

Retinal RX (G-12): sc-271889

BACKGROUND

The homeobox DNA-binding domain is a 60 amino acid motif that is conserved among many species and functions to bind DNA via a helix-turn-helix structure, thereby playing a role in transcriptional regulation and the control of gene expression. Retinal RX, also known as RAX (retina and anterior neural fold homeobox), MCOP3 or RX, is a 346 amino acid protein that localizes to the nucleus and contains one OAR domain and one homeobox DNA-binding domain. Expressed in developing eye tissue, as well as in adult retina tissue, Retinal RX plays a crucial role in eye formation, specifically by regulating the specification and proliferation of retinal cells. Defects in the gene encoding Retinal RX are the cause of microphthalmia isolated type 3 (MCOP3), a heterogeneous disorder that is characterized by opacities of the cornea and lens and scarring of the retina and choroid.

REFERENCES

- Mathers, P.H., et al. 1997. The Rx homeobox gene is essential for vertebrate eye development. *Nature* 387: 603-607.
- Mathers, P.H. and Jamrich, M. 2000. Regulation of eye formation by the RX and pax6 homeobox genes. *Cell. Mol. Life Sci.* 57: 186-194.

CHROMOSOMAL LOCATION

Genetic locus: RAX (human) mapping to 18q21.32; Rax (mouse) mapping to 18 E1.

SOURCE

Retinal RX (G-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 4-29 at the N-terminus of Retinal RX of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-271889 X, 200 µg/0.1 ml.

Retinal RX (G-12) is available conjugated to agarose (sc-271889 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271889 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271889 PE), fluorescein (sc-271889 FITC), Alexa Fluor[®] 488 (sc-271889 AF488), Alexa Fluor[®] 546 (sc-271889 AF546), Alexa Fluor[®] 594 (sc-271889 AF594) or Alexa Fluor[®] 647 (sc-271889 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-271889 AF680) or Alexa Fluor[®] 790 (sc-271889 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271889 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

Retinal RX (G-12) is recommended for detection of Retinal RX of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Retinal RX (G-12) is also recommended for detection of Retinal RX in additional species, including porcine.

Suitable for use as control antibody for Retinal RX siRNA (h): sc-76390, Retinal RX siRNA (m): sc-76391, Retinal RX shRNA Plasmid (h): sc-76390-SH, Retinal RX shRNA Plasmid (m): sc-76391-SH, Retinal RX shRNA (h) Lentiviral Particles: sc-76390-V and Retinal RX shRNA (m) Lentiviral Particles: sc-76391-V.

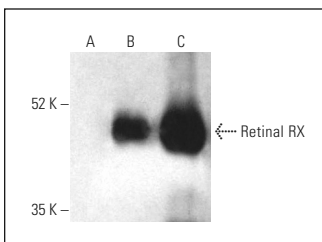
Retinal RX (G-12) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight (predicted) of Retinal RX: 37 kDa.

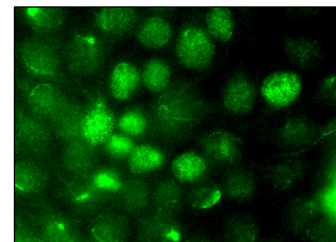
Molecular Weight (observed) of Retinal RX: 21-37 kDa.

Positive Controls: Retinal RX (m): 293T Lysate: sc-123075, Y79 nuclear extract: sc-2126 or Jurkat whole cell lysate: sc-2204.

DATA



Retinal RX (G-12) HRP: sc-271889 HRP. Direct western blot analysis of Retinal RX expression in non-transfected: sc-117752 (A), mouse Retinal RX transfected: sc-123075 (B) and mouse Retinal RX transfected: sc-123076 (C) 293T whole cell lysates.



Retinal RX (G-12): sc-271889. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

- Fukuda, T., et al. 2018. The poly-cistronic expression of four transcriptional factors (CRX, RAX, Neuro-D, OTX2) in fibroblasts via retro- or lentivirus causes partial reprogramming into photoreceptor cells. *Cell Biol. Int.* 42: 608-614.
- Zeng, Y., et al. 2021. The impact of particulate matter (PM2.5) on human retinal development in hESC-derived retinal organoids. *Front. Cell Dev. Biol.* 9: 607341.
- Li, M., et al. 2022. Evaluation of the influences of low dose polybrominated diphenyl ethers exposure on human early retinal development. *Environ. Int.* 163: 107187.

RESEARCH USE

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