

Metallothionein (FL-61): sc-11377

BACKGROUND

Metallothionein (MT) is a sulfhydryl- and cysteine-rich protein found in microorganisms, plants and all invertebrate and vertebrate animals. Metallothioneins are a group of ubiquitous low-molecular-weight proteins that have functional roles in cell growth, repair and differentiation. Metallothioneins are implicated primarily in metal ion detoxification, in that they are essential for the protection of cells against the toxicity of cadmium, mercury and copper. Metallothionein, as an acute phase or stress-response protein and free radical scavenger, is related to inflammation and cellular protection from reactive forms of oxygen, ionizing radiation, pharmacological agents and mutagens. Metallothioneins are known to be broadly expressed in heart, liver, kidney, breast and testis tissue.

REFERENCES

- Ioachim, E.E., et al. 2000. Immunohistochemical localization of Metallothionein in endometrial lesions. *J. Pathol.* 191: 269-273.
- Liu, J., et al. 2000. Metallothionein-I/II null mice are more sensitive than wildtype mice to the hepatotoxic and nephrotoxic effects of chronic oral or injected inorganic arsenicals. *Toxicol. Sci.* 55: 460-467.
- Cai, L., et al. 2000. Induction of Metallothionein synthesis with preservation of testicular function in rats following long term renal transplantation. *Urol. Res.* 28: 97-103.

SOURCE

Metallothionein (FL-61) is a rabbit polyclonal antibody raised against amino acids 1-61 representing full length Metallothionein 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.

APPLICATIONS

Metallothionein (FL-61) is recommended for detection of all Metallothionein isoforms 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Metallothionein (FL-61) is also recommended for detection of all Metallothionein isoforms in additional species, including equine, canine, bovine and porcine.

Molecular Weight of Metallothionein polymerized forms: 15-42 kDa.

Positive Controls: mouse heart extract: sc-2254 or rat heart extract: sc-2393.

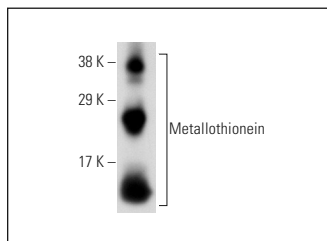
STORAGE

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

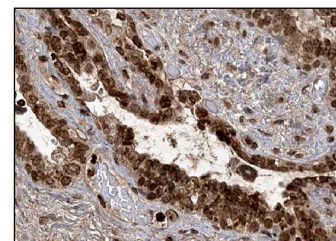
RESEARCH USE

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

DATA



Metallothionein (FL-61): sc-11377. Western blot analysis of Metallothionein expression in rat heart tissue extract.



Metallothionein (FL-61): sc-11377. Immunoperoxidase staining of formalin fixed, paraffin-embedded human seminal vesicle tissue showing nuclear and cytoplasmic staining of glandular cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

- Liu, A.L., et al. 2004. Metallothionein protects bone marrow stromal cells against hydrogen peroxide-induced inhibition of osteoblastic differentiation. *Cell Biol. Int.* 28: 905-911.
- Brown, D.R. 2004. Role of the prion protein in copper turnover in astrocytes. *Neurobiol. Dis.* 15: 534-543.
- Kawagoe, M., et al. 2005. Orally administered rare earth element cerium induces Metallothionein synthesis and increases glutathione in the mouse liver. *Life Sci.* 77: 922-937.
- Dohi, Y., et al. 2005. Role of Metallothionein isoforms in bone formation processes in rat marrow mesenchymal stem cells in culture. *Biol. Trace Elem. Res.* 104: 57-70.
- Yoo, B.M., et al. 2005. Amelioration of pancreatic fibrosis in mice with defective TGFβ signaling. *Pancreas* 30: e71-e79.
- Shibayama, Y., et al. 2007. Effect of pre-treatment with St. John's Wort on nephrotoxicity of cisplatin in rats. *Life Sci.* 81: 103-108.
- Saha, P., et al. 2008. *In vitro* radiation induced alterations in heavy metals and Metallothionein content in *Plantago avata* Forsk. *Biol. Trace Elem. Res.* 124: 251-261.
- Shrivastava, K., et al. 2008. Neuroprotective effect of cobalt chloride on hypobaric hypoxia-induced oxidative stress. *Neurochem. Int.* 52: 368-375.
- Lee, J.D., et al. 2009. Cadmium concentration and metallothionein expression in prostate cancer and benign prostatic hyperplasia of humans. *J. Formos. Med. Assoc.* 108: 554-559.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.