

Carbonyl reductase 3 (E-12): sc-374393

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. 1998. 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. 2000. 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.

CHROMOSOMAL LOCATION

Genetic locus: CBR3 (human) mapping to 21q22.12.

SOURCE

Carbonyl reductase 3 (E-12) is a mouse monoclonal antibody raised against amino acids 126-176 mapping within an internal region of Carbonyl reductase 3 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Carbonyl reductase 3 (E-12) is available conjugated to agarose (sc-374393 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374393 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374393 PE), fluorescein (sc-374393 FITC), Alexa Fluor® 488 (sc-374393 AF488), Alexa Fluor® 546 (sc-374393 AF546), Alexa Fluor® 594 (sc-374393 AF594) or Alexa Fluor® 647 (sc-374393 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374393 AF680) or Alexa Fluor® 790 (sc-374393 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Carbonyl reductase 3 (E-12) is recommended for detection of Carbonyl reductase 3 of 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).

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

Molecular Weight of Carbonyl reductase 3: 31 kDa.

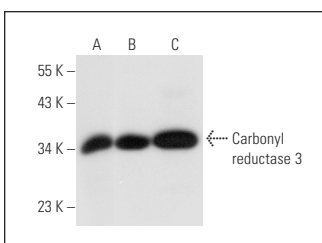
Positive Controls: Carbonyl reductase 3 (h): 293T Lysate: sc-158338, HEK293 whole cell lysate: sc-45136 or RT-4 whole cell lysate: sc-364257.

RECOMMENDED SUPPORT REAGENTS

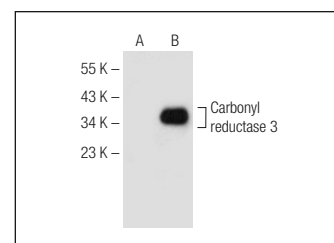
To ensure optimal results, the following support reagents are recommended:

- 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



Carbonyl reductase 3 (E-12): sc-374393. Western blot analysis of Carbonyl reductase 3 expression in HEK293 (A), RT-4 (B) and U-251-MG (C) whole cell lysates.



Carbonyl reductase 3 (E-12): sc-374393. Western blot analysis of Carbonyl reductase 3 expression in non-transfected: sc-117752 (A) and human Carbonyl reductase 3 transfected: sc-158338 (B) 293T whole cell lysates.

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 for detailed protocols and support products.