

## Recombinant Human RORA Protein (A271-G523), Tag Free

Cat. No. RORA-0775H Lot. No. (See product label)

### SPECIFICATION

**Product Overview** Recombinant Human RORa(A271-G523 end) Protein was expressed in Insect cell.

**Species** Human

**Source** Insect Cells

**ProteinLength** A271-G523

#### Description

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. 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, ARNTL/BMAL1, NPAS2 and CRY1. Competes with NR1D1 for binding to their shared DNA response element on some

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clock genes such as ARNTL/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.

<b>Form</b>	Liquid
<b>Endotoxin</b>	< 0.01 EU per µg of the protein
<b>Purity</b>	90%

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<b>Stability</b>	Samples are stable for up to twelve months from date of receipt at -20 to -80 centigrade.
<b>Storage</b>	Store it under sterile conditions at -20 to -80 centigrade. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
<b>Storage Buffer</b>	Supplied as sterile 50 mM Tris-HCl (pH7.5), 200 mM NaCl, 20% glycerol
<b>Shipping</b>	It is shipped out with blue ice.

## GENE INFORMATION

<b>Gene Name</b>	RORA RAR-related orphan receptor A [ Homo sapiens (human) ]
<b>Official Symbol</b>	RORA
<b>Synonyms</b>	RORA; RAR-related orphan receptor A; nuclear receptor ROR-alpha; NR1F1; ROR1; ROR2; ROR3; RZRA; ROR-alpha; nuclear receptor RZR-alpha; transcription factor RZR-alpha; retinoid-related orphan receptor alpha; nuclear receptor subfamily 1 group F member 1; thyroid hormone nuclear receptor alpha variant 4; retinoic acid receptor-related orphan receptor alpha; RZR-ALPHA; MGC119326; MGC119329; DKFZp686M2414;
<b>Gene ID</b>	6095
<b>mRNA Refseq</b>	NM_002943
<b>Protein Refseq</b>	NP_002934
<b>MIM</b>	600825

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UniProt ID

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