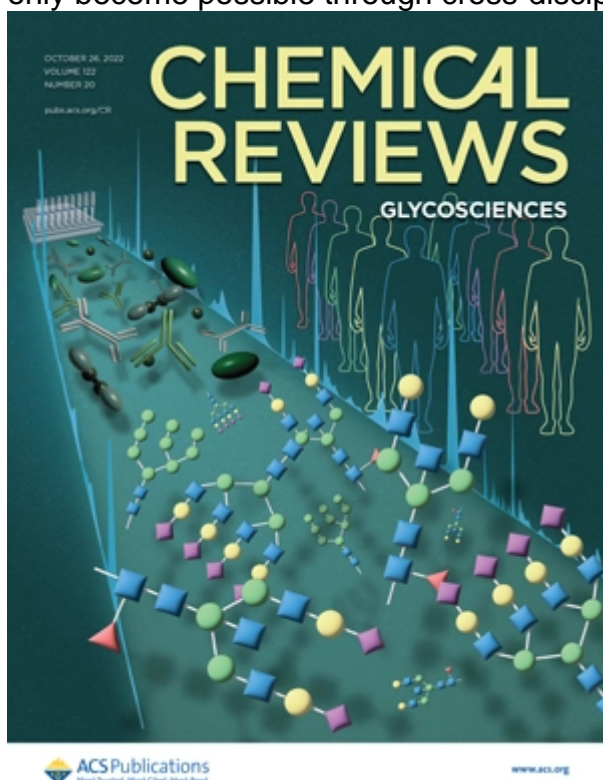




Chemical Reviews: Glycosciences Issue.

Description

The Chemical Reviews thematic issue is called “Glycosciences” to illustrate the broader impact of carbohydrate chemistry on other sciences, opening new frontier knowledge and technologies that have only become possible through cross-disciplinary collaborations.



These have led to exciting new discoveries, for example, in our understanding and treatment of microbial infections. Glycosylation is now understood as a fundamental process regulating intra- and intercellular processes. By analyzing the glycomes of cells and organisms, new insights and techniques are being developed for personalized healthcare and medicine. At the same time, carbohydrate chemistry has also benefitted from advances in other areas of science, and one of the most prominent interactions has been with computational scientists. The complexity of the

carbohydrate structure through its multiple combinatorial stereochemistries of monosaccharides and glycosidic linkages has always attracted a cadre of dedicated glycoscientists. Still, it has been lamented by the broader community as being too complicated. However, we are now in the age of machine learning and artificial intelligence, providing us with tools that can tackle complexity in biology and celebrate and recognize it as an essential aspect of Nature. This thematic issue reviews some specific examples

[**Introduction: Glycosciences**](#) , Sabine L. Flitsch, *Chemical Reviews* 2022, 122, 20, 15501-15502 (Editorial)

[**The Synthesis and Glycoside Formation of Polyfluorinated Carbohydrates**](#), Kler Huonnic and Bruno Linclau*, *Chemical Reviews* 2022, 122, 20, 15503-15602

[**Glycoconjugates: Synthesis, Functional Studies, and Therapeutic Developments**](#), Sachin S. Shivatare , Vidya S. Shivatare and Chi-Huey Wong*; *Chemical Reviews* 2022, 122, 20, 15603-15671

[**Synthetic Glycans to Improve Current Glycoconjugate Vaccines and Fight Antimicrobial Resistance**](#) , Linda Del Bino Kitt Emilie Østerlid Dung-Yeh Wu Francesca Nonne Maria Rosaria Romao, Jeroen Codée, Roberto Adamo*, *Chemical Reviews* 2022, 122, 20, 15672-15716

[**The Astounding World of Glycans from Giant Viruses**](#), Immacolata Speciale, Anna Notaro, Chantal Abergel, Rosa Lanzetta, Todd L. Lowary, Antonio Molinaro, Michela Tonetti, James L. Van Etten and Cristina De Castro*, *Chemical Reviews* 2022,122, 20, 15717-15766

[**A Journey from Structure to Function of Bacterial Lipopolysaccharides**](#), Flaviana Di Lorenzo, Katarzyna A. Duda, Rosa Lanzetta, Alba Silipo, Cristina De Castro, and Antonio Molinaro*, *Chemical Reviews* 2022, 122, 20, 15767-1582

[**Demystifying the O-GlcNAc Code: A Systems View**](#) Junfeng Ma*, Chunyan Hou, and Ci Wu, *Chemical Reviews*, 2022, 122, 20, 15822-15864

[**High-Throughput Glycomic Methods**](#), Irena Trbojević-Akmačič, Guinevere S. M. Lageveen-Kammeijer, Bram Heijs, Tea Petrović , Helena Deriš, Manfred Wuhrer, and Gordan Lauc*, *Chemical Reviews* 2022, 122, 20, 15865-15913

[**Multifaceted Computational Modeling in Glycoscience**](#), Serge Perez*and Olga Makshakova, *Chemical Reviews*, 2022, 122, 20, 15914-1597

[**Glycoinformatics in the Artificial Intelligence Era**](#), Daniel Bojar* and Frederique Lisacek*, *Chemical Reviews*, 2022, 122, 20, 15971-1598

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