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Effects of metallothionein on the concentrations of trace elements in mice under the stress conditions

[Masufumi Takiguchi](#)¹⁾, [Takako Akiyama](#)¹⁾, [Masataka Ifuku](#)¹⁾, [Minoru Higashimoto](#)¹⁾,
[Masuo Kondoh](#)²⁾, [Shinya Suzuki](#)¹⁾ and [Masao Sato](#)¹⁾

1) Faculty of Pharmaceutical Sciences, Tokushima Bunri University

2) Faculty of Pharmaceutical Sciences, Showa Pharmaceutical University

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Abstract:

Our object of this study was to investigate the effects of metallothionein, metal binding protein, on the change of the tissue distribution of essential metals by restraint stress. Wild-type and MT-null mice were restrained in wire net frame for 18 hours. After the stress load, 10 organs of brain, thymus gland, testis, spleen, kidney, lung, heart, small intestine, stomach, and liver were removed. Each organ measured the 9 metals (Mg, Cr, Mn, Fe, Co, Cu, Zn, Se, Mo) concentration by inductively coupled plasma mass spectrometer (ICP-MS). In conclusion, Zn, Mn and Mo in liver, stomach, and small intestine were easy to respond to the restraint stress load. Though MT is indispensable for liver Zn concentration increase by the restraint stress, the factor except for MT seems to be concerned in the part in the increase of zinc in stomach and small intestine.

Key words: [Metallothionein](#), [Stress](#), [Trace elements](#), [Zinc](#), [Manganese](#), [Molybdenum](#), [Mouse](#)

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