[*Int. Arch. Allergy Immunol.*, **126**, 309-317 (2001)] [Lab. of Pharmacology]

The effects of leukotriene D4 inhalation on the antigen-induced airway hyperresponsiveness and inflammation in 5-lipoxygenase gene-deficient mice.

Naoki KAWADA, Takatoshi YAMADA, Yoshimasa TAKAHASHI, Shota TOKUOKA, Taisei MASUDA, Hiroyuki TANAKA and Hiroichi NAGAI*

The role of 5-lipoxygenase (5-LO) products in the asthmatic broncho-constriction is evident. However, the role of 5-LO products in airway hyperresponsiveness (AHR) and airway inflammation is still under discussion. The effect of LTD4 inhalation on antigen-induced AHR and airway eosinophilia was investigated in 5-LO gene deficient mice. After three inhalations of LTD4, airway responsiveness to acetylcholine was not altered in normal or allergic wild-type and 5-LO KO mice. In contrast, the number of eosinophils in 5-LO KO allergic mice increased to the level of wild-type allergic mice after the inhalation of LTD4. No change in the cytokine levels in BALF and serum immunoglobulin levels were shown after LTD4 inhalation. These findings suggest that LTD4 plays a role in eosinophilic airway inflammation but not in AHR in mice.

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The effect of allergen-induced airway inflammation on airway remodeling in a murine model of allergic asthma.

Hiroyuki TANAKA, Taisei MASUDA, Shota TOKUOKA, Masato KOMAI, Koichi NAGAO, Yoshimasa TAKAHASHI and Hiroichi NAGAI*

We examined the effect of airway inflammation on airway remodeling and bronchial responsiveness in a mouse model of allergic asthma. BALB/c mice were sensitized to ovalbumin (OA), and exposed to aerosolized OA (0.01, 0.1 and 1%). Repeated antigen exposure induced airway inflammation, IgE/IgG1 responses, epithelial changes, collagen deposition in the lungs, subepithelial fibrosis associated with increases in the amount of transforming growth factor (TGF)-β1 in BAL fluid (BALF), and bronchial hyperresponsiveness to acetylcholine. The number of eosinophils in BALF was significantly correlated with TGF-β1 production in BALF and the amount of hydroxyproline. Furthermore, significant correlations were found between these fibrogenic parameters and the bronchial responsiveness.

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Bidirectional negative regulation of human T and dendritic cells by CD47 and its cognate receptor signal-regulator protein-α: Down-regulation of IL-12 responsiveness and inhibition of dendritic cell activation.

Sylvain LATOUR, Hiroyuki TANAKA,* Christian DEMEURE, Veronique MATEO, Manuel RUBIO, Eric J BROWN, Charles MALISZEWSKI, Frederik P LINDBERG, Anna OLDENBORG, Axel ULLRICH, Guy DELESPESSE and Marika SAFRATI

CD47 ligation by CD47 mAb or L-SIRP-α transfectants inhibits IL-12R expression and down-regulates IL-12 responsiveness of activated $CD4^+$ and $CD8^+$ adult T cells without affecting their response to IL-2. Human CD47-Fc fusion protein binds SIRP-α expressed on immature dendritic cells (DC) and mature DC. SIRP-α engagement by CD47-Fc prevents the phenotypic and functional maturation of immature DC and still inhibits cytokine production by mature DC.

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7-Deoxyloganin 7-Hydroxylase in *Lonicera japonica* Cell Cultures.

Nobuyuki KATANO, Hirobumi YAMAMOTO, Reiko IIO and Kenichiro INOUE*

The activity of 7-deoxyloganin 7-hydroxylase, an enzyme catalyzing the conversion of 7-deoxyloganin into loganin, was detected in a microsomal preparation from the cell suspension cultures of *Lonicera japonica*. It was dependent on NADPH and molecular oxygen. The enzymatic reaction was inhibited by carbon monoxide as well as by several cytochrome P450 inhibitors, especially ketoconazole, indicating that the reaction was mediated by cytochrome P450. The enzyme showed substrate specificity for 7-deoxyloganin. The Km values for 7-deoxyloganin and NADPH were estimated as 170 and 18 μM, respectively, from Lineweaver-Burk plots.