

## Search of itch-producing substance(s) released from skin cells of atopic dermatitis model mice

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Atopic dermatitis (AD) is a highly pruritic, chronic skin disease. Some mediators other than histamine are thought to play a major role in itch in AD. We have recently established an AD mouse model characterized by severe itch. In the present study, we searched itch-producing substance (pruritogen) released from skin cells of the model mice. Hairless mice were fed a special diet deficient in unsaturated fatty acids and starch to induce skin barrier dysfunction, and then ointments containing a crude extract of house-dust mite were repeatedly applied to the skin of the mice (AD mice). In AD mice, robust scratching behavior was observed especially after application of the mite extract, which was not suppressed by a histamine H1 receptor antagonist olopatadine. To identify the pruritogen(s), skin cells isolated from the AD mice were incubated in the medium containing the mite extract, and the conditioned medium was intradermally injected into normal mice. Scratching response was clearly induced by the samples derived from mite extract-treated AD skin cells, which was not inhibited by olopatadine. On the other hand, the mite extract itself did not induce scratching response. In conclusion, we successfully collected pruritogenic substance(s) released from skin cells of the AD model mice.