

**Botanical Drug Development for AD Treatment from Jeju
Marine Natural Products**
(제주 해양천연물을 이용한 치매치료 신약 개발)

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Phlorotannins are a kind of polyphenols which are produced as second metabolites from brown algae. Unlike terrestrial polyphenols, the chemical structures of phlorotannins are purely derived from phloroglucinol (1,3,5-trihydroxybenzene). The wide variety of their chemical structures are generated by combinations of varied degree of polymerization and regiochemistry of linkage between phloroglucinols. Among them, a special class of phlorotannins with fused-ring structures (eckols) are abundantly found in *Ecklonia cava* off the coast of Jeju island and have shown great medicinal potentials. Although they were discovered from brown algae in 1980s, until the end of the 20th century, only very limited medicinal information were available including antibacterial, antioxidant and anti-plasmin inhibitory activities. Since 2005, the number of publications on their bioactivities has exponentially increased and has driven commercialization in nutraceutical and cosmetic industries. Based on currently available in vitro and in vivo studies, they have been shown to have excellent safety profiles and pharmacological potentials in many important areas including Alzheimer's disease, cardiovascular diseases, metabolic diseases, cancer and neurodegenerative diseases. Currently an IND for a botanical drug has been approved by US FDA and is under clinical studies. This presentation reviews the chemistry, biological activities of this unique class of marine phytochemical which shows tremendous potentials in the future medicinal science and industry.

주제어 : Phlorotannins, *Ecklonia cava*, Alzheimer's disease, FDA
