

12th Euro Biotechnology Congress

November 07-09, 2016 Alicante, Spain

Samsoeum water extract attenuates allergic airway inflammation via modulation of Th1/Th2 cytokines and decrease of iNOS expression in asthmatic mice

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Background & Aim: Samsoeum has long been used in Korea and other Asian countries as a traditional medicine to treat various diseases. In this study, we investigated the antiasthma effect of the herbal medicine Samsoeum water extract (SSEW) using an ovalbumin (OVA)-induced asthma mouse model.

Methods: BALB/c mice were sensitized by an intraperitoneal injection of OVA and subsequently challenged with nebulized OVA. We investigated the number of inflammatory cells, the production of Th1/Th2 cytokines and chemokine in bronchoalveolar lavage fluid (BALF), histological changes in lung tissue, the infiltration of inflammatory cells and hyperplasia of goblet cells in lung tissue, the levels of immunoglobulinE (IgE) in BALF and plasma and the expression of inducible nitric oxide synthase (iNOS) in lung tissue.

Results: Our results indicated that SSEW decreased the accumulation of inflammatory cells (particularly, eosinophil and neutrophil) and regulated the balance in the production of Th1/Th2 cytokines and chemokine in BALF. Moreover, SSEW suppressed the level of IgE in BALF and plasma and inhibited the infiltration of inflammatory cells, hyperplasia of goblet cells and the expression of iNOS in lung tissue.

Conclusions: These findings suggest that, because of its anti-inflammatory and antiasthma properties, SSEW may be useful in reducing airway inflammation in the treatment of asthma.

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