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Effects of NIP-502 on antigen-induced bronchial responses and allergic reactions in animal models.

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We examined the effect of a newly synthesized pyridazinone derivative, NIP-502 [4-chloro-5-(3-ethoxy)-4-phenoxybenzamine)-3(2H)-pyridazinone], on antigen-induced bronchial responses and allergic reactions in animal models. NIP-502 inhibited the antigen-induced immediate asthmatic response in passively sensitized guinea pigs. NIP-502 improved antigen-induced airway hyperresponsiveness to acetylcholine and inhibited the antigen-induced increase in the number of inflammatory leukocytes in bronchoalveolar lavage fluid in mice. The inhibitory effects of NIP-502 on bronchial responses are similar to those of prednisolone, but this compound seemed to act more selectively on the respiratory tract than prednisolone.

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Effects of roxithromycin on proliferation of peripheral blood mononuclear cells and production of lipopolysaccharide-induced cytokines.

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Roxithromycin (RXM), a new macrolide, has a 14-member macrocycline ring structure. We investigated the effects of RXM on the proliferation of peripheral blood mononuclear cells (PBMCs) and the production of interleukin-1 β (IL-1 β) and tumor necrosis factor α (TNF- α) by PBMCs stimulated with lipopolysaccharide. RXM suppressed the production of IL-1 β and TNF- α slightly during the entire course of the incubation. Suppression of the production of IL-1 β and TNF- α by RXM suggested that this drug might have anti-inflammatory and immunosuppressive effects.

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The effect of a TXA_2 receptor antagonist ON-579 on experimental allergic reactions.

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The effect of a thromboxane A_2 (TXA_2) receptor antagonist, ON-579, on experimental allergic skin and airway reactions was studied in vivo. ON-579 clearly inhibited U-46619-induced increase in respiratory resistance (Rrs), the aerosolized antigen-induced biphasic increase in Rrs and repeated aeroantigen-induced airway hyperreactivity in guinea pigs. ON-579, however, did not have any significant effects on allergic cutaneous reactions in rats. These results suggest that ON-579 is a relatively selective TXA_2 antagonist, especially in the airways, and indicate the efficacy of ON-579 on antigen-induced increase in Rrs and airway hyperreactivity in guinea pigs.