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Potential source of medicinal compounds from liverworts and inedible fungi: Terpenoids and bis-bibenzyls

Over several hundred new compounds have been isolated from the liverworts and more than 40 new carbon skeletal terpenoids and aromatic compounds are found in this class. The biological activity ascribed to the liverworts is due to mainly lipophilic sesqui- and diterpenoids, phenolic compounds and acetogenins which are constituents of oil bodies. A characteristic structural phenomenon of liverwort constituents is that most of sesqui- a diterpenoids is enantiomers of those found in higher plants. It is noteworthy that different species of the same genera, like *Frullania tamarisci* and *Frullania dilatata* may each produce different sesquiterpene enantiomers. Most of liverworts elaborate characteristic odiferous, hot tasting and bitter sesqui- and diterpenoids many of which show allergenic contact dermatitis, cytotoxicity, insecticide, anti-HIV, antimicrobial, antifungal, anion radical release inhibitory, plant growth regulatory, neurotrophic and NO production inhibitory. There are about 1500 identified fungi in Japan among which 300 species are edible, 1150 inedible and 50 toxic. The chemical constituents of toxic and edible fungi have been fully studied. Recently, many biologically interesting compounds were isolated from inedible mushrooms by our group and their structures and biological activity reported.

Biography

Yoshinori Asakawa obtained his first degree in Biology at Tokushima University, Japan, and then went to graduate school at Hiroshima Univ. in 1964 to study organic chemistry. He has authored and co-authored more than 600 original papers, 30 reviews and 37 books and monographs. For his outstanding research, he was awarded the first Hedwig Medal from the International Association of Bryologists, the Phytochemistry Prize and Certification from Elsevier, the International Symposium on Essential Oils Award, the Jack Cannon International Gold Medal, Medical University of Lublin Gold Medal, the Japanese Society of Pharmacognosy Award, and the Tokushima News Paper Award. He served twice as Dean of Faculty of Pharmaceutical Sciences at Tokushima Bunri University (TBU), and is currently Director of the Institute of Pharmacognosy (1986-present). He is the President of the Phytochemical Society of Asia (PSA) since 2007. In 2012, Medical University of Lublin Poland gave him the title 'Doctor Honoris Causa' and in the same year, he obtained the Honorary Professorship from Amity University in India and Fellow from The National Society of Ethnopharmacology, India.

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