



**DEPARTMENT OF CHEMISTRY
PONDICHERRY UNIVERSITY**

Invites you to the lecture on

**"Iminosugars as Glycosidase
Inhibitors and Immunomodulators:
Synthesis and Biological Study"**


By

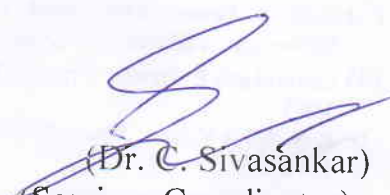
Prof. Dilip D. Dhavale
Department of Chemistry
University of Pune, Pune-411007, INDIA

16th Nov. 2015 (Monday)

Time: 3.30 pm

Venue: Department of Chemistry, PU


(Prof. K. Tharanikkarasu)
(HOD)


(Dr. C. Sivasankar)
(Seminar Coordinator)
Dr. C. SIVASANKAR
Associate Professor
Department of Chemistry
Pondicherry University
Puducherry - 605 014, India



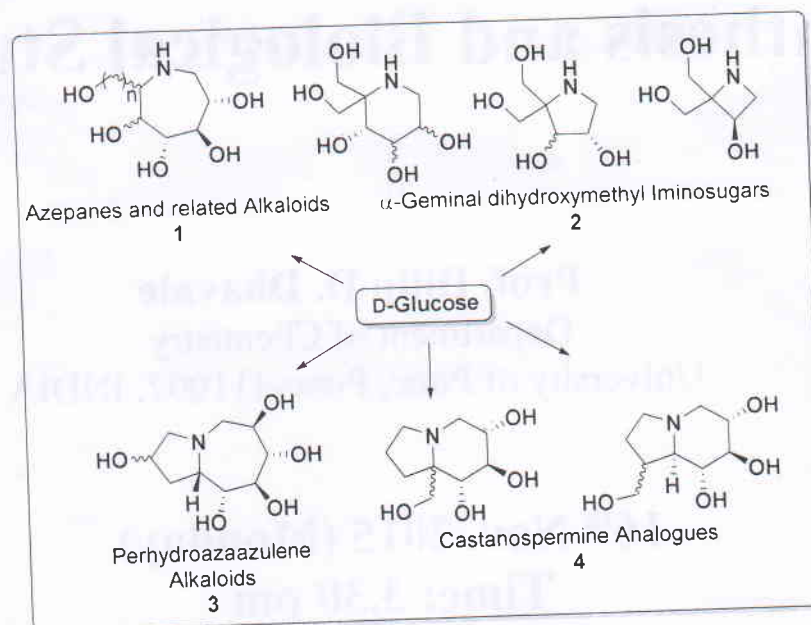
Iminosugars as Glycosidase Inhibitors and Immunomodulators: Synthesis and Biological Study

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Glycosidase is a class of enzymes that modify glycoconjugates by hydrolyzing glycosidic linkages—a process essential for normal cell growth, regulation and development. Any disorder in this process leads to genetic diseases such as diabetes, obesity and also viral infection including AIDS. In recent years, attention has been increasingly focused on the structure-activity relationship of iminosugars, particular in seven membered hydroxy-azepanes **1**, α -geminal dihydroxymethyl iminosugars **2**, perhydroazaazulene alkaloids **3** and indolizidine alkaloids such as castanospermine analogues **4**. Azepanes are also potentially useful as DNA minor groove binding ligands (MGBL). The development of new iminosugars thus opened a dynamic research field at the interface between glycobiology and synthetic organic chemistry. As a part of our continuing efforts in the synthetic carbohydrate chemistry, we have devised number of synthetic routes to iminosugars and studied these molecules for glycosidase inhibitory activities and immunomodulatory activity. Our recent results in this area will be presented.



- (1) Nitin J. Pawar, Vijay Singh Parihar, Ayesha Khan, Rakesh Joshi and Dilip D. Dhavale*, *Journal of Medicinal Chemistry*, **2015**, *58*, 7820-7832
- (2) Kishor S. Gavale, Shrawan R. Chavan, Ayesha Khan, Rakesh Joshi and Dilip D. Dhavale* *Organic and Biomolecular Chemistry*, **2015**, *13*, 6634-6646.
- (3) Nitin J. Pawar, Vijay Singh Parihar, Sanjay T. Chavan, Rakesh Joshi, Pranaya V. Jochi, Sushma G. Sabharwal, Vedavati G. Puranik and Dilip D. Dhavale*, *Journal of Organic Chemistry*, **2012**, *77*, 7873-7882.
- (4) Omprakash P. Bande, Vrushali H. Jadhav, Vedavati G. Puranik, Dilip D. Dhavale*; *Synlett*, **2009**, *12*, 1959-1963.
- (5) K. S. Ajish Kumar, Vinod D Chaudhari, and Dilip D. Dhavale*; *Organic and Biomolecular Chemistry*, **2008**, *1*, 703.

- (6) Vinod P. Vyavahare, Chaitali Chakraborty, Viswanath Maity, Subrata Chattopadhyay, Vedavati G. Puranik, and Dilip D. Dhavale*; *Journal of Medicinal Chemistry*, **2007**, *50*, 5519-5523.
- (7) K. S. Ajish Kumar, Vinod D. Chaudhari, Vedavati G. Puranik, Dilip D. Dhavale*; *European Journal of Organic Chemistry*, **2007**, 4895.
- (8) Omprakash P. Bande, Vrushali H. Jadhav, Vedavati G. Puranik, and Dilip D. Dhavale* *Tetrahedron: Asymmetry*, **2007**, *18*, 1176-1182.
- (9) Narayan S. Karanjule, Shankar D. Markad, Dilip D. Dhavale*, *J. Org. Chem.*, **2006**, *71*, 6273-6276
- (10) Shankar D. Markad, Narayan S. Karanjule, Tarun Sharma, Sushma G. Sabharwal, Dilip D. Dhavale*, *Organic and Biomolecular Chemistry*, **2006**, *4*, 2549-2555 and references cited therein.