

Implementing post-genomic personalized medicine: The rise of glycan biomarkers

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An in-depth look at the science of glycobiology and glycan diagnostics, and their promise in personalized medicine in the current post-genomic era are featured in a special issue of *OMICS: A Journal of Integrative Biology*.

This special issue was co-edited by Wei Wang, MD, Ph.D., Edith Cowan University (Joondalup, Australia) and Capital Medical University (Beijing, China), and Vural Özdemir, MD, Ph.D., Editor-in-Chief of *OMICS: A Journal of Integrative Biology*. Dr. Wang and a team of researchers from Australia, China, and Croatia contributed an article entitled "Type 2 Diabetes Mellitus is Associated with the Immunoglobulin G N-Glycome through Putative Proinflammatory Mechanisms in an Australian Population.") The team analyzed the N-glycan patterns of immunoglobulin G (IgG) in individuals with type 2 diabetes (T2D) and found novel associations between the IgG N-glycome, T2D, and clinical risk factors related to proinflammatory mechanisms. These IgG N-glycomic alterations offer promise as future biomarkers for T2D diagnosis or monitoring of progression to cardiovascular disease or renal failure.

A review article by Tanja Kunej, Ph.D. University of Ljubljana (Domzale, Slovenia) is entitled "Rise of Systems Glycobiology and Personalized Glycomedicine: Why and How to Integrate Glycomics with Multiomics Science?" Dr. Kunej proposes that for glycomics to make a greater, systems-scale contribution to biology and [medicine](#), it needs to transition from a single omics science to multiomics technology platforms. The article presents examples of glycomics in association with other omics fields, including genomics, transcriptomics, proteomics, metabolomics, and epigenomics, and discusses current knowledge gaps and suggests future research directions.

Vural Özdemir, MD, Ph.D., Editor-in-Chief of *OMICS: A Journal of Integrative Biology* states: "Carbohydrates and [glycans](#) matter for personalized medicine. This OMICS special issue on glycomics and personalized glycomedicine signals the rise of glyco-theranostics as a new specialty in diagnostic medicine and systems science. It connects the dots between some of the most critical issues in biomarkers, post-genomic personalized medicine, and emerging technology governance to

move systems science into clinical practice. Any reader interested in diagnostics in [health care](#) should benefit from reading the new OMICS issue curated with a systems approach to glycobiology and personalized/precision medicine."

More information: Wei Wang et al. Special Issue: Glycomics and Personalized Glycomedicine, *OMICS: A Journal of Integrative Biology* (2019). [DOI: 10.1089/omi.2019.0177](https://doi.org/10.1089/omi.2019.0177)

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