

Immuno-enhancing Effect of *Protaetia brevitarsis seulensis* (white grub) Extracts on RAW 264.7 Cell Line.

굼벵이 추출물의 RAW 264.7 세포에 대한 면역증강 효과

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ABSTRACT

Protaetia Brevitarsis Seulensis(white grub) has been traditionally used as medicinal stuff to treat blood stasis, occlusion of menstruation, tetanus and liver cancer in Asian countries (Korea, Japan, China, Taiwan, India and Myanmar). Especially, Donguibogam, which is traditional korean medicinal book, described the white grub as traditional medicine to treat hepatic diseases and vascular disorders. The white grub has been considered as highly nutritional food. The major constituents of white grub are rich in protein, healthy fats, iron, calcium. Recent studies announced that white grub has hepatoprotective effect and anti-microbial effect. However, the immuno-enhancing effect of white grub extracts in RAW 264.7 macrophage cells has not been studied yet.

In this study, the various concentrations of white grub extract were examined to find immuno-enhancing effects on RAW 264.7 cells. Cytotoxicity was determined by MTT assay and immuno-enhancing effect of white grub extract was investigated by measuring nitric oxide (NO) production compared with only lipopolysaccharide (LPS) treatment. White grub extracts (0.001 - 10 mg/ml) did not show cytotoxicity. Additionally, white grub extracts (0.001 - 1mg/ml) had Immuno-enhancing effect on RAW 264.7 cells compared with only LPS treated group. These results might be provided proof to develop beneficial immuno-enhancing material for human health.

Key words : *Protaetia Brevitarsis* Seulensis(white grub), Raw 264.7 cells,
Nitric oxide (NO), Immuno-enhancing, Macrophage

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