

Unprecedented Bioactive Naturally-occurring Compounds from the Rare and Endangered Plants Endemic to China

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Abstract : Over the past decades, the global biodiversity has continued to decline. The threats to the terrestrial plant species have increased under anthropogenic activities and other massive ecological change impacts. The situation is much more serious in China, the third richest countries regarding plant biodiversity in the world. It was not until 1992 that the first volume of the China Plant Red Data Book was published. Nowadays, a significant number of Chinese endemic plants have been threatened (The IUCN Red List). Nevertheless, plant-originated natural products (NPs) have continued to play a crucial role in the drug discovery and development process. The opportunity for identifying new chemical entities for emerging and malignant diseases depends on a diversity of drug-producing species. Several statistical surveys unveiled that the rare and endangered plants (REPs) have proven to be better sources for drug discovery than other botanic sources. The identification of bioactive NPs from REPs reveals the importance of conservation efforts in preventing species diversity loss and addressing human diseases at the same time. Thus, there is an urgent need to investigate these fragile REPs. Since 2013, our group has initially launched a special program to systematically identify bioactive/novel NPs from REPs native to China. The selected plant species were generally collected from the remote Mountain areas, and have never been chemically or pharmacologically investigated. Due to the difficult collection of the mass-limited samples of REPs, studies on the secondary metabolites of REPs-associated endophytes would provide a promising alternative potential solution. This presentation details the achievements that related to a series of "Phytochemical and biological studies on rare and endangered plants endemic to China".

Keywords : bioactive naturally-occurring compounds, rare and endangered plants (REPs), plant endophytes, drug discovery

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