



Isolated Triterpenes from Stingless Bee *Lisotrigona furva* Propolis in Vietnam

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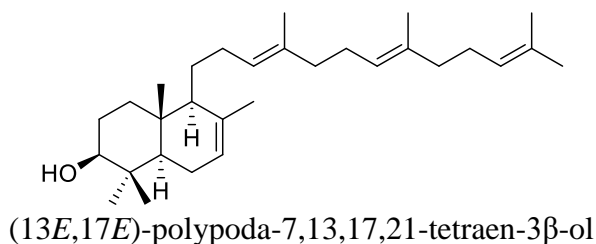
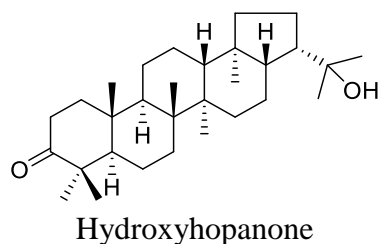
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Received/Geliş Tarihi: 08/10/2018, Accepted/ Kabul Tarihi: 19/10/2018

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Abstract

Stingless bees of the genus *Lisotrigona* are uncommon species found in India and South East Asian countries. Several *Lisotrigona* species including *L. cacciae*, *L. carpenteri* and *L. furva* from Vietnam have been described. There has been no information on the chemical constituents and bioactivity of *Lisotrigona* stingless bee propolis in Vietnam. Our goal of this work is to investigate the chemical constituents of the stingless bee *Lisotrigona furva* propolis collected in Binh Dinh province, Vietnam. Using combined chromatographic methods, several triterpenes including mangiferolic acid (**1**), occotilonones I (**2**) and II (**3**), dipterocarpol (**4**), hydroxyhopanone (**5**) and (13*E*,17*E*)-polypoda-7,13,17,21-tetraen-3 β -ol (**6**) were isolated from the ethyl acetate extract of *Lisotrigona furva* propolis. The chemical structures of isolated compounds were identified by MS, NMR spectral analysis. Compound **5** and **6** were isolated for the first time from stingless bee propolis.



Acknowledgements: This research is funded by Vietnam Academy of Science and Technology under grant number VAST.HTQT.BULGARIA.02/17-18.

References:

1. Nguyen, H. X., Nguyen, M. T., Nguyen, N. T., & Awale, S. (2017). Chemical Constituents of Propolis from Vietnamese *Trigona minor* and Their Antiausterity Activity against the PANC-1 Human Pancreatic Cancer Cell Line. *Journal of natural products*, 80(8), 2345-2352.
2. Sanpa S., Popova M., Bankova V., Tunkasiri T., Eitssayeam S., Chantawannakul P. (2015). Antibacterial compounds from propolis of *Tetragonula laeviceps* and *Tetrigona melanoleuca* (Hymenoptera: Apidae) from Thailand. *PLoS One*, 10(5), e0126886.
3. Yoon, N. Y., Min, B. S., Lee, H. K., Park, J. C., & Choi, J. S. (2005). A Potent Anti-complementary acylated sterol glucoside from *Orostachys japonicus*. *Archives of pharmacal research*, 28(8), 892.