

▶ Metallothionein 4 (S-11): sc-168580

BACKGROUND

Metallothionein (MT) is a sulfhydryl- and cysteine-rich protein that is 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. Due to their essential role in the protection of cells against the toxicity of cadmium, mercury, and copper, metallothioneins are implicated primarily in metal ion detoxification. 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

1. Ioachim, E.E., et al. 2000. Immunohistochemical localization of Metallothionein in endometrial lesions. *J. Pathol.* 191: 269-273.
2. 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.
3. 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.
4. Florianczyk, B., et al. 2000. Metallothionein levels in cell fractions from breast cancer tissues. *Acta Oncol.* 39: 141-143.
5. Theocharis, S.E., et al. 2000. Liver Metallothionein expression in thioacetamide-intoxicated rats. *Pathol. Res. Pract.* 196: 313-319.
6. Kang, Y.J., et al. 2000. Metallothionein inhibits myocardial apoptosis in copper-deficient mice: role of atrial natriuretic peptide. *Lab. Invest.* 80: 745-757.
7. Syring, R.A., et al. 2000. Cloning and sequencing of cDNAs encoding for a novel copper-specific Metallothionein and two cadmium-inducible Metallothioneins from the blue crab *Callinectes sapidus*. *Comp. Biochem. Physiol. C Toxicol. Pharmacol.* 125: 325-332.
8. Jayasurya, A., et al. 2000. Infiltrating lymphocytes in undifferentiated nasopharyngeal cancer lack Metallothionein expression. *Cancer Lett.* 155: 99-104.

CHROMOSOMAL LOCATION

Genetic locus: MT4 (human) mapping to 16q12.2; Mt4 (mouse) mapping to 8 C5.

SOURCE

Metallothionein 4 (S-11) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Metallothionein 4 of human origin.

STORAGE

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

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-168580 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Metallothionein 4 (S-11) is recommended for detection of Metallothionein 4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with other Metallothionein family members .

Metallothionein 4 (S-11) is also recommended for detection of Metallothionein 4 in additional species, including canine.

Suitable for use as control antibody for Metallothionein 4 siRNA (h): sc-93186, Metallothionein 4 shRNA Plasmid (h): sc-93186-SH and Metallothionein 4 shRNA (h) Lentiviral Particles: sc-93186-V.

Molecular Weight of Metallothionein 4: 7 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

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