SANTA CRUZ BIOTECHNOLOGY, INC.

RD3 (B-8): sc-376516

BACKGROUND

Leber congenital amaurosis (LCA) is one of the most common causes of hereditary blindness or severe visual impairment in infants. Mutations in several genes with diverse functions mapping to two loci have been implicated in LCA causation. These proteins are involved in processes such as photoreceptor development and maintenance, phototransduction, vitamin A metabolism and protein trafficking. RD3 (retinal degeneration 3), also known as LCA12, is a 195 amino acid protein expressed in retina. RD3 is suggested to be part of the subnuclear protein complexes involved in diverse processes, such as transcription and splicing. Defects in the gene encoding RD3 are the cause of Leber congenital amaurosis type 12. Infants affected with Leber congenital amaurosis type 12 have little or no retinal photoreceptor function.

REFERENCES

1. Chang, B., et al. 2002. Retinal degeneration mutants in the mouse. Vision Res. 42: 517-525.
2. Mohamed, M.D., et al. 2003. Progression of phenotype in Leber's congenital amaurosis with a mutation at the LCA5 locus. Br. J. Ophthalmol. 87: 473-475.
3. Friedman, J.S., et al. 2006. Premature truncation of a novel protein, RD3, exhibiting subnuclear localization is associated with retinal degeneration. Am. J. Hum. Genet. 79: 1059-1070.
4. Gerber, S., et al. 2007. Mutations in LCA5 are an uncommon cause of Leber congenital amaurosis (LCA) type II. Hum. Mutat. 28: 1245.
5. Ramprasad, V.L., et al. 2008. Identification of a novel splice-site mutation in the Lebercilin (LCA5) gene causing Leber congenital amaurosis. Mol. Vis. 14: 481-486.
6. den Hollander, A.I., et al. 2008. Leber congenital amaurosis: genes, proteins and disease mechanisms. Prog. Retin. Eye Res. 27: 391-419.

CHROMOSOMAL LOCATION

Genetic locus: RD3 (human) mapping to 1q32.3; Rd3 (mouse) mapping to 1 H6.

SOURCE

RD3 (B-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 145-175 within an internal region of RD3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-376516 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

RD3 (B-8) is recommended for detection of RD3 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).

RD3 (B-8) is also recommended for detection of RD3 in additional species, including equine.

Suitable for use as control antibody for RD3 siRNA (h): sc-88397, RD3 siRNA (m): sc-152776, RD3 shRNA Plasmid (h): sc-88397-SH, RD3 shRNA Plasmid (m): sc-152776-SH, RD3 shRNA (h) Lentiviral Particles: sc-88397-V and RD3 shRNA (m) Lentiviral Particles: sc-152776-V.

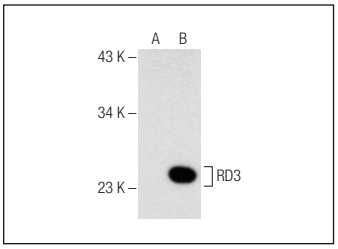
Molecular Weight of RD3: 23 kDa.

Positive Controls: Y79 cell lysate: sc-2240, Y79 nuclear extract: sc-2126 or RD3 (h): 293T Lysate: sc-117023.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



RD3 (B-8): sc-376516. Western blot analysis of RD3 expression in non-transfected: sc-117752 (**A**) and human RD3 transfected: sc-117023 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Wimberg, H., et al. 2018. Control of the nucleotide cycle in photoreceptor cell extracts by retinal degeneration protein 3. Front. Mol. Neurosci. 11: 52.

RESEARCH USE

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