## SANTA CRUZ BIOTECHNOLOGY, INC.

# Carbonyl reductase 3 (h): 293T Lysate: sc-158338



#### 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.
- 7. Oppermann, U. 2007. Carbonyl reductases: the complex relationships of mammalian carbonyl- and quinone-reducing enzymes and their role in physiology. Annu. Rev. Pharmacol. Toxicol. 47: 293-322.
- 8. Gonzalez-Covarrubias, V., et al. 2007. A functional genetic polymorphism on human Carbonyl reductase 1 (CBR1 V88I) impacts on catalytic activity and NADPH binding affinity. Drug Metab. Dispos. 35: 973-980.
- 9. Lakhman, S.S., et al. 2007. Functional characterization of the promoter of human Carbonyl reductase 1 (CBR1). Role of XRE elements in mediating the induction of CBR1 by ligands of the aryl hydrocarbon receptor. Mol. Pharmacol. 72: 734-743.

### CHROMOSOMAL LOCATION

Genetic locus: CBR3 (human) mapping to 21g22.12.

#### PRODUCT

Carbonyl reductase 3 (h): 293T Lysate represents a lysate of human Carbonyl reductase 3 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

#### **APPLICATIONS**

Carbonyl reductase 3 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive Carbonyl reductase 3 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

#### **STORAGE**

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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.