



3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

Product Information

Anti-Retinoic Acid Receptor-related Orphan

Receptor α

Developed in Rabbit, Affinity Isolated Antibody

Product Number **R 2279**

Product Description

Anti-Retinoic Acid Receptor-related Orphan Receptor α (ROR α) was developed in rabbit using a synthetic peptide K(541)ELFTSEFEPAMQIDG(556) corresponding to amino acid residues 541-556 from human ROR α as the immunogen. The antibody was affinity purified.

The antibody detects an ~56 kDa protein representing human ROR α in transfected BL21 cells using a pGEX-hROR α 1-GST vector by immunoblotting

Retinoid-related orphan receptor is a transcription factor belonging to the steroid hormone nuclear receptor superfamily.¹ It has been implicated in a variety of functions. ROR α appears to have a key role in proper cerebellar and bone development, modulation of gene expression in response to hypoxic stress, and migratory capacities of cancer cells, and may be involved in many pathophysiological processes such as cerebellar ataxia, inflammation, atherosclerosis and angiogenesis.¹⁻³

ROR α has been shown to positively regulate apolipoprotein (apo)A-I and apoC-III gene expression, appears to participate in the regulation of plasma cholesterol levels, and there is evidence to indicate it may in turn be regulated itself by cholesterol, which may be a natural ligand of ROR α .⁴ In addition, ROR α is abundantly expressed in skeletal muscle, where it is speculated to play a role in the control of lipid homeostasis, and is also implicated in the maintenance of circadian rhythms.^{5,6}

Reagent

Supplied as affinity-isolated antibody at a concentration of 1 mg/ml in phosphate buffered saline containing 1.0 mg/ml BSA and 0.05 % sodium azide as preservative.

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazards and safe handling.

Storage/Stability

Store at -20°C . For extended storage, freeze in working aliquots. Avoid repeated freezing and thawing. Storage in "frost-free" freezers is not recommended. Centrifuge before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

The recommended working dilution is 1.0 $\mu\text{g/ml}$ for immunoblotting.

Note: In order to obtain best results and assay sensitivities of different techniques and preparations, determination of optimal working dilutions by titration test is recommended.

References

1. Jetten, A.M., Recent advances in the mechanisms of action and physiological functions of the retinoid-related orphan receptors (RORs)., *Curr. Drug Targets Inflamm. Allergy*, **3**, 395-412 (2004).
2. Moretti, R.M., et al., Activation of the orphan nuclear receptor ROR α counteracts the proliferative effect of fatty acids on prostate cancer cells: crucial role of 5-lipoxygenase, *Int. J. Cancer*, **112**, 87-93 (2004).
3. Chauvet, C., et al., The gene encoding human retinoic acid-receptor-related orphan receptor α is a target for hypoxia-inducible factor 1., *Biochem. J.*, **384**, 79-85 (2004).

4. Boukhtouche, F., et al., The "CholesteROR" protective pathway in the vascular system., *Arterioscler. Thromb. Vasc. Biol.*, **24**, 637-643 (2004).
5. Lau, P., et al., ROR α regulates the expression of genes involved in lipid homeostasis in skeletal muscle cells: caveolin-3 and CPT-1 are direct targets of ROR., *J Biol. Chem.*, **279**, 36828-36840 (2004).
6. Nakajima, Y., et al., Bidirectional role of orphan nuclear receptor ROR α in clock gene transcriptions demonstrated by a novel reporter assay system., *FEBS Lett.*, **565**, 122-126 (2004).

MCT,PHC 03/05-1