

Figure S1. Seomae mugwort extract and jaceosidin did not affect cell viability in mouse articular chondrocytes. **(A)** The Seomae mugwort extract was used to treat articular chondrocytes at concentrations of 0, 10, 50, and 100 µg/mL for 12 h and 24 h and analyzed using the LDH assay. **(B)** Articular chondrocytes were treated with jaceosidin at concentrations of 0, 10, 20, 40, and 80 µM for 12 h and 24 h and analyzed using the LDH assay. Values are the mean \pm SEM as analysis by one-way ANOVA with Bonferroni's test ($n = 4$). Significant differences from the pro-inflammatory cytokine-treated group value: ** $P < 0.01$, *** $P < 0.001$, # $P < 0.05$ compared to the control group.

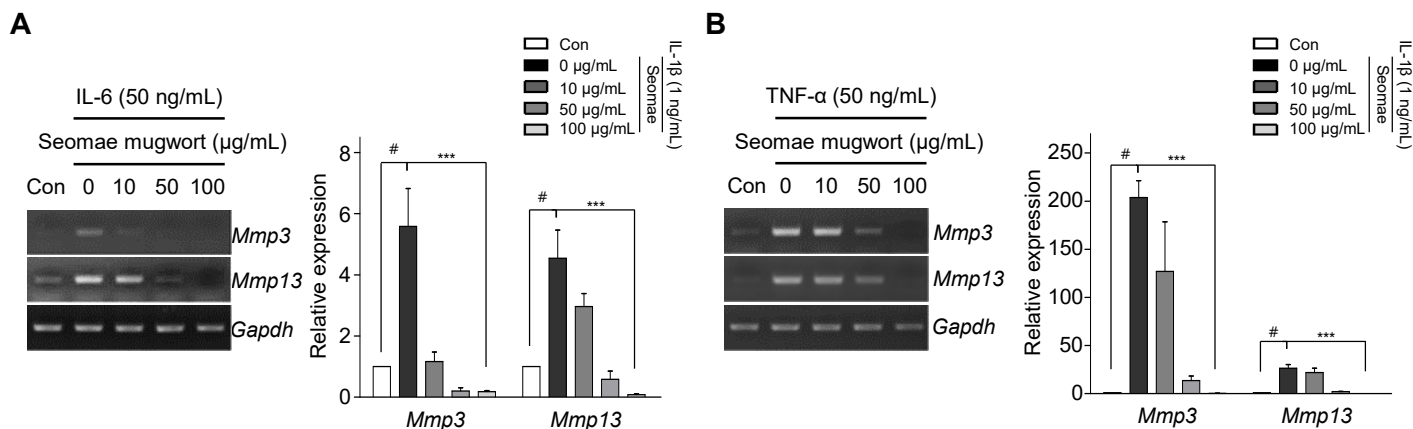


Figure S2. Seomae mugwort extract suppressed the pro-inflammatory cytokine-induced MMP3 and MMP13 expression in chondrocytes. (**A**, **B**) Chondrocytes were treated with IL-6 (50 ng/mL) (**A**) and TNF- α (50 ng/mL) (**B**) and co-treated with different concentrations of the Seomae mugwort extract for 24 h. MMP3 and MMP13 expression levels were evaluated by PCR (**A**, **B**; left) and qRT-PCR (**A**, **B**; right). Values are the mean \pm SEM as analyzed by one-way ANOVA with Bonferroni's test. Significant differences from the pro-inflammatory cytokine-treated group value: **P < 0.01, ***P < 0.001, #P < 0.05 compared to the control group. Seomae, Seomae mugwort.

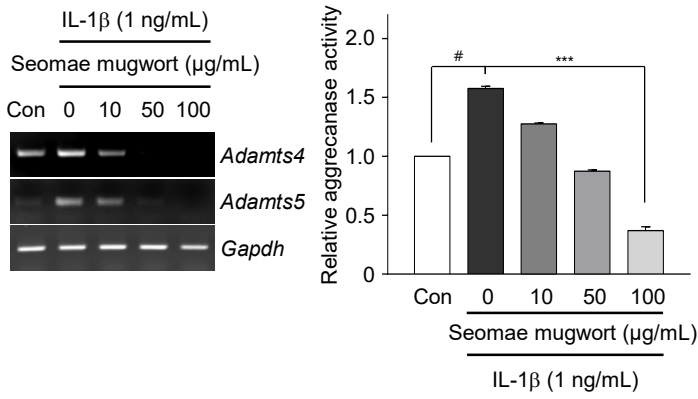
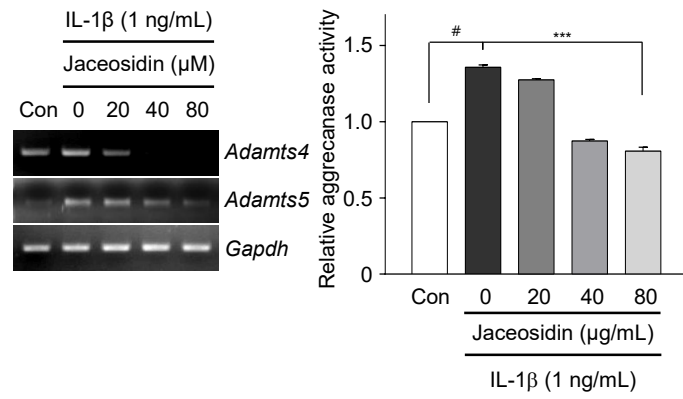
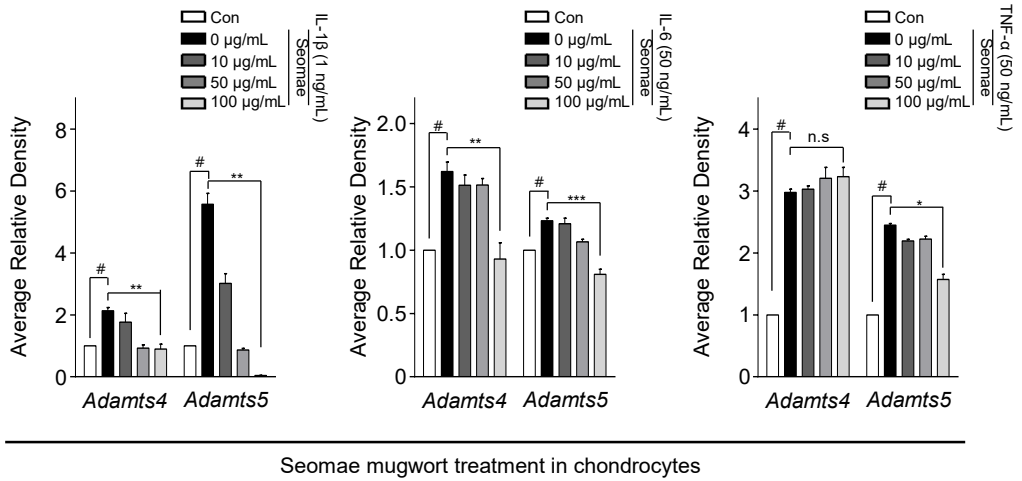
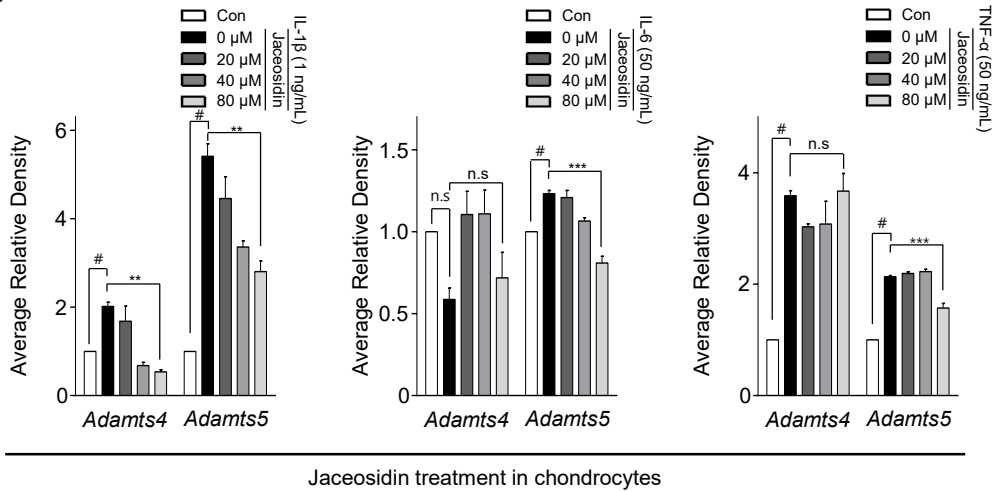
A**B****C****D**

Figure S3. Seomae mugwort extract and jaceosidin suppressed the IL-1 β -, IL-6-, and TNF- α -induced ADAMTS4 and ADAMTS5 expression in chondrocytes. Chondrocytes were treated with IL-1 β (1 ng/mL) and co-treated with different concentrations of the Seomae mugwort extract for 24 h (**A**) and jaceosidin for 12 h (**B**). ADAMTS4 and ADAMTS5 expression levels were evaluated by PCR (**A, B**; left) and aggrecanase assay (**A, B**; right) analyses. (**C, D**) Chondrocytes were treated with IL-1 β (1 ng/mL), IL-6 (50 ng/mL), and TNF- α (50 ng/mL), respectively, and co-treated with Seomae mugwort extract and jaceosidin. ADAMTS4 and ADAMTS5 were detected by qRT-PCR in Seomae mugwort (**C**) and jaceosidin (**D**) treatment. Values are the mean \pm SEM as analyzed by one-way ANOVA with Bonferroni's test (n = 4). Significant differences from the pro-inflammatory cytokine-treated group value: **P < 0.01, ***P < 0.001, #P < 0.05 compared to the control group. Seomae, Seomae mugwort.

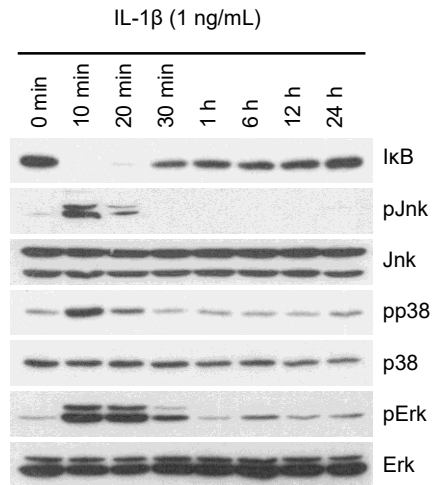


Figure S4. IL-1 β induced NF- κ B and MAPK signaling in mouse chondrocytes. Chondrocytes were treated with IL-1 β (1 ng/mL) for different durations of time from 10 min to 24 h. The activation of each signaling pathway is shown by western blot.