P03-031

Effects of *Eleutherococcus Sessiliflorus* and *Glycyrrhiza Korshinskyi* Grig. Extract on the Regulation of myoblasts differentiation and Cytotoxicity in C2C12 Cells

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Background : Recently, as interest in sarcopenia has increased, interest in medicinal crops that are effective in improving sarcopenia is also increasing. *Eleutherococcus Sessiliflorus*(ES) and *Glycyrrhiza Korshinskyi* Grig.(GKG) are herbal medicines that have been used in Korea for a long time. Through previous research, the two crops are known to be effective in anti-cancer, anti-inflammatory, and improving immune function, but studies on improving sarcopenia are insignificant. In this study, we would like to see the effect of differentiation regulation and cytotoxicity in C2C12 muscle cells by treating ES and GKG on C2C12 cells.

Methods and Results : Extracts of ES and GKG were prepared using the reflux extraction method. The manufacturing conditions were 70% fermented alcohol and extraction was repeated three times at 85℃. MTT assay was measured to investigate the cytotoxicity of the extracts. To observe the differentiation regulation effect of each extract on C2C12 cells, C2C12 Cells were seeded in a 6-well plate in DMEM complete media with 10% FBS. After 2 days, the media was changed with 2% horse serum(HS)/DMEM containing extracts. Then, 6 days later, it was observed through a microscope. As a result, cytotoxicity was found to be less in ES extract than GKG extract. In addition, we found that the differentiation regulating effect in C2C12 muscle cells was also better in ES extract than GKG extract.

Conclusion : In summary, Among the two crops, the more effective crop in improving sarcopenia is the extract of the ES. When conducting follow-up research based on this in the future, I think it would be a good idea to conduct research using ES as a material.

Materials and Methods

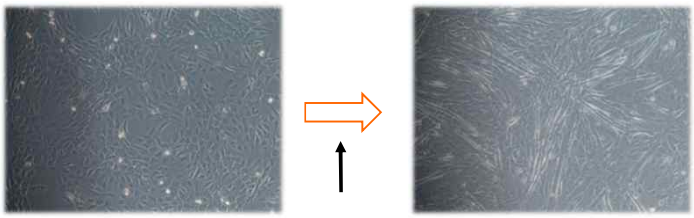
● Sample preparation

Washing and Drying
Eleutherococcus Sessiliflorus(ES) and *Glycyrrhiza Korshinskyi* Grig.(GKG)

⇨

Extraction
70% fermented alcohol

● C2C12 cell differentiation

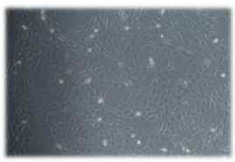


C2C12 cell
- myoblast-

changed with 2% horse serum(HS)/DMEM containing extracts

C2C12 cell
- myotube-

● MTT assay



C2C12 Myoblast culture

ES and GKG extracts treatment

Conducting MTT assay.

Results

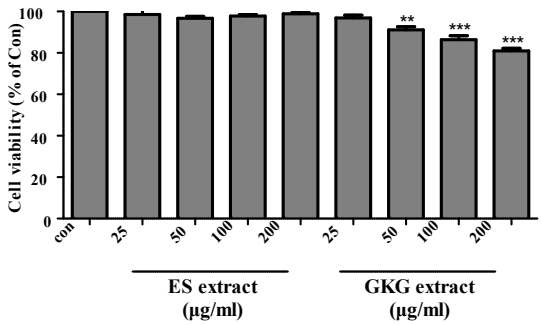
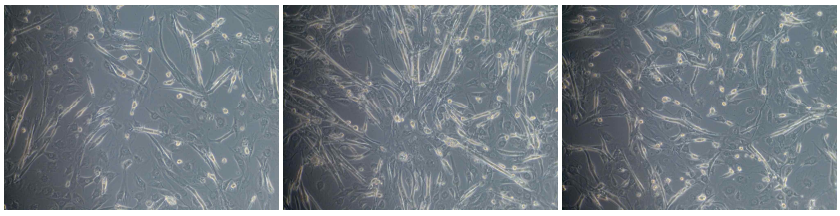
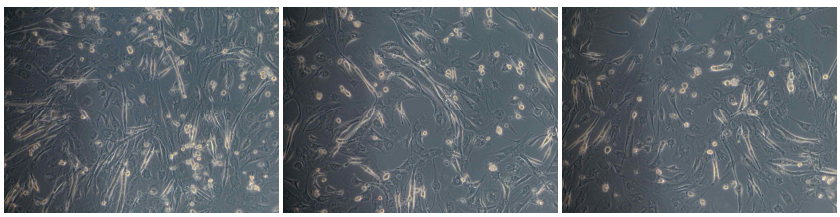


Fig. 1. Effect of *Eleutherococcus Sessiliflorus*(ES) and *Glycyrrhiza Korshinskyi* Grig.(GKG) on cell viability in C2C12 cells. Cells were incubated for 24 hours. Results are represented as mean±standard errors of mean.

Control



ES 25 μg/ml | ES 50 μg/ml | ES 100 μg/ml



GKG 25 μg/ml | GKG 50 μg/ml | GKG 100 μg/ml

Fig. 2. Effect of *Eleutherococcus Sessiliflorus*(ES) and *Glycyrrhiza Korshinskyi* Grig.(GKG) in differentiation phase.

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