Special Issue

New Insights into Protein Glycosylation

Message from the Guest Editor

To understand life in an integrated manner, it is essential to understand protein glycosylation: a growing and high-impact field exploring the structure and function of the carbohydrates that clothe most living cells. In this Special Issue, we hope to take an interdisciplinary approach, particularly highlighting work in chemistry and biology, to summarize the current status and discuss the future development and prospects of protein glycosylation in terms of its functions and analytical methods. Protein glycosylation in extracellular or membrane proteins includes *N*-linked glycosylation and mucin-type *O*-linked glycosylation starting with GalNAc in addition to *O*-Fuc, *O*-Gal, *O*-Glc, *O*-GlcNAc, *O*-Man and *O*-Xyl, and *C*-Man. There are also a variety of nucleocytoplasmic proteins modified with *O*-GlcNAc by OGT. Their functions are involved in diverse biological processes such as cellular signaling, immunity, neural function, pathological conditions such as cancer, and viral infections, including COVID-19.

Guest Editor

Prof. Dr. Hideyuki Takeuchi
School of Pharmaceutical Sciences, University of Shizuoka, Shizuoka 422-8526, Japan

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Molecules
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
molecules@mdpi.com

mdpi.com/journal/molecules

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Message from the Editor-in-Chief

As the premier open access journal dedicated to molecular chemistry, now in its 30th year of publication, the papers published in *Molecules* span from classical synthetic methodology to natural product isolation and characterization, as well as physicochemical studies and the applications of these molecules as pharmaceuticals, catalysts, and novel materials. Pushing the boundaries of the discipline, we invite papers on all major fields of molecular chemistry and multidisciplinary topics bridging chemistry with biology, physics, and materials science, as well as timely reviews and topical issues on cutting-edge fields in all of these areas.

Editor-in-Chief

Prof. Dr. Thomas J. Schmidt
Institute of Pharmaceutical Biology and Phytochemistry, University of Münster, Corrensstrasse 48, D-48149 Münster, Germany

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