NEW FINDINGS OF DOCTORAL DISSERTATION

Name of Doctoral candidate: Ngo Sy Thinh

Dissertation title: "Study on botanical properties, chemical constituents and biological activities of *Fissistigma pallens* (Fin. & Gagnep.) Merr., Annonaceae"

Speciality: Medicinal Materials - Traditional Pharmacy

Code of specciality: 9720206

Name of academic advisors:

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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 *Fissistigma pallens* (Fin. & Gagnep.) Merr.), Annonaceae.

2. Chemical constituents

Twenty-three compounds have been isolated from *Fissistigma pallens* (Fin. & Gagnep.) Merr. and their chemical structures have been determined by HR-ESI-MS, 1D-, and 2D-NMR spectra.

- Of the isolates, six sesquiterpene glucosides (fissispallins A-F) and three flavonol glycosides (fissflavosides A-C) were new compounds.

- Twelve compounds were isolated from *Fissistigma* Griff. for the first time: alismol; 4*β*,11-dihydroxyguaiane-6,10-dien; alismoxide; 10-*O*-methyl-alismoxide, 1*α*H,5*β*H-aromandendrane-4*β*,10*α*-diol, 15-hydroxy-*α*-cadinol, kaempferol 3-rutinoside, rutin, kaempferol 3-*O*-*α*-L-rhamnopyranosyl (1→6)-*β*-D-galactopyranoside, isorhamnetin 3-robinobioside, kaempferol 3-*O*-[α-L-

rhamnopyranosyl-(1→2)-*β*-D-galactopyranoside, rhamnetin 3-*O*-*α*-L-rhamnopyranosyl-(1→2)-*β*-D-glucopyranoside.

3. Biological activities:

The thesis is the first publication on:

- The cytotoxic activity of compounds fissispallin A-F and fissispallin.

- The antioxidant activity of compounds fissflavosid A-C**,** compound rhamnetin 3-*O*-*α*-L-rhamnopyranosyl-(1→2)-*β*-D-glucopyranoside was reported antioxidant activity for the first time, compounds kaempferol 3-rutinoside**,** kaempferol 3-*O*-*α*-L-rhamnopyranosyl (1→6)-*β*-D-galactopyranoside, isorhamnetin 3-robinobioside, kaempferol 3-*O*-[α-L-rhamnopyranosyl-(1→2)-*β*-D-galactopyranoside were evaluated antioxidant activity using ORAC method for the first time. Compounds fissflavosid A-C**,** kaempferol 3-rutinoside, rutin, kaempferol 3-*O*-*α*-L-rhamnopyranosyl (1→6)-*β*-D-galactopyranoside, isorhamnetin 3-robinobioside, kaempferol 3-*O*-[α-L-rhamnopyranosyl-(1→2)-*β*-D-galactopyranoside, rhamnetin 3-*O*-*α*-L-rhamnopyranosyl-(1→2)-*β*-D-glucopyranoside showed the reducing capacity by measuring the concentration of Cu (I) ions reduced from Cu (II) ions

- The inflammatory acitivity of fissispallins A-D have been evaluated by their inhibition of NO production in lipopolysaccharide (LPS)-activated murine macrophage RAW 264.7 cells and anti-inflammatory cytokines (TNF-*α*, IL-6, IL-10).

Hanoi, February, 2023

ACADEMIC ADVISORS **DOCTORAL CANDIDATE**

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