SANTA CRUZ BIOTECHNOLOGY, INC.

RARα (1C10): sc-293417

BACKGROUND

Retinoids (RA) are metabolites of vitamin A (retinol) that are important signaling molecules during vertebrate development and tissue differentiation. RAs activate the retinoic acid receptor (RAR) and retinoid X receptor (RXR) nuclear transcription factor families. Most retinoid forms activate RAR family members, whereas RXR family members are activated by 9-*cis*-RA only. RAR family members, which include RARα, RARβ and RARγ, have a high affinity for all transretinoic acids and belong to the same class of nuclear transcription factors as thyroid hormone receptors, vitamin D_3 receptor and ecdysone receptor. RAR isoforms are expressed in distinct patterns throughout development and in the mature organism. The human RARα gene maps to chromosome 17 and is implicated in the chromosomal translocation associated with acute promyelocytic leukemia (APL-M3). Specifically, the RARα gene is fused with the promyelocytic leukemia (PML) gene, which encodes the fusion protein PML/RARα. The PML/RARα fusion protein inhibits PML-dependent apoptotic pathways and halts myeloid differentiation at the promyelocytic stage.

REFERENCES

1. Koelle, M.R., et al. 1991. The *Drosophila* EcR gene encodes an ecdysone receptor, a new member of the steroid receptor superfamily. Cell 67: 59-77.
2. Bhat, M.K., et al. 1994. Phosphorylation enhances the target gene sequence-dependent dimerization of thyroid hormone receptor with retinoid X receptor. Proc. Natl. Acad. Sci. USA 91: 7927-7931.

CHROMOSOMAL LOCATION

Genetic locus: RARA (human) mapping to 17q21.2; Rara (mouse) mapping to 11 D.

SOURCE

RARα (1C10) is a mouse monoclonal antibody raised against amino acids 315-424 representing partial length RARα of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

RARα (1C10) is recommended for detection of RARα of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for RARα siRNA (h): sc-29465, RARα siRNA (m): sc-36393, RARα shRNA Plasmid (h): sc-29465-SH, RARα shRNA Plasmid (m): sc-36393-SH, RARα shRNA (h) Lentiviral Particles: sc-29465-V and RARα shRNA (m) Lentiviral Particles: sc-36393-V.

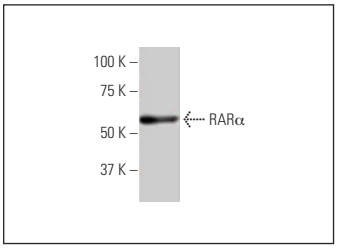
Molecular Weight of RARα: 52 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210.

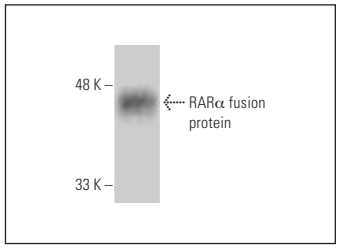
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



RARα (1C10): sc-293417. Western blot analysis of RARα expression in NIH/3T3 whole cell lysate.



RARα (1C10): sc-293417. Western blot analysis of human recombinant RARα fusion protein.

SELECT PRODUCT CITATIONS

1. Wang, S., et al. 2021. Vitamin A supplementation ameliorates motor incoordination via modulating RORα in the cerebellum in a valproic acid-treated rat autism model with vitamin A deficiency. Neurotoxicology 85: 90-98.
2. Li, L.S., et al. 2022. Involvement of retinoic acid receptor α in the autistic-like behavior of rats with vitamin A deficiency by regulating neurexin 1 in the visual cortex: a mechanism study. Zhongguo Dang Dai Er Ke Za Zhi 24: 928-935.
3. Yuan, B., et al. 2023. Retinoic acid supplementation ameliorates motor incoordination via RARα-CBLN2 in the cerebellum of a prenatal valproic acid-exposed rat autism model. Neurosci. Lett. 809: 137316.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.