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**Analysis of Human Milk Oligosaccharides from Filipino breastmilk reveals secretor status variation**Gladys Cherisse J. Completo<sup>1</sup>, Anthony Salvador B. Albaladejo<sup>2</sup>, Ruel C. Nacario<sup>1</sup>, Baby Richard R. Navarro<sup>3</sup>, Carlito B. Lebrilla<sup>4</sup><sup>1</sup>Institute of Chemistry, University of the Philippines Los Baños, Laguna 4031<sup>2</sup>Department of Chemistry, University of the Philippines Visayas, Miagao, Iloilo 5023<sup>3</sup>Institute of Food Science and Technology, University of the Philippines Los Baños, Laguna 4031<sup>4</sup>Department of Chemistry, and Biochemistry (School of Medicine), University of California, Davis, CA 95616

Human Milk Oligosaccharides (HMOs), although lacking in nutritional value and considered indigestible to the infant, serve many infant-health-beneficial functions, such as nourishment of gut bacteria, inhibition of pathogenic infection, and aiding in brain development. Their expression depends on a series of competing Glycosyltransferases driven by the secretor gene and Lewis blood group. In this study, aiming to determine possible correlation between HMOs and secretor status, a rapid-throughput 96-wellplate method, entailing lipid separation by centrifugation, protein precipitation using Ethanol, Alditol sugar reduction using Sodium Borohydride, and solid phase extraction purification using porous graphitized carbon, was used to analyze HMOs from Filipino breastmilk. A Nano-HPLC Chip/TOF-MS coupled with the use of Agilent MassHunter programs and an in-house library was used to analyze purified HMOs. Five HMO secretor markers were also used to quantify the level of  $\alpha(12)$  fucosylation. From the results, 81% of the mothers sampled were determined to be secretors and 19% to be non-secretors; Moreover, the secretor mothers were found to produce milk richer in Oligosaccharides than the non-secretor mothers. However, variations in Oligosaccharide type, which could be linked to variations in secretor status, were observed in both. Thus, this study provided a rapid method for determining phenotypic secretor status using HMO markers from Filipino breastmilk samples.

**Biography**

Gladys C.J. Completo is a Professor at the University of the Philippines Los Baños. Her field of interests includes Carbohydrate synthesis, Glycomics and Glucoproteomics of milk Oligosaccharides.

gjcompleto@up.edu.ph

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