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Th1/Th2 Balance in Mouse Delayed-type Hypersensitivity Model with Mercuric Chloride *via* Skin and Oral Mucosa

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Abstract: In order to compare delayed-type hypersensitivity (DTH) among different exposure sites, we evaluated the sensitization potency of mercuric chloride ($HgCl_2$) *via* exposure to the skin, or oral or esophageal mucosa using the mouse ear swelling test. Furthermore, we investigated in vitro splenocyte proliferation reaction and cytokine profile in $HgCl_2$-exposed and control mice. Sensitization with $HgCl_2$ was established *via* the skin and oral mucosa but not *via* the esophageal mucosa. The splenocyte proliferation reaction was significantly enhanced to a similar degree in skin and oral mucosa-sensitized mice compared with in the control mice. IL-10 levels from cultured splenocytes were significantly increased in skin and oral mucosa-sensitized mice compared with those in control mice, whilst IFN-γ significantly increased only in splenocytes from skin-sensitized mice. These results suggest that exposure of the skin or oral mucosa to $HgCl_2$ can induce DTH, but that Th1/Th2 balance differs according to the site of antigen exposure.

Key words: Mercury, $HgCl_2$, Oral mucosa, DTH, Mice

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