Revision 5

Store at -20C

#8965

RARγ1 (D3A4) XP® Rabbit mAb

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IHC-P, IF-IC, FC-FP	H M	Endogenous	58	Rabbit IgG	#P13631	5916

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100
Immunohistochemistry (Paraffin)	1:200 - 1:800
Immunofluorescence (Immunocytochemistry)	1:400 - 1:800
Flow Cytometry (Fixed/Permeabilized)	1:400 - 1:1600

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

For a carrier free (BSA and azide free) version of this product see product #82517.

Specificity/Sensitivity

RARγ1 (D3A4) XP® Rabbit mAb recognizes endogenous levels of total RARγ1 protein. Based upon sequence alignment, this antibody is not predicted to cross-react with RARγ2. This antibody does not cross-react with either RARα or RARβ.

Species predicted to react based on 100% sequence homology

Rat, Hamster, Bovine, Dog

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human RARγ1 protein.

Background

Nuclear retinoic acid (RA) receptors (RARs) consist of three subtypes encoded by separate genes: α (NR1B1), β (NR1B2), and γ (NR1B3). For each subtype, there are at least two isoforms, which are generated by differential promoter usage and alternative splicing and differ only in their N-terminal regions. Retinoids, which are metabolites of vitamin A, serve as ligands for RARs (1). RARs function as ligand-dependent transcriptional regulators and are found to be heterodimerized with retinoid X receptors (RXRs). These transcriptionally active dimers regulate the expression of genes involved in cellular differentiation, proliferation, and apoptosis (2,3). Consequently, RARs play critical roles in a variety of biological processes, including development, reproduction, immunity, and organogenesis (4-6). RAR mutations, fusion proteins, altered expression levels, or aberrant post-translational modifications result in multiple diseases due to altered RAR function and disruption of homeostasis.

In contrast to the ubiquitously expressed RARα subtype, RARγ displays a complex tissue-specific expression pattern (7). The hematopoietic system expresses significant levels of RARγ, and a recent study identified a role for RARγ in hematopoietic stem cell maintenance (8). RARγ is the predominant subtype in human and mouse epidermis, representing 90% of the RARs in this tissue (9-11). Given the high level of RARγ expression in the skin, it has been suggested that this nuclear receptor participates in a transcriptional program that governs maintenance and differentiation of normal epidermis and skin appendages. The transcriptional activity of RARγ is under stringent control, in part, through retinoic acid-induced phosphorylation and proteasomal degradation (12).

Background References

1. Rochette-Egly, C. and Germain, P. (2009) *Nucl Recept Signal* 7, e005.
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3. Eifert, C. et al. (2006) *Mol Reprod Dev* 73, 796-824.
4. Mark, M. et al. (2006) *Annu Rev Pharmacol Toxicol* 46, 451-80.
5. Niederreither, K. and Dollé, P. (2008) *Nat Rev Genet* 9, 541-53.
6. Mark, M. et al. (2009) *Nucl Recept Signal* 7, e002.
7. Dollé, P. (2009) *Nucl Recept Signal* 7, e006.
8. Purton, L.E. et al. (2006) *J Exp Med* 203, 1283-93.
9. Fisher, G.J. et al. (1994) *J Biol Chem* 269, 20629-35.
10. Zelent, A. et al. (1989) *Nature* 339, 714-7.

11. Elder, J.T. et al. (1991) *J Invest Dermatol* 96, 425-33.
12. Giannì, M. et al. (2002) *EMBO J* 21, 3760-9.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin) **IF-IC:** Immunofluorescence (Immunocytochemistry) **FC-FP:** Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

H: Human **M:** Mouse

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Limited Uses