Mt1 binds cadmium

Atrian, S., May, B.

European Bioinformatics Institute, New York University Langone Medical Center, Ontario Institute for Cancer Research, Oregon Health and Science University.

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Introduction

Reactome is open-source, open access, manually curated and peer-reviewed pathway database. Pathway annotations are authored by expert biologists, in collaboration with Reactome editorial staff and cross-referenced to many bioinformatics databases. A system of evidence tracking ensures that all assertions are backed up by the primary literature. Reactome is used by clinicians, geneticists, genomics researchers, and molecular biologists to interpret the results of high-throughput experimental studies, by bioinformaticians seeking to develop novel algorithms for mining knowledge from genomic studies, and by systems biologists building predictive models of normal and disease variant pathways.

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Literature references

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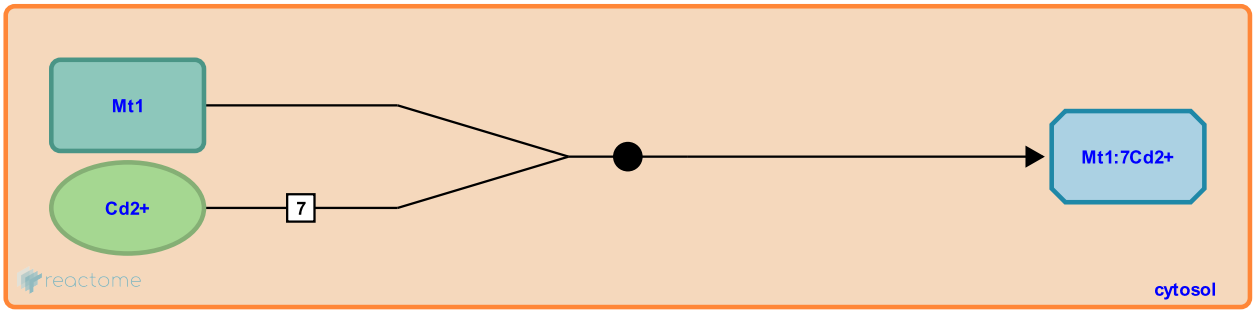
Stable identifier: R-MMU-6798570

Type: binding

Compartments: cytosol



Mouse Mt1 binds 7 atoms of divalent cadmium (Zangger et al. 1999, Tio et al. 2004, Artells et al. 2013). The mMt1 isoform exhibits metal ion binding abilities distinct from those of mMt2, with mMt2 showing a clear preference for Zn(II) coordination, if compared to Cu(I) or even to Cd(II). This is in full agreement with the gene expression regulation pattern for the Mt1 and Mt2 genes, as well as with the hypothesized preferential role of mMt2 in Zn(II) homeostasis mechanisms, while Mt1, possibly differentiated from a most recent duplication event in the mammalian metallothionein gene cluster, would have evolved to detoxify Cd(II), and probably other divalent metal ions (Artells et al, 2013).

Literature references

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Editions

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