

Product Information

MONOCLONAL ANTI-RETINOID X RECEPTOR γ CLONE 1373

Purified Mouse Immunoglobulin

Product Number **R 2902**

Product Description

Monoclonal Anti-Retinoid X Receptor γ (RXR γ) (mouse IgG1 isotype) is derived from the hybridoma produced by the fusion of mouse myeloma p3-NS-1/Ag4.1 cells with splenocytes from BALB/c mice immunized with a synthetic peptide derived from the N-terminus of human RXR γ . The antibody is purified by protein G chromatography.

Monoclonal Anti-Retinoid X Receptor γ specifically recognizes human retinoid X receptor γ (hRXR γ) (~60 kDa). It does not react with human RXR α or RXR β isotypes or with human RAR. The antibody has been used in immunoblotting.

Retinoids are metabolites of vitamin A and play important roles as signaling molecules in vertebrate development and differentiation. Two nuclear receptor families are involved in retinoid signaling: the retinoic acid receptor family (RARs), which includes RAR α , RAR β , and RAR γ and the retinoid X receptors (RXRs), which includes RXR α , RXR β , and RXR γ . Members of the RAR family are retinoic acid-inducible enhancer factors that have high affinity for all-trans retinoic acids. They belong to the superfamily of steroid/thyroid nuclear receptors. The RAR α and RAR β genes are more homologous to the two related thyroid hormone receptors THRA and THRB, than to any other member of the nuclear receptor family, indicating that the thyroid hormone and retinoic acid receptors evolved from a common ancestor. The ligand binding domains of the RARs are highly conserved and RAR isoforms are expressed in distinct patterns throughout developing and mature organisms. The RXR family members are closely related to each other in their DNA- and ligand-binding domains but are very divergent from the retinoic acid receptor (RAR) subfamily in both structure and ligand specificity. RXRs are activated by 9-cis retinoic acid, a stereo and photoisomer of all-trans-RA.¹⁻³ Retinoid X receptors act as cellular coregulators that form heterodimers by binding to the receptors for retinoic acid (RAR), thyroid hormone (TR), vitamin D3 (VDR), or peroxisome proliferator (PPAR). These heterodimers then bind to their cognate DNA response elements and regulate gene expression.⁴⁻⁶

In chicken, the RXR γ gene gives rise to two isoforms RXR γ 1 and RXR γ 2, which differ at their N-termini. RXR γ 1 mRNA is found in embryonic and adult liver, whereas RXR γ 2 is found in neural retina where it is restricted to the photoreceptor cells. It is one of the earliest known markers for photoreceptor cells. RXR γ 2 is also found in migrating neural crest cells and their progeny in the peripheral nervous system (PNS).⁷ The pattern of expression of RXR γ appears to vary somewhat in species.⁸

RXR γ function was studied in gene-knockout mice produced by homologous recombination in ES cells. Both heterozygous and homozygous mice exhibited severe runting after birth, often resulting in early death. The mutants exhibited an altered response to the administration of dopamine receptor antagonists, haloperidol and chlorpromazine, which normally induce catalepsy in mice. RXR γ may play an important role in either the development or activation of cholinergic neurones in nigrostriatal extrapyramidal pathways.⁹

Reagent

Monoclonal Anti-Retinoid X Receptor γ is supplied as a solution in phosphate buffered saline, pH 7.4, with 0.08% sodium azide as a 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 practices.

Storage/Stability

Store at -20°C . Upon initial thawing freeze the solution in working aliquots for extended storage. Avoid repeated freezing and thawing to prevent denaturing the antibody. Do not store in a frost-free freezer. The antibody is stable for at least 12 months when stored appropriately. Working dilutions should be discarded if not used within 12 hours.

Product Profile

A recommended working concentration of 1 µg/ml is determined by immunoblotting using HeLa cells. The data demonstrate that only cells containing RXR γ stain positively with Anti-RXR γ antibody, which confirms the specificity of this antibody for RXR γ protein.

Note: In order to obtain best results using different techniques and preparations we recommend determining optimal working concentration by titration.

References

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