

# Retinal RX (S-20): sc-79031

## 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., et al. 2000. Regulation of eye formation by the Rx and pax6 homeobox genes. *Cell. Mol. Life Sci.* 57: 186-194.
- Kimura, A., et al. 2000. Both PCE-1/RX and OTX/CRX interactions are necessary for photoreceptor-specific gene expression. *J. Biol. Chem.* 275: 1152-1160.
- Mikkola, I., et al. 2001. Superactivation of Pax-6-mediated transactivation from paired domain-binding sites by DNA-independent recruitment of different homeodomain proteins. *J. Biol. Chem.* 276: 4109-4118.
- Voronina, V.A., et al. 2004. Mutations in the human RAX homeobox gene in a patient with anophthalmia and sclerocornea. *Hum. Mol. Genet.* 13: 315-322.

## CHROMOSOMAL LOCATION

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

## SOURCE

Retinal RX (S-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of Retinal RX of human origin.

## PRODUCT

Each vial contains 100 µg IgG 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-79031 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-79031 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## 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 (S-20) is recommended for detection of Retinal RX of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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 (S-20) is also recommended for detection of Retinal RX in additional species, including equine, canine, porcine and avian.

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.

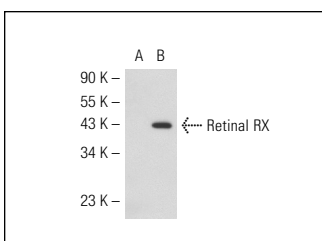
Retinal RX (S-20) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

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

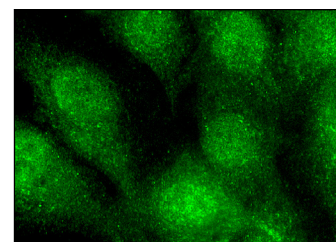
Molecular Weight of (observed) Retinal RX: 21-37 kDa.

Positive Controls: Retinal RX (m2): 293T Lysate: sc-123076, Y79 nuclear extract: sc-2126 or Jurkat whole cell lysate: sc-2204.

## DATA



Retinal RX (S-20): sc-79031. Western blot analysis of Retinal RX expression in non-transfected: sc-117752 (A) and mouse Retinal RX transfected: sc-123076 (B) 293T whole cell lysates.



Retinal RX (S-20): sc-79031. Immunofluorescence staining of methanol-fixed Hep G2 cells showing nuclear localization.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

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Try **Retinal RX (G-12): sc-271889** or **Retinal RX (H-7): sc-376837**, our highly recommended monoclonal alternatives to Retinal RX (S-20).