

Invited Lecture

57th Annual Convention of Chemists (ACC) - Indian Chemical Society (ICS) Recent Trends in Chemical Sciences (RTCS 2020)

Synthesis of Fondaparinux Pentasaccharide

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Professor

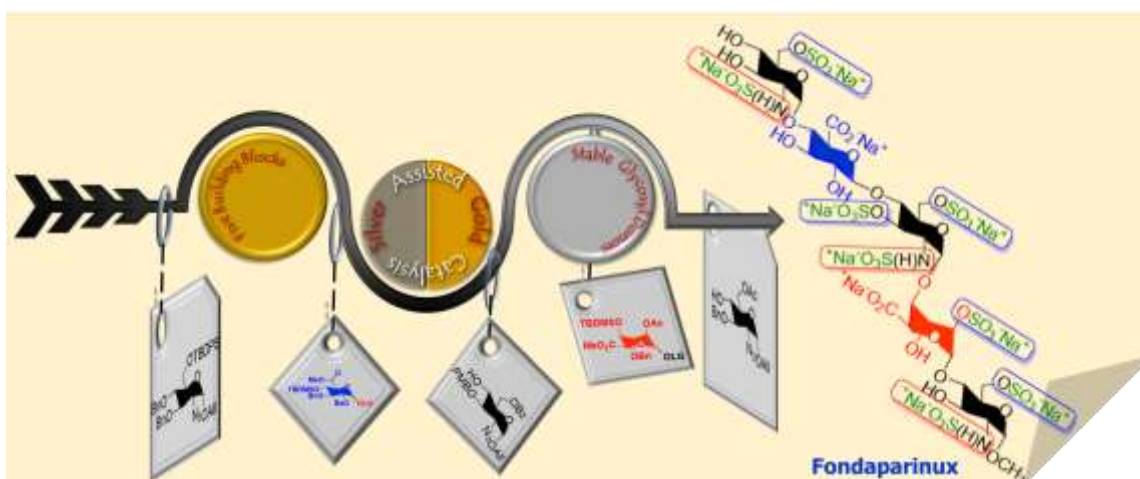
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Abstract:

Ubiquitously present oligosaccharides and glycoconjugates are challenging for the synthesis due to many hindrances such as poor reaction yields with traditional donors, poor atom economy, compromised diastereoselectivity, non-availability of the building blocks and lack of a universal glycosylation protocol. However, the demand for the oligosaccharides is increasing decade by decade and the field has a very high potential as they are involved in many cell-cell signalling and host of other events at intracellular and intercellular levels. This burgeoning field resulted in the pressure to synthesize this class of molecules in a faster manner. One of the key reactions that needs to be optimized for the synthesis of oligosaccharides is the glycosidation and over past the one century, many glycosyl donors are developed by many labs.

From our lab, we have discovered a novel glycosyl donor system that is faster, high yielding, catalytic and mild. In this presentation, an overview of our efforts to synthesize one of the therapeutically relevant pentasaccharide named as Fondaparinux (Arixtra®) will be presented.



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Bio-Sketch of Speaker

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Hotha graduated with M.Sc. from School of Chemistry - University of Hyderabad (1993) and subsequently with M. Tech in Biochemical Engineering from Institute of Technology, Banaras Hindu University, Varanasi (1995). Hotha earned his Ph.D. from Osmania University for the research work carried out in the Indian Institute of Chemical Technology, Hyderabad and National Chemical Laboratory, Pune (2001). He was a Charles H. Revson fellow in the Laboratory of Chemistry and Cell Biology at the Rockefeller University, USA (2001-03). Hotha moved to National Chemical Laboratory (2003-10) and subsequently joined IISER Pune as an Associate Professor – Chemistry (2010). Currently, Hotha is a Professor of Chemistry in IISER Pune (from 2016).

Hotha group is well known for the discovery and development of the gold-catalyzed glycosidations and their application to the syntheses of oligosaccharides.