

RDH11 (D-14): sc-51420

BACKGROUND

RDH11 is a member of the short chain retinol dehydrogenase/reductase family that acts as an oxidoreductive catalyst towards retinoids. Expressed in a wide variety of tissues including the liver and prostate, RDH11 can reduce both *trans*- and *cis*-retinaldehydes, as well as oxidize *trans*-retinols. RDH11 prefers NADP⁺ as a cofactor and, although it has both oxidative and reductive capabilities, it is more efficient in the reductive direction. In the retinal pigment epithelium, RDH11 completes the final step in the retinoid cycle of pigment regeneration by catalyzing the oxidation of 11-*cis*-retinol to 11-*cis* retinal. No diseases are currently related to mutations in the gene encoding RDH11.

REFERENCES

- Lin, B., White, J.T., Ferguson, C., Wang, S., Vessella, R., Bumgarner, R., True, L.D., Hood, L. and Nelson, P.S. 2001. Prostate short-chain dehydrogenase reductase 1 (PSDR1): a new member of the short-chain steroid dehydrogenase/reductase family highly expressed in normal and neoplastic prostate epithelium. *Cancer Res.* 61: 1611-1618.
- Kedishvili, N.Y., Chumakova, O.V., Chetyrkin, S.V., Belyaeva, O.V., Lapshina, E.A., Lin, D.W., Matsumura, M. and Nelson, P.S. 2002. Evidence that the human gene for prostate short-chain dehydrogenase/reductase (PSDR1) encodes a novel retinal reductase (RalR1). *J. Biol. Chem.* 277: 28909-28915.
- Haeseleer, F., Jang, G.F., Imanishi, Y., Driessen, C.A., Matsumura, M., Nelson, P.S. and Palczewski, K. 2002. Dual-substrate specificity short-chain retinol dehydrogenases from the vertebrate retina. *J. Biol. Chem.* 277: 45537-45546.
- Kasus-Jacobi, A., Ou, J., Bashmakov, Y.K., Shelton, J.M., Richardson, J.A., Goldstein, J.L. and Brown, M.S. 2003. Characterization of mouse short-chain aldehyde reductase (SCALD), an enzyme regulated by sterol regulatory element-binding proteins. *J. Biol. Chem.* 278: 32380-32389.
- Kim, T.S., Maeda, A., Maeda, T., Heinlein, C., Kedishvili, N., Palczewski, K. and Nelson, P.S. 2005. Delayed dark adaptation in 11-*cis*-retinol dehydrogenase-deficient mice: a role of RDH11 in visual processes *in vivo*. *J. Biol. Chem.* 280: 8694-8704.
- Kasus-Jacobi, A., Ou, J., Birch, D.G., Locke, K.G., Shelton, J.M., Richardson, J.A., Murphy, A.J., Valenzuela, D.M., Yancopoulos, G.D. and Edwards, A.O. 2005. Functional characterization of mouse RDH11 as a retinol dehydrogenase involved in dark adaptation *in vivo*. *J. Biol. Chem.* 280: 20413-20420.
- Gallego, O., Belyaeva, O.V., Porté, S., Ruiz, F.X., Stetsenko, A.V., Shabrova, E.V., Kostereva, N.V., Farrés, J., Parés, X. and Kedishvili, N.Y. 2006. Comparative functional analysis of human medium-chain dehydrogenases, short-chain dehydrogenases/reductases and aldo-keto reductases with retinoids. *Biochem. J.* 399: 101-109.

CHROMOSOMAL LOCATION

Genetic locus: RDH11 (human) mapping to 14q24.1.

STORAGE

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

SOURCE

RDH11 (D-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of RDH11 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-51420 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

RDH11 (D-14) is recommended for detection of RDH11 of 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).

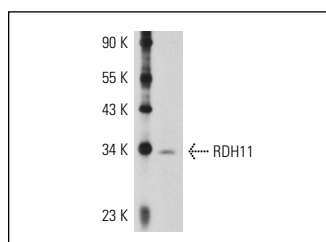
RDH11 (D-14) is also recommended for detection of RDH11 in additional species, including equine and canine.

Suitable for use as control antibody for RDH11 siRNA (h): sc-72264, RDH11 shRNA Plasmid (h): sc-72264-SH and RDH11 shRNA (h) Lentiviral Particles: sc-72264-V.

Molecular Weight of RDH11: 39 kDa.

Positive Controls: PC-3 cell lysate: sc-2220.

DATA



RDH11 (D-14): sc-51420. Western blot analysis of RDH11 expression in PC-3 whole cell lysate.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.