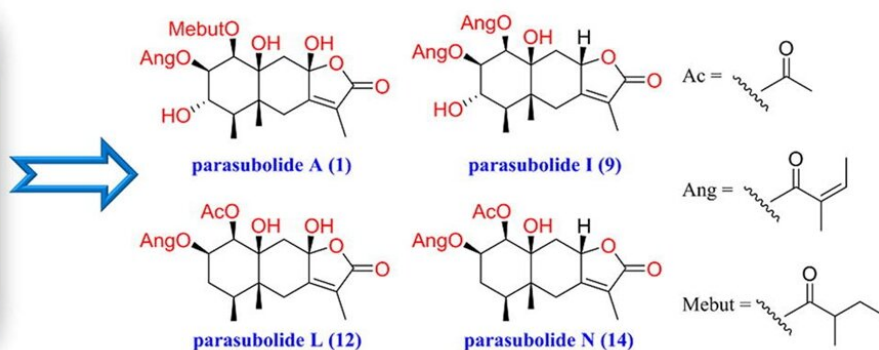


Novel eremophilane sesquiterpenoids with immunosuppressive activity isolated from *Parasenecio albus*

October 22 2021, by Zhang Nannan



Parasenecio albus



Eremophilane sesquiterpenoids from the whole plant of *Parasenecio albus* with immunosuppressive activity. Credit: Zhou Ming.

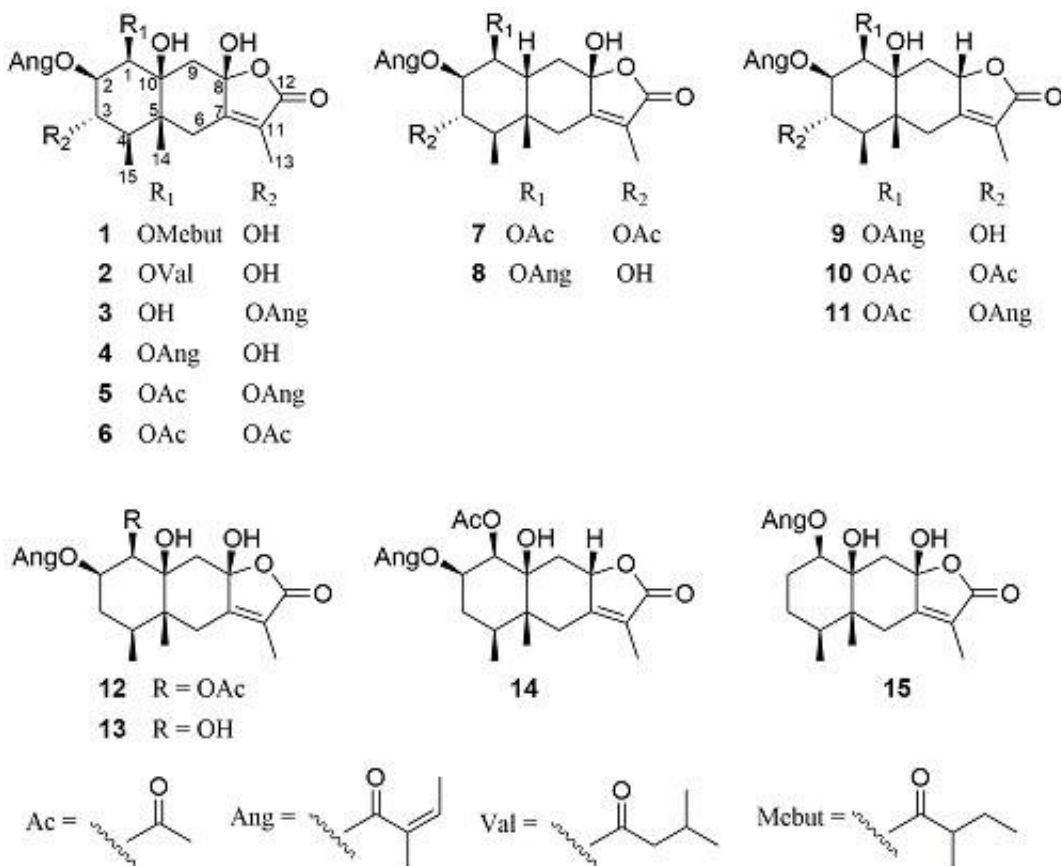
Plants of the genus *Parasenecio* have long been used in traditional Chinese medicine for invigorating the circulation of blood, relieving rheumatic ache, and for the treatment of injuries from falls. Previous phytochemical investigations on *Parasenecio* species demonstrate that sesquiterpenes, especially the eremophilanes, are their characteristic components. *Parasenecio albus* (*P. albus*), mainly distributed in the southwest of China, has been used as a folk medicine for heat-clearing and detoxifying therapy.

To obtain structurally interesting ingredients with bioactivities for drug discovery, researches from the Wuhan Botanical Garden of the Chinese Academy of Sciences and Huazhong University of Science and Technology explored the chemical constituents of the *P. albus* from Xinning County in Hunan province, China.

As a result, 15 undescribed highly oxygenated eremophilane sesquiterpenoids, parasubolides A-O (1-15) were characterized from the whole plant of *P. albus*. Compounds 1-6, and 9-14 represented the first class of 1,2,10-trioxygenated eremophilane lactones.

Taking the traditional medicinal application of *P. albus* and the bioactivities of reported eremophilane sesquiterpenes into account, the immunosuppressive activities of selected isolates were screened.

The researchers found that compounds 4, 5, and 12 exhibited moderate inhibition against LPS-induced B-cell proliferation with IC₅₀ values of 23.1, 33.8, and 26.6 μ M, respectively, verifying eremophilane sesquiterpenoids to be a potential resource of the immunosuppressant.



Structures of compounds parasubolides A-O (1-15). Credit: Zhou Ming.

This study develops the chemical diversity of *Parasenecio*, and extends the economic value of *P. albus* as a natural source of the immunosuppressive agents.

Results were published in *Bioorganic Chemistry*.

More information: Ming Zhou et al, Eremophilane sesquiterpenoids from the whole plant of *Parasenecio albus* with immunosuppressive activity, *Bioorganic Chemistry* (2021). [DOI: 10.1016/j.bioorg.2021.105247](https://doi.org/10.1016/j.bioorg.2021.105247)

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