

NEW FINDINGS OF DOCTORAL DISSERTATION

Name of Doctoral candidate: Nguyen Thi Hong Anh

Dissertation title: “Study on botanical properties, chemical constituents and anti-inflammatory activity of *Balanophora laxiflora* Hemsl.”

Speciality: Medicinal Materials - Traditional Pharmacy

Code of speciality: 9720206

Name of academic advisors:

1. Assoc. Prof. Dr. Do Thi Ha
2. Assoc. Prof. Dr. Nguyen Thuy Duong

Name of academic institute: National Institute of Medicinal Materials

Summary of new findings of the dissertation:

1. Botany

The thesis is the first document to describe in detail the morphology, micro-anatomy of stems and leaves, microscopic characteristics of arial-part powder of *Balanophora laxiflora* Hemsl.

2. Chemical constituents

Structure of 27 compounds isolated from *Balanophora laxiflora* Hemsl. were identified, in which,

- 5 new compounds including 3 lignans named ((*8S,8'S*)-secoisolariciresinol-9'-*O*- β -D-glucopyranosid, balanophorosid B, balanophoron), a phenyl propanoid (balanophoroside A) and an iridoid (balanolaxin)

- 10 compounds were isolated from genus *Balanophora* for the first time: salicifoliol, (*8S,7'R,8'S*)-isolariciresinol 9-*O*- β -D-glucopyranosid, *Trans-p*-coumaryl aldehyd, 6-*O*-galloyl-1-*O*-*E*-caffeoyl- β -D-glucopyranose, deacetyl asperulosidic acid, (*21\beta*)-22-hydroxyhopan-3-on, (*21\alpha*)-22-hydroxyhopan-3-on, *p*-hydroxybenzaldehyd, piceol (p-hydroxy acetophenon) and 1-*O*-(3-methylbutyl)-6-*O*- β -D-xylopyranosyl- (1 \rightarrow 6)- β -D-glucopyranose

- 4 compounds were isolated from *Balanophora laxiflora* Hemsl. for the first time: (8*R*,8'*R*)-secoisolariciresinol-4-*O*- β -D-glucopyranosid, (8*R*,7'*S*,8'*R*)-lariciresinol-4'-*O*- β -D-glucopyranosid, coniferyl aldehyd β -D-glucopyranosid and 4-*O*-galloyl-1-*O*-*E*-caffeoyl- β -D-glucopyranose.

Anti-inflammatory activity:

- Anti-inflammatory effect of *Balanophora laxiflora* Hemsl. were published for the first time.
- The thesis is the first publication on:
 - + Discovering that the compound was (21 α)-22-hydroxyhopan-3-on, isolated from the aerial part of *Balanophora laxiflora*, have significantly anti-inflammation and its mechanism.
 - + The anti-inflammatory effect *in vivo* of ethanol extract, ethylacetat fraction and compound (21 α)-22-hydroxyhopan-3-on of the aerial part of *Balanophora laxiflora* on the carrageenan-induced paw edema model and granule ulcer by amiant-induced.
 - + The antioxidant effect *in vitro* of ethanol extract, ethylacetat fraction and compound (21 α)-22-hydroxyhopan-3-on of the aerial part of *Balanophora laxiflora* on DPPH and superoxid.

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ACADEMIC ADVISORS

**DOCTORAL
CANDIDATE**

Assoc. Prof. Dr.
Do Thi Ha

Assoc. Prof. Dr.
Nguyen Thuy Duong

Nguyen Thi Hong Anh

