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ONLINE ISSN : 1880-1404

PRINT ISSN : 0916-717X

Biomedical Research on Trace Elements

Vol. 15 (2004) , No. 3 259-261

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Evaluation of Immunotoxic Effects of Arsenic and Other Trace Elements on Human Peripheral Blood Monocytes

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(Accepted: July 29, 2004)

Abstract:

In this study, we examined whether arsenic has any toxicological effects on the differentiation of human peripheral blood monocytes into macrophages by macrophage colony stimulating factor (M-CSF) *in vitro* compared with that of other trace elements (metallic compounds), and found that trivalent inorganic arsenite sensitively inhibited the M-CSF-induced *in vitro* maturation of monocytes into macrophages at very low concentrations, nM levels, although other metallic compounds, including chromium, selenium, cadmium, mercury, zinc, nickel, copper, cobalt, manganese and other human pentavalent arsenic metabolites, such as inorganic arsenate, monomethylarsonic acid and dimethylarsinic acid showed cytolethality in monocytes at μ -mM levels [1]. This work may have implications in arsenic-induced chronic inflammatory poisoning in humans.

Key words: [arsenic](#), [arsenite](#), [trace element](#), [metal](#), [monocyte](#), [macrophage](#), [immunotoxicity](#)

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Teruaki Sakurai, Norifumi Tomita, Takami Ohta, Chikara Kojima, Yukie Hariya, Ayumu Mizukami and Kitao Fujiwara, "Evaluation of Immunotoxic Effects of Arsenic and Other Trace Elements on Human Peripheral Blood Monocytes", Biomedical Research on Trace Elements, Vol. **15**, pp.259-261 (2004) .

JOI JST.JSTAGE/brte/15.259

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