SANTA CRUZ BIOTECHNOLOGY, INC.

ADH7 (D-13): sc-161312

BACKGROUND

ADH7 (alcohol dehydrogenase 7 (class IV), μ or σ polypeptide), also known as ADH4, retinol dehydrogenase or gastric alcohol dehydrogenase, is a 386 amino acid protein belonging to the zinc-containing alcohol dehydrogenase family and the class-IV subfamily. Seven different human ADH isozymes exist: three belong to class-I: α, β and γ; one to class-II: π; one to class-III: χ; one to class-IV: ADH7; and one to class-V: ADH6. Encoded by a gene that maps to human chromosome 4q23, ADH7 localizes to the cytoplasm and is preferentially expressed in stomach, but, unlike other family members, is absent from liver. ADH7 is a homodimer that binds two zinc ions per subunit and contains nine exons. ADH7 participates in the synthesis of retinoic acid, a hormone important for cellular differentiation. Variations in ADH7 may be associated with alcohol dependence. ADH7 may also play a role in protection against aerodigestive tract cancer.

REFERENCES

1. Satre, M.A., et al. 1994. The complete structure of human class IV alcohol dehydrogenase (retinol dehydrogenase) determined from the ADH7 gene. J. Biol. Chem. 269: 15606-15612.
2. Yokoyama, H., et al. 1995. Upstream structure of human ADH7 gene and the organ distribution of its expression. Biochem. Biophys. Res. Commun. 216: 216-222.
3. Zgombi -Knight, M., et al. 1995. Genomic structure and expression of the ADH7 gene encoding human class IV alcohol dehydrogenase, the form most efficient for retinol metabolism *in vitro*. J. Biol. Chem. 270: 4305-4311.
4. Yokoyama, H., et al. 1996. Molecular cloning and chromosomal localization of the ADH7 gene encoding human class IV (σ) ADH. Genomics 31: 243-245.
5. Osier, M.V., et al. 2002. A global perspective on genetic variation at the ADH genes reveals unusual patterns of linkage disequilibrium and diversity. Am. J. Hum. Genet. 71: 84-99.
6. Osier, M.V., et al. 2004. Possible epistatic role of ADH7 in the protection against alcoholism. Am. J. Med. Genet. B Neuropsychiatr. Genet. 126B: 19-22.
7. Lee, J., et al. 2007. A small-molecule antagonist of the hedgehog signaling pathway. Chembiochem 8: 1916-1919.
8. Oze, I., et al. 2009. Impact of multiple alcohol dehydrogenase gene polymorphisms on risk of upper aerodigestive tract cancers in a Japanese population. Cancer Epidemiol. Biomarkers Prev. 18: 3097-3102.
9. Wei, S., et al. 2010. A single nucleotide polymorphism in the alcohol dehydrogenase 7 gene (alanine to glycine substitution at amino acid 92) is associated with the risk of squamous cell carcinoma of the head and neck. Cancer 116: 2984-2992.

CHROMOSOMAL LOCATION

Genetic locus: ADH7 (human) mapping to 4q23; Adh7 (mouse) mapping to 3 G3.

SOURCE

ADH7 (D-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ADH7 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-161312 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ADH7 (D-13) is recommended for detection of ADH7 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with other ADH family members.

Suitable for use as control antibody for ADH7 siRNA (h): sc-89101, ADH7 siRNA (m): sc-140881, ADH7 shRNA Plasmid (h): sc-89101-SH, ADH7 shRNA Plasmid (m): sc-140881-SH, ADH7 shRNA (h) Lentiviral Particles: sc-89101-V and ADH7 shRNA (m) Lentiviral Particles: sc-140881-V.

Molecular Weight of ADH7: 40 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

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.