

Phytoecdysteroids Contents of Extracts Obtained from Different Parts of Six Ferns Native to Korea

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20-hydroxyecdysone (20E) and ponasteron A (PonA) are phytoecdysteroids known as insect molting hormones. But nowadays, there have been many studies about their healthy functional capacity for mammals including humans (e.g. hypoglycaemic, hypocholesterolaemic, anabolic, skin regeneration effects). Therefore, in this paper, we determined 20E and PonA content in different parts of 6 species of ferns for development of a new natural healthy functional agenda. Lyophilized fronds and rhizomes from 6 species were grinded and extracted with MeOH for 30 minutes using a sonication bath (42 kHz). Extracts were evaporated with a rotary vacuum evaporator and the residue was dissolved in nano-pure grade water. H₂O samples, containing ecdysteroids, were purified with a C₁₈ cartridge for solid phase extraction (SPE). Eluted samples were injected to HPLC system and analyses were monitored at 242 nm. The HPLC column was a Zorbax Eclipse XDB-C₁₈ (150×4.6 mm, 5 μm) and the mobile phase was a Methanol-water mixture (gradient 40 to 80% MeOH for 20 minutes). The highest 20E content appeared in the methanolic extract obtained from the rhizome of *Adiantum pedatum* (45.685 μg·g⁻¹ DW) and was followed by the rhizome of *Dryopteris nipponensis* (42.525 μg·g⁻¹ DW). Another extract showed a variety of 20E contents from 3.404 to 37.551 μg·g⁻¹ DW. In PonA, the highest contents were observed in the frond extract of *D. nipponensis* (87.576 μg·g⁻¹ DW) and another extract ranged from 15.353 to 39.264 μg·g⁻¹ DW. Accordingly, the results suggest that *D. nipponensis* has a high potential for healthy agenda for functional additive to foods, medicines and cosmetics.