NEW FINDINGS OF DOCTORAL DISSERTATION

Name of Doctoral candidate: Nguyen Trung Tuong

Dissertation title: "Botanical properties, phytochemistry and biological activity studies on *Phaeanthus vietnamensis* Ban (Annonaceae)"

Speciality: Medicinal Materials - Traditional Pharmacy **Code specciality:** 9720206

Name of academic advisors:

1. Prof. Dr. Pham Thanh Ky
2. Dr. Nguyen Xuan Nhiem

Name of academic institute: National Institute of Medicinal Materials

Summary of new findings of the dissertation:

1. Botany

- Scientific name of the sample which collected in Hoa Nhon Ward, Hoa Vang District, Da Nang City was identified as *Phaeanthus vietnamensis* Ban (Annonaceae).

- Botanical properties, anatomical analysis of *P. vietnamensis* Ban were performed.

2. Chemical constituents

Structure of 15 compounds isolated from *P. vietnamensis* Ban were identified, including:

+ 3 new compounds: (7*S*,8*R*,8'*R*)-3,5,3′,5'-tetramethoxy-4,4',7-trihydroxy-9,9'-epoxylignan, 8α-hydroxyoplop-11(12)-en-14-on, and (1*R*,2*S*,4*S*)-2-*E*-cinnamoyloxy-4-acetyl-1-methylcyclohexan-1-ol.
+ 2 new compounds were isolated from *P. vietnamensis* Ban for the first time: thalifolin and moupinamid.
+ 8 compounds were isolated from genus *Phaeanthus* for the first time: 8*R*,8′*R*-bishydrosyringenin, (+)-5,5'-dimethoxylariciresinol, spathulenol, 1αH,5βH-aromandendrane-4β,10α-diol, 1αH,5βH-aromandendrane-4α,10α-diol, 1βH,5βH-aromandendrane-4α,10β-diol, 3α,4β-dihydroxybisabola-1,10-dien, and nerolidol.

3. Toxicity and Biological activities:

- Acute toxicity and subchronic toxicity of leaves and twigs extracts of *P. vietnamensis* Ban were published for the first time.

- The leaves and twigs extracts were indicated to have *in vitro* acute anti-inflammatory activity.

- The leaves and twigs extracts both showed *in vitro* chronic anti-inflammatory activity.

- The leaves and twigs extracts both showed *in vitro* analgesic activity.

- Spathulenol showed cytotoxicity activity in Jurkat, HepG-2, and MCF-7 cells with the IC_{50} values of 42.00, 44.64, 53.88 μM, respectively.

- Spathulenol showed the strong inhibitory activity on NO production with the IC_{50} values of 15.7 ± 1.2 μM. 8*R*,8′*R*-bishydrosyringenin, 1*α*H,5*β*H-aromandendrane-4*α*,10*α*-diol, and 1*β*H,5*β*H-aromandendrane-4*α*,10*β*-diol significantly inhibited inflammatory NO production with IC_{50} values ranging from 22.6 to 25.3 μM.

Hanoi, Feb 2019

ACADEMIC ADVISORS **DOCTORAL CANDIDATE**

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