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[Lab. of Pharmacology]

**Cyclosporin A and FK-506 Inhibit Development of Superantigen-potentiated
Collagen-induced Arthritis in Mice.**

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Staphylococcal enterotoxine B (SEB; superantigen) accelerated the onset of arthritis in mice preimmunized with type II collagen. Cyclosporin A and FK-506 inhibited the induction and development of clinical signs and histopathological changes of SEB-potentiated collagen-induced arthritis in mice. Simultaneously, both cyclosporin A and FK-506 inhibited the development of humoral and cellular immunity to type II collagen. The expression of IL-2 receptor (CD25) by SEB on splenocyte T cells from collagen-preimmunized mice was inhibited by both agents in *ex vivo* experimentation.

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[Lab. of Pharmacology]

**Effect of Spikelets of Miscanthus Sinensis on IgE-Mediated Biphasic
Cutaneous Reaction in Mice.**

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The effect of spikelets of *M. sinensis* on IgE-mediated biphasic cutaneous reactions was investigated in passively and actively sensitized BALB/c mice. Skin reactions were elicited by an epicutaneous challenge of dinitrofluorobenzene (DNFB). The administrations of a nondialysable water extract of *M. sinensis* significantly inhibited the biphasic cutaneous reactions. The inhibitory effect was much stronger than those of prednisolone and amlexanox. The active component(s) was predominantly located in the glycoprotein fraction. The fraction suppressed the accumulation of inflammatory cells. The biphasic ear swelling was also improved by an administration of the fraction 24 h before active sensitization. The glycoprotein fraction of *M. sinensis* is suggested to inhibit not only the IgE-mediated allergic inflammatory reaction but also the IgE formation.

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[Lab. of Pharmacology]

**Pharmacological Modulation of LPS-Induced MIP-1 α Production by
Peripheral Blood Mononuclear Cells.**

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In the present study, we investigated the effects of some anti-asthmatic drugs on the production of macrophage inflammatory protein-1 α (MIP-1 α), in response to LPS by peripheral blood mononuclear cells. MIP-1 α production was induced by LPS concentration-dependently. Actinomycin D and cycloheximide inhibited MIP-1 α production completely. Although β -agonists only showed a slight inhibitory effect on MIP-1 α production, it was potentiated by the simultaneous treatment with roliplam. db-cAMP suppressed MIP-1 α production dose-dependently. Present data indicate that the production of MIP-1 α is regulated by cAMP and that cAMP could provide a useful target for therapeutic treatment in asthmatic diseases and other diseases where MIP-1 α is involved in their etiology.

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[Lab. of Pharmacology]

**Involvement of Bruton's Tyrosine Kinase in Fc ϵ RI-dependent Mast Cell
Degranulation and Cytokine Production.**

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We investigated the role of Bruton's tyrosine kinase (Btk) in Fc ϵ RI-dependent activation of mouse mast cells, using *xid* and *btk* null mutant mice. In *xid* mice, IgE-mediated anaphylactic reactions were blunted. Cultured mast cells derived from the bone marrow cells of *xid* or *btk* null mice exhibited mild impairments in degranulation, and more profound defects in the production of several cytokines upon Fc ϵ RI cross-linking. Transcriptional activities of these cytokine genes were severely reduced. Present results demonstrate an important role for Btk in the full expression of Fc ϵ RI signal transduction in mast cells.