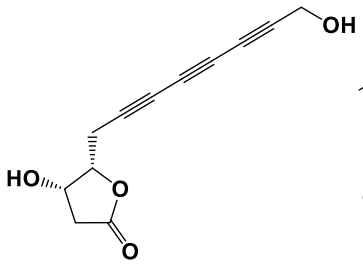
Total Synthesis of γ-Lactone Natural Products

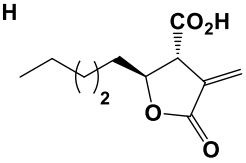
Rodney A. Fernandes
Department of Chemistry, IIT-Bombay, Powai, Mumbai 400076
Maharashtra, India
(E-mail: rfernand@chem.iitb.ac.in)

Abstract:

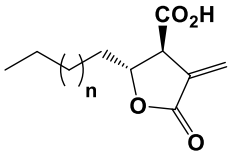
The total synthesis of selected γ-lactone natural products by short synthetic sequences will be presented in this lecture. The aim was to minimise the use of protecting groups and develop step-economic synthesis.[1] Our work on the total synthesis of 3,4-dihydrovernoniyne,[2] paraconic acids and guaianolides[3] will be presented.



3,4-dihydrovernonyne

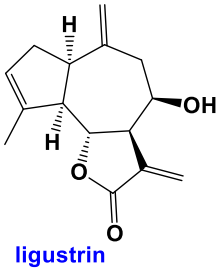


(-)-methylenolactocin

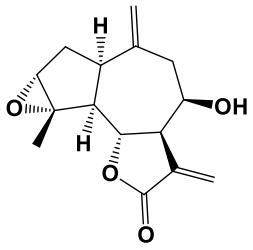


n = 8, (+)-nephrosterinic acid
n = 10, (+)-protolichesterinic acid
n = 5, C75

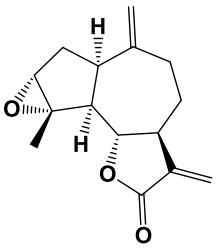
paraconic acids



ligustrin



8-hydroxy estafiatin



estafiatin

References:

1. *Protecting-Group-Free Organic Synthesis: Improving Economy and Efficiency*; R. A. Fernandes, Ed.; John Wiley & Sons: Hoboken, NJ, **2018**.

2. (a) Ramakrishna, G. V.; Fernandes, R. A. *J. Org. Chem.* **2019**, *84*, 14127. (b) Ramakrishna, G. V.; Fernandes, R. A. *Org. Lett.* **2019**, *21*, 5827.

3. Ramakrishna, G. V.; Fernandes, R. A. Unpublished results.

Bio-Sketch of Speaker

Name: Dr. Rodney A. Fernandes
Designation: Professor

Department of Chemistry
IIT-Bombay

Contact Number: 022-25767174/9969617544
e-Mail: rfernand@chem.iitb.ac.in
Homepage: http://ether.chem.iitb.ac.in/~rfernand/default.htm

Dr. Rodney A. Fernandes, Professor
1995 Bachelor's, Goa University, Goa
1997 Master's, Goa University, Goa
2003 Ph. D., Pune University/NCL Pune
2003 Postdoctoral Fellow, Tohoku University, Sendai Japan.
2004 AvH Fellow, Freiburg University, Germany
2006 Assistant Professor, UNAM Mexico City, Mexico
2007 Assistant Professor, IIT-Bombay
2011 Associate Professor, IIT Bombay
2015 Full Professor, IIT Bombay
2017-2018 Dean Academic and Dean Faculty Affairs, IIT Goa
Awards: INSA Young Scientist Medal Award 2004, AvH Fellow 2004-2006, Fellow of Maharashtra Academy of Sciences, 4th S.C. Bhathacharya Memorial Lecture Award 2017, Departmental Excellence in Teaching Award 2019-2020, IIT Bombay and Top 5% most cited author in RSC journals in 2020.