B U L G A R I A N A C A D E M Y O F S C I E N C E S
International Scientific Cooperation

Форма **B1**	Country: **Vietnam**	Partner of BAS: Vietnamese Academy of Sciences and Technology

Reg.[1]: (попълва се от БАН-ЦУ)

JOINT RESEARCH PROJECT

Title:
Discovery of bioactive compounds from Vietnamese propolis

Research partners:

Institute of BAS:	**Partner institute:**
Institute of Organic Chemistry with Centre of Phytochemistry, Bulgarian Acade,y of Sciences Postal code and address: Acad G. Bonchev strl. Bl. 9, 1113 Sofia, Bulgaria Director: Prof. Petko Ivanov, DSc	Institute of Marine Biochemistry, Vietnam Academy of Science & Technology, Postal code and address: 18-Hoang Quoc Viet, Caugiay, 04 Hanoi, Vietnam Director: Prof. Acad. Chau Van Minh.
Project coordinator: Prof. Vassya Bankova, DSc, corresponding member of BAS	**Project coordinator:** Prof. Le Nguyen Thanh, PhD
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Beginning: april 2017	**Duration: 2 years**

SUMMARY

Present state of knowledge in the field, significance and objectives of the joint research:

Propolis (bee glue) is a bee product widely used in traditional medicine for treatment of different diseases. Recently, it finds also application in a number of commercial products such as food additives, phyto-cosmetics and health foods. It is well known that bees make use of propolis as a general defence of the colony against infections, its antimicrobial and antioxidant properties have been proved beyond doubt. In different geographic and climatic zones honeybees collect propolis from different plants; nevertheless, they always find such source plants which can provide propolis with high biological activity. For this reason, the potential of propolis as a source of new biologically active compounds is significant. The diverse botanical sources of propolis depend on the local flora and this fact results in high chemical diversity and in the need of propolis research in different regions of the world. Vietnamese propolis has not yet been studies with respect to its chemical composition, plant sources and biological properties.

The objective of the proposed project is the identification and structure elucidation of compounds possessing valuable biologically activity from Vietnamese propolis. The chemical profiles, antimicrobial and antioxidant activity of propolis from different regions in Vietnam will be studied. The most active samples will be selected for further studies. They will be fractionated and the fractions again tested for their antimicrobial and antioxidant activity. This process will go on till the isolation of individual active constituents. The antibacterial and antifungal activity will be studied by colleagues at the Institute of Microbiology, BAS. For antioxidant tests, spectrophotometric methods will be applied, inc. the DPPH radical scavenging assay.

The results obtained will give new knowledge on the chemical composition of propolis in Southeast Asia and will be the first data on Vietnamese propolis. The results will be published in international impact-factor journals and reported at international conferences. The results could be used in cosmetic, pharmaceutical and food industries and in beekeeping.

Keywords (up to 4):	**Propolis, antimicrobial activity, antioxidant activity**

Background of cooperation and envisaged results and benefit:

The cooperation is based on the similar profiles of the working groups in both institutions in the filed of phytochemistry. The Bulgarian participants have longstanding experience in propolis research: chemical profiling, identification and structure elucidation of individual constituents of propolis from different regions of the world. The Vietnamese participants also have rich experience in phytochemical studies of Vietnamese medicinal plants and identification of their bioactive constituents.

It is important to note that till now, there are no data whatsoever on the chemical composition and biological activity of Vietnamese propolis. Taking into account the growing scientific and commercial interest in propolis, the mutual benefit of the project results, leading to new knowledge of this valuable natural resource, is obvious.

Relation to other projects (partners, titles, duration, and funding):

Research plan for the first year:

1. Extraction of propolis samples from different locations in Vietnam and chemical profiling of the extracts by gas chromatography-mass spectrometry (GC-MS)
2. Preliminary screening of the extracts for antimicrobial and antioxidant activity.
3. Selection of the most active samples for further studies in order to identify major active constituents.

Fractionation of the selected samples and determining of the activity of the fractions.

Preliminary research plan for the second year:

1. Chemical profiling of the fractions by GC-MS and NMR spectroscopy.
2. Isolation and structure characterization of individual compounds with antimicrobial and

antioxidant activity from the active fractions.

3. Determining the biological activity of pure compounds.

Publication of the results in scientific journals

Scientific staff involved in the project:

From the Bulgarian side:	**From the partner side:**
Prof. Vassya Bankova, DSc Assoc. Prof. Milena Popova, PhD Assist. Prof. Boryana Trusheva, PhD Kristina Georgieva, BSc Prof. Hristo Najdenski, DSc, corresponding member of BAS – Institute of Microbiology, BAS	Prof. Dr. Nguyen Van Hung, Dr. Nguyen Thi Minh Hang, MS. Tran Huu Giap BS. Nguyen Thi Tu Oanh BS. Ha Thi Thoa BS. Vu Thi Kim Oanh

Annexes:

SIGNATURES

On behalf of BAS:	**On behalf of**
Project coordinator:	Project coordinator:
Director:	Director:
Signed in:	Signed in:
Date:	Date:

BLK-102X.DOC

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32-37-12/07.03.2017г.

ДО
ИОХЦФ

Относно: **Нови съвместни проекти в рамките на споразумението между БАН и Виетнамската академия на науките и технологиите (ВАНТ) за периода 2017-2018 г.**

Уважаеми проф. Иванов,

Уведомяваме Ви, че с Решение № 7 от 21.02.2017 г. Ръководството на БАН **одобри** полученото с писмо № 48/25.01.2017 г. от Вашия институт предложение за нов съвместен проект в рамките на Споразумението между БАН и ВАНТ за периода 2017-2018 г. на тема „Търсене на нови биологично активни вещества във виетнамски прополис", с ръководител **чл.-кор. проф. дн Вася Банкова.**

Напомняме на ръководителя на проекта, че квотата за посещения е 21 дни годишно за всяка страна. Одобреното финансиране на проекта е в размер на 8000 лв. на година. Съгласно сключеното споразумение се признават само разходи за пътни (за българските учени), за дневни и квартирни (за чуждестранните учени), както и за разходи за материали, химикали и консумативи, свързани с научната работа по проекта.

Началник отдел МДОПП:

Венета Николова

Изготвил: Габриела Чупренска, мл. експерт, отдел „МДОПП"

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ДО
ДИРЕКТОРА НА ИНСТИТУТА ПО
ОРГАНИЧНА ХИМИЯ С ЦЕНТЪР
ПО ФИТОХИМИЯ

Уведомяваме Ви, че през месец декември, от БАН – Администрация, от § 61-09 „Вътрешни трансфери в системата на първостепенния разпоредител (+/-)", Ви е предоставен трансфер в размер на: **2 330,00 лв.** - 1 185,00 лв. и 1 145,00 лв. за ЕБР и **8 000,00 лв.** по проект с Институт по морска биология на Виетнамска академия за наука и технологии (VAST). Сумата следва да бъде отчетена при Вас по същия параграф със знак „+".

ГЛ. СЧЕТОВОДИТЕЛ:
Росица Деянова

ПРЕДСЕДАТЕЛ :
Акад. Юлиан Ревалски