



Oxr1 (m): 293T Lysate: sc-122295

BACKGROUND

Reactive oxygen species (ROS) are highly reactive molecules that are a normal consequence of aerobic metabolism. Cellular ROS damage can induce apoptosis and spontaneous mutagenesis. Oxr1 (oxidation resistance protein 1) is a 758 amino acid mitochondrial protein that is most likely involved in protection from oxidative damage. Oxr1 is highly conserved from yeast to humans and is specific to eukaryotes. Induced by heat and oxidative stress, the carboxyl-terminal half of Oxr1 is required for its function. Upregulation of superoxide dismutase and catalase was observed in developing *Drosophila* mutants that lacked the gene encoding Oxr1, suggesting that oxidative stress may trigger compensatory protein expression. There are four isoforms of Oxr1 that are produced as a result of alternative splicing events.

REFERENCES

1. Volkert, M.R., Elliott, N.A. and Housman, D.E. 2000. Functional genomics reveals a family of eukaryotic oxidation protection genes. *Proc. Natl. Acad. Sci. USA* 97: 14530-14535.
2. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 605609. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Bohr, V.A. 2002. Repair of oxidative DNA damage in nuclear and mitochondrial DNA, and some changes with aging in mammalian cells. *Free Radic. Biol. Med.* 32: 804-812.
4. Elliott, N.A. and Volkert, M.R. 2004. Stress induction and mitochondrial localization of Oxr1 proteins in yeast and humans. *Mol. Cell. Biol.* 24: 3180-3187.
5. Doudican, N.A., Song, B., Shadel, G.S. and Doetsch, P.W. 2005. Oxidative DNA damage causes mitochondrial genomic instability in *Saccharomyces cerevisiae*. *Mol. Cell. Biol.* 25: 5196-5204.
6. Durand, M., Kolpak, A., Farrell, T., Elliott, N.A., Shao, W., Brown, M. and Volkert, M.R. 2007. The Oxr domain defines a conserved family of eukaryotic oxidation resistance proteins. *BMC Cell Biol.* 8: 13.
7. Natoli, R., Provis, J., Valter, K. and Stone, J. 2008. Expression and role of the early-response gene Oxr1 in the hyperoxia-challenged mouse retina. *Invest. Ophthalmol. Vis. Sci.* 49: 4561-4567.
8. Volkert, M.R., Wang, J.Y. and Elliott, N.A. 2008. A functional genomics approach to identify and characterize oxidation resistance genes. *Methods Mol. Biol.* 477: 331-342.
9. Chung, K.R. and Liao, H.L. 2008. Determination of a transcriptional regulator-like gene involved in biosynthesis of elsinochrome phytotoxin by the citrus scab fungus, *Elsinoë fawcettii*. *Microbiology* 154: 3556-3566.

CHROMOSOMAL LOCATION

Genetic locus: Oxr1 (mouse) mapping to 15 B3.1.

PRODUCT

Oxr1 (m): 293T Lysate represents a lysate of mouse Oxr1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

Oxr1 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive Oxr1 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.