

POSTER PRESENTATION

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P01.20. The effect of WIN-34B on cartilage protection and regeneration by chondrogenesis from subchondral bone *in vitro* and *in vivo*

J Huh*, Y Park, B Seo, Y Baek, J Lee, D Choi, D Park

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Purpose

WIN-34B is a butanol fraction extract from the mixture of two oriental herbs, the dried *Lonicera japonica* flowers and the root of *Anemarrhena asphodeloides*. In previous studies, we indentified that WIN-34B has analgesic, anti-inflammatory, gastroprotective and safety effects. In this study, we measured the major components and investigated the efficacy of WIN-34B on cartilage protection and regeneration through the chondrogenesis of mesenchymal progenitor cells of subchondral bone for the treatment of osteoarthritis and development of new medicines.

Methods

The major chemical composition and quantification of WIN-34B was determined by high performance liquid chromatography. The therapeutic effect of WIN-34B was investigated using a collagenase-induced osteoarthritis (CIA) rabbit model and also by studying chondrogenesis from mesenchymal stem cell of subchondral bone of knee joints.

Results

In our *in vivo* study using a CIA rabbit model, oral administration of WIN-34B resulted in significant reduction of general clinical and histological scores, associated with a significant inhibition of cartilage loss evaluated by the measurement of the proteoglycan and collagen content. The oral administration of WIN-34B against cartilage destruction had more marked effectiveness than that of the specific COX-2 inhibitor, ETCP, Gluco-Hcl in the CIA rabbit model. Immunohistochemistry analysis of this study showed that oral

administration of WIN-34B resulted in significant increases of CD105 and CD73, typical cell surface antigens known from MSCs. Type II collagen and aggrecan, typical cartilage matrix molecules, were also significantly positive.

Conclusion

These results suggest that WIN-34B may have shown cartilage protection and cartilage regeneration in a CIA rabbit model through the chondrogenesis of mesenchymal progenitor cells of subchondral bone.

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Kyung Hee University, Seoul, Republic of Korea