3<sup>rd</sup> Global Summit on

## HERBALS & TRADITIONAL MEDICINE October 18-20, 2017 Osaka, Japan

## *Opuntia humifusa* modulates morphological changes characteristic of asthma via IL-4 and IL-13 in an asthma murine model

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A sthma is a chronic pulmonary disease that affects an estimated 235 million people worldwide. Anti-asthmatic drugs such as inhaled corticosteroids, leukotriene receptor antagonists, short/long-acting  $\beta_2$ -agonists and anticholinergic drugs are used to treat asthma; however, they may cause serious adverse health effects. *Opuntia humifusa* (eastern prickly pear) has been used as a food and traditional medicine worldwide, however; its anti-asthmatic effects have not been reported. In this study, we evaluated *O. humifusa* as a potential therapeutic or preventive component of anti-asthmatic drugs. We divided ovalbumin-sensitized mice into the following groups: Normal control, asthma-induced control, dexamethasone-treated group (positive control), 50 mg/kg *O. humifusa*-treated group, 100 mg/kg *O. humifusa*-treated group and 500 mg/kg *O. humifusa*-treated group. Levels of Th1/Th2/Th17-related cytokines were evaluated using RT-PCR, ELISA and immunohistochemistry. *O. humifusa* dose-dependently suppressed the morphological changes typically observed in asthma, such as goblet cell hyperplasia, inflammatory cell infiltration, mucous hyper-secretion and relative basement membrane thickening in the respiratory system. These results may be attributable to regulation of Th1-/Th2/Th17-related factors, especially interleukin (IL)-4 and IL-13. We conclude that *O. humifusa* is a potential anti-asthmatic drug candidate.

## **Biography**

Soon-Young Lee is an Associate Professor at the Department of Nursing at Dongshin University, Republic of Korea. He has received his Doctor of Philosophy degree in Veterinary Basic Studies in Republic of Korea.

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