

Carbonyl reductase 3 (C-16): sc-70218

BACKGROUND

Carbonyl reductase 1 and Carbonyl reductase 3 belong to the family of short-chain dehydrogenase/reductase proteins that play a role in metabolism throughout the body. Both proteins are monomeric carbonyl reductases that function to catalyze the NADPH-dependent reduction of various carbonyls (generally products of lipid peroxidation) to their corresponding alcohols. Carbonyl reductase 1 and Carbonyl reductase 3 share high sequence similarity at the amino acid level and are responsible for the metabolism of not only endogenous compounds, but of various pharmacological products as well. Genetic polymorphisms in both proteins result in individual variability at the level of drug metabolism. Defects in the genes encoding carbonyl reductase proteins have implications in cancer, diabetes and errors in metabolism.

REFERENCES

1. Watanabe, K., et al. 1999. Mapping of a novel human carbonyl reductase, CBR3 and ribosomal pseudogenes to human chromosome 21q22.2. *Genomics* 52: 95-100.
2. Terada, T., et al. 2001. Cloning and bacterial expression of monomeric short-chain dehydrogenase/reductase (Carbonyl reductase) from CHO-K1 cells. *Eur. J. Biochem.* 267: 6849-6857.
3. Olson, L.E., et al. 2003. Protection from doxorubicin-induced cardiac toxicity in mice with a null allele of Carbonyl reductase 1. *Cancer Res.* 63: 6602-6606.
4. Lakhman, S.S., et al. 2005. Functional significance of a natural allelic variant of human Carbonyl reductase 3 (CBR3). *Drug Metab. Dispos.* 33: 254-257.
5. Bergholdt, R., et al. 2005. Fine mapping of a region on chromosome 21q21.11-q22.3 showing linkage to type 1 diabetes. *J. Med. Genet.* 42: 17-25.
6. Tanaka, M., et al. 2005. An unbiased cell morphology-based screen for new, biologically active small molecules. *PLoS Biol.* 3: e128.

CHROMOSOMAL LOCATION

Genetic locus: CBR3 (human) mapping to 21q22.12; Cbr3 (mouse) mapping to 16 C4.

SOURCE

Carbonyl reductase 3 (C-16) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of Carbonyl reductase 3 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-70218 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

Carbonyl reductase 3 (C-16) is recommended for detection of Carbonyl reductase 3 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).

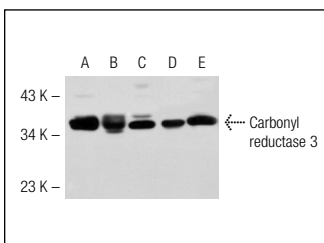
Carbonyl reductase 3 (C-16) is also recommended for detection of Carbonyl reductase 3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Carbonyl reductase 3 siRNA (h): sc-72793, Carbonyl reductase 3 siRNA (m): sc-72794, Carbonyl reductase 3 shRNA Plasmid (h): sc-72793-SH, Carbonyl reductase 3 shRNA Plasmid (m): sc-72794-SH, Carbonyl reductase 3 shRNA (h) Lentiviral Particles: sc-72793-V and Carbonyl reductase 3 shRNA (m) Lentiviral Particles: sc-72794-V.

Molecular Weight of Carbonyl reductase 3: 31 kDa.

Positive Controls: HEK293 whole cell lysate: sc-45136, K-562 whole cell lysate: sc-2203 or Hep G2 cell lysate: sc-2227.

DATA



Carbonyl reductase 3 (C-16): sc-70218. Western blot analysis of Carbonyl reductase 3 expression in HEK293 (A), HEK (B), K-562 (C), Hep G2 (D) and U-698-M (E) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Ebert, B., et al. 2010. Regulation of human carbonyl reductase 3 (CBR3; SDR21C2) expression by Nrf2 in cultured cancer cells. *Biochemistry* 49: 8499-8511.

STORAGE

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



Try **Carbonyl reductase 3 (E-12): sc-374393**, our highly recommended monoclonal alternative to Carbonyl reductase 3 (C-16).