site 5'-AGGTCA-3' preceded by a short A-T-rich sequence. Key regulator of embryonic development, cellular differentiation, immunity, circadian rhythm as well as lipid, steroid, xenobiotics and glucose metabolism. Considered to have intrinsic transcriptional activity, have some natural ligands like oxysterols that act as agonists (25-hydroxycholesterol) or inverse agonists (7-oxygenated sterols), enhancing or repressing the transcriptional activity, respectively. Recruits distinct combinations of cofactors to target genes regulatory regions to modulate their transcriptional expression, depending on the tissue, time and promoter contexts. Regulates genes involved in photoreceptor development including OPN1SW, OPN1SM and ARR3 and skeletal muscle development with MYOD1. Required for proper cerebellum development (PubMed:29656859). Regulates SHH gene expression, among others, to induce granule cells proliferation as well as expression of genes involved in calcium- mediated signal transduction. Regulates the circadian expression of several clock genes, including CLOCK, BMAL1, NPAS2 and CRY1. Competes with NR1D1 for binding to their shared DNA response element on some clock genes such as BMAL1, CRY1 and NR1D1 itself, resulting in NR1D1- mediated repression or RORA-mediated activation of clock genes expression, leading to the circadian pattern of clock genes expression. Therefore influences the period length and stability of the clock. Regulates genes involved in lipid metabolism such as apolipoproteins APOA1, APOA5, APOC3 and PPARG. In liver, has specific and redundant functions with RORC as positive or negative modulator of expression of genes encoding phase I and phase II proteins involved in the metabolism of lipids, steroids and xenobiotics, such as CYP7B1 and SULT2A1. Induces a rhythmic expression of some of these genes. In addition, interplays functionally with NR1H2 and NR1H3 for the regulation of genes involved in cholesterol metabolism. Also involved in the regulation of hepatic glucose metabolism through the modulation of G6PC1 and PCK1. In adipose tissue, plays a role as negative regulator of adipocyte differentiation, probably acting through dual mechanisms. May suppress CEBPB-dependent adipogenesis through direct interaction and PPARG-dependent adipogenesis through competition for DNA-binding. Downstream of IL6 and TGFB and synergistically with RORC isoform 2, is implicated in the lineage specification of uncommitted CD4(+) T-helper (T(H)) cells into T(H)17 cells, antagonizing the T(H)1 program. Probably regulates IL17 and IL17F expression on T(H) by binding to the essential enhancer conserved non-coding sequence 2 (CNS2) in the IL17- IL17F locus. Involved in hypoxia signaling by interacting with and activating the transcriptional activity of HIF1A. May inhibit cell growth in response to cellular stress. May exert an anti-inflammatory role by inducing CHUK expression and inhibiting NF-kappa-B signaling.
Cellular Location	Nucleus {ECO:0000255|PROSITE-ProRule:PRU00407, ECO:0000269|PubMed:18005000, ECO:0000269|PubMed:18354202, ECO:0000269|PubMed:18658046}
Tissue Location	Widely expressed in a number of tissues. Expressed in both regulatory T-cells (Treg) and effector T-cells (Teff) (PubMed:18354202, PubMed:7916608). Isoform 4: Highly expressed in the central nervous system, including in the cerebellum (PubMed:29656859)

Background

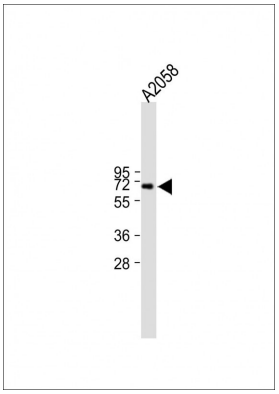
RORA is a member of the NR1 subfamily of nuclear hormone receptors. It can bind as a monomer or as a homodimer to hormone response elements upstream of several genes to enhance the expression of those genes. The specific functions of this protein are not known, but it has been shown to interact with NM23-2, a

nucleoside diphosphate kinase involved in organogenesis and differentiation, as well as with NM23-1, the product of a tumor metastasis suppressor candidate gene.

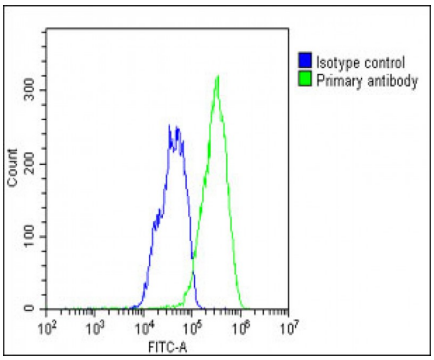
References

Lechtken,A., Biochem. Biophys. Res. Commun. 358 (3), 890-896 (2007)
Lanoix,D.,Hum. Reprod. 21 (8), 1981-1989 (2006)
Boukhtouche,F., J. Neurochem. 96 (6), 1778-1789 (2006)
Klar,J., Eur. J. Hum. Genet. 13 (8), 928-934 (2005)
Giguere,V., Genomics 28 (3), 596-598 (1995)

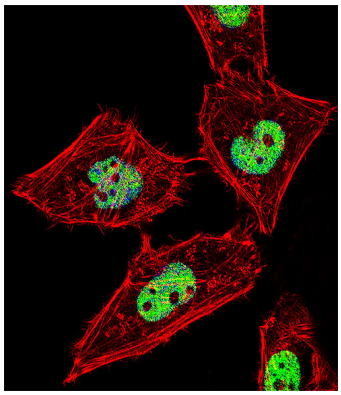
Images



All lanes : Anti-RORA Antibody (T216) at 1:2000 dilution Lane 1: A2058 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size : 66kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Overlay histogram showing HepG2 cells stained with AP1085d(green line). The cells were fixed with 2% paraformaldehyde (10 min) and then permeabilized with 90% methanol for 10 min. The cells were then icubated in 2% bovine serum albumin to block non-specific protein-protein interactions followed by the antibody (AP1085d, 1:25 dilution) for 60 min at 37°C. The secondary antibody used was Goat-Anti-Rabbit IgG, DyLight® 488 Conjugated Highly Cross-Adsorbed(1583138) at 1/200 dilution for 40 min at 37°C. Isotype control antibody (blue line) was rabbit IgG1 (1µg/1x10^6 cells) used under the same conditions. Acquisition of >10, 000 events was performed.



Fluorescent confocal image of Hela cell stained with RORA Antibody (T216)(Cat#AP1085d).Hela cells were fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.1%, 10 min), then incubated with RORA primary antibody (1:25, 1 h at 37°C). For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:400, 50 min at 37°C).Cytoplasmic actin was counterstained with Alexa Fluor® 555 (red) conjugated Phalloidin (7units/ml, 1 h at 37°C). Nuclei were counterstained with DAPI (blue) (10 µg/ml, 10 min). RORA immunoreactivity is localized to Nucleus significantly.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.