

## Supplementary Materials:

# Ginseng gintonin enhances hyaluronic acid and collagen release from human dermal fibroblasts through lysophosphatidic acid receptor interaction

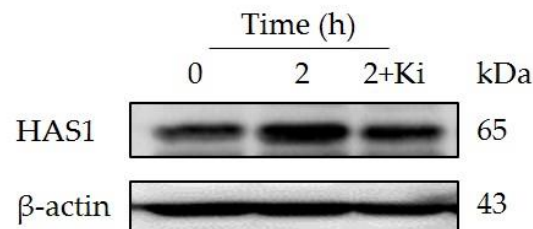
Rami Lee<sup>1</sup>, Na-Eun Lee<sup>1</sup>, Hongik Hwang<sup>2</sup>, Hyewhon Rhim<sup>2</sup>, Ik-Hyun Cho<sup>3</sup>, and Seung-Yeol Nah<sup>1,\*</sup>

<sup>1</sup> Ginsentology Research Laboratory and Department of Physiology, College of Veterinary Medicine, Konkuk University, Seoul 05029, Republic of Korea; rmllee12@konkuk.ac.kr, dhkdnrl@naver.com

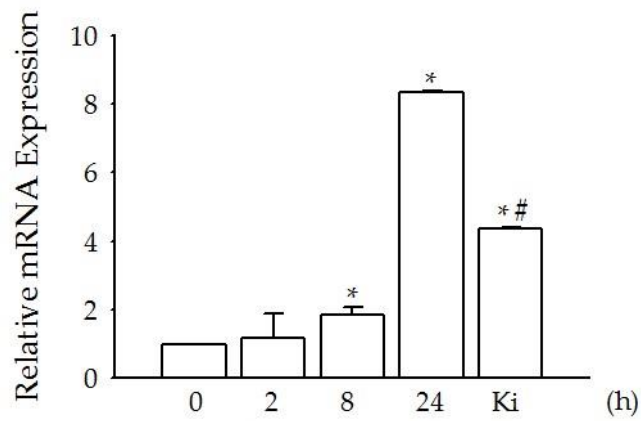
<sup>2</sup> Center for Neuroscience, Korea Institute of Science and Technology, Seoul, 02792, Republic of Korea; e-hrhim@kist.re.kr, hongik@kist.re.kr

<sup>3</sup> Department of Convergence Medical Science, Department of Science in Korean Medicine and Brain Korea 21 Plus Program, Graduate School, Kyung Hee University, Seoul, 02447, Republic of Korea; ihcho@khu.ac.kr

\*Correspondence: synah@konkuk.ac.kr; Tel.: +82-2-450-4154



**Figure S1. The inhibitory effect of Ki16425 on GEF-induced HAS1 expression in HDFs.** HDFs were treated with GEF (10  $\mu$ g/mL) and HAS1 levels were measured by immunoblotting at 0 and 2 h in the absence or presence of Ki16425 (10  $\mu$ M). The increase of HAS1 expression by GEF was inhibited by Ki16425.



**Figure S2. The inhibitory effect of Ki16425 on GEF-induced increase of COL3A1 gene expression in HDFs.** GEF-mediated COL3A1 gene expression is blocked by Ki16425. HDFs were treated with GEF (10  $\mu\text{g}/\text{mL}$ ) for 0, 2, 8, and 24 h in the absence or presence of Ki16425 (10  $\mu\text{M}$ , 24 h). Data are expressed as the mean  $\pm$  S.E.M. of triplicate samples analyzed using the  $2^{-\Delta\Delta\text{Ct}}$  method, with data normalized to the expression levels of the housekeeping gene  $\beta$ -actin. \* $P < 0.05$  vs. Control (0 and 24h); # $P < 0.05$  vs. 24 h. The experiments were repeated for 3 times (n=3).