Science, Technology, Research and Innovation for Development (STRIDE)

Chemical Profi ling and Characterization of Pharmaceutical Biomarkers of Iloilo Honey

GRANTEE: University of San Agustin

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INDUSTRY PARTNER: Maridan Industries, Inc.

GRANT PERIOD: December 1, 2016 to November 30, 2017

GRANT AMOUNT: Php 4,700,000 (approximately USD100,000)

Profiling Iloilo honey for industry applications

Visit to sampling site in Teb-teb, Shelan, La Trinidad, Benguet

This research aims to address the problem of the inferior and non-standardized quality of Iloilo honey. This locally produced honey has the potential as raw material for food, cosmetics, and pharmaceutical industries. However, its chemical profile and biological properties have not been thoroughly described leading to its perceived inferiority against imported honey from Australia and New Zealand, currently sold in health supplement shops as an alternative medicine (e.g., for wound healing and anti-inflammation) and nutraceutical.

The overall arching goal of the project is to increase the marketability of honey from Iloilo by providing a comprehensive description of its chemical profile and biological properties as quality measure for food and pharmaceutical standards. These will be achieved by studying local honey at the molecular level to identify its chemical properties or "chemical fingerprint", and bioactive components that can serve as biomarkers, which are critical in resolving concerns associated with quality and standardization. In support of this undertaking, the research team shall focus on the establishment of chemical profiles and pharmaceutical biomarkers of Iloilo local honey that will serve as parameters for quality and efficacy for pharmaceutical application using high performance

Concentration of honey samples in vacuo by rotary evaporation at 40^{O}C

liquid chromatography-diode array detection (HPLC-DAD) and mass spectrometry analyses. The chemical profile and pharmaceutical biomarkers of the Iloilo honey shall be compared to the honey from Palawan, Benguet, Laguna, Bukidnon and Davao. Likewise, evidence-based safety assurance that local honey is free from pesticides, metal contamination and microbial infection shall be established to ensure compliance to food safety standards.

Data obtained from the study will provide definitive and quantitative values on quality safety and efficacy of Iloilo honey products, as there is still no official international or local standards for raw honey. In addition, information on qualitative and quantitative dissimilarities in the chemical profile and pharmaceutical biomarkers of honey belonging to different floral sources and geographical origins will provide scientific insights into the chemical diversity of Philippine honey.