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Development of Novel Drugs for Chronic Immune Diseases from Korean Traditional Medicine

Jong Soon Lim

College of Oriental Medicine, Daejeon University

Objective

Terminalia chebula was identified from a natural product library as a potent suppressor of T cell activity. These studies examined the effectiveness of *Terminalia chebula* containing formulations against the onset and progression of collagen-induced arthritis (CIA) in mice and other chronic immune disease models.

Methods

Arthritis was induced in DBA/1J mice by subcutaneous immunization with bovine type II collagen on days 0 and 21. Formulations were administered per oral for 4 weeks, after disease onset. Clinical scores, serum antibody levels, and cytokines were measured, and flow cytometric analysis and real-time reverse transcription-polymerase chain reaction were performed.

Asthma was induced in Balb/c mice by sensitization (i.p. injection) and challenge (local administration) with ovalbumin.

Results

In *Terminalia chebula* containing formula dosing models, all clinical scores, serum levels of total and anti-collagen IgG, and levels of interleukin-10 (IL-10) and IL-6 were reduced, while serum levels of transforming growth factor (TGF) were markedly elevated. The number of granulocytes was reduced, but the proportion of CD4+,CD25+T cells was greater in the knee joints of formula-treated CIA mice. Expression of Foxp3 and TGF messenger RNA was also augmented significantly in the knee joints of formula-treated CIA mice model.

Key words

Traditional Korean Medicine, Regulatory T cell, Rheumatoid arthritis, Autoimmune disease