

International Conference on

Stereochemistry

August 18-19, 2016 Sao Paulo, Brazil

(2R,3R)-[2'',3'':6,7]-[5-(2-hydroxypropan-2-yl)-4,5-dihydrofurano]-5,7,4'-trihydroxy 2,3-dihydroflavon-3-ol, (2R,3R)-5,7,4'-tetrahydroxy-6-(2,3-dihydroxy-3-methylbutyl)-2,3-dihydroflavon-3-ol, two novel flavonoids, and other constituents of *Ficus thonningii* Blume (Moraceae)

Patrick Yves Ango

University of Yaoundé 1, Cameroon

A phytochemical study of *Ficus thonningii* has led to the isolation of two previously unreported compounds, (2R,3R)-[2'',3'':6,7]-[5-(2-hydroxypropan-2-yl)-4,5-dihydrofurano]-5,7,4'-trihydroxy-2,3-dihydroflavon-3-ol, (2R,3R)-5,7,4'-tetrahydroxy-6-(2,3-dihydroxy-3-methylbutyl)-2,3-dihydroflavon-3-ol together with sixteen known compounds: shuterin, naringenin, syringic acid, p-hydroxybenzoic acid, genistein, 5,7,3',4',5'-pentahydroxyflavanone, luteolin, methylparaben, aromadendrin, garbanzol, dihydroquercetin, 5,7,3'-trihydroxyflavanone, β -sitosterol, sitosterolglucoside, lupeol acetate, and taraxerol. Their structures were elucidated on the basis of spectroscopic data. The new compounds and extracts displayed potent antioxidant activity. The stereochemistry of asymmetric carbon of the new compounds was determined using CD experiment. In fact, the CD measurements of *thonningii* flavanonol A involving the underivatized dihydroflavanonol gave a positive Cotton effect in the 330 nm region and a negative Cotton effect at 276 nm, indicating a 2R absolute configuration and, also suggesting a 3R absolute configuration due to the coupling constant ($J=12$ Hz) between H-2 and H-3. Thus, *thonningii* flavanonol A was determined as (2R,3R)-[2'',3'':6,7]-[5-(2-hydroxypropan-2-yl)-4,5-dihydrofurano]-5,7,4'-trihydroxy-2,3-dihydroflavon-3-ol. The (2R, 3R) absolute configuration of *thonningii* flavanonol B was also deduced from the coupling constant between H-2 and H-3 ($J= 11.4$ Hz) and the CD curve with a positive Cotton effect in the region of 336 nm and a negative Cotton effect at 276 nm. The structure of *thonningii* flavanonol B was determined as (2R,3R)-5,7,4'-tetrahydroxy-6-(2,3-dihydroxy-3-methylbutyl)-2,3-dihydroflavon-3-ol, an unreported natural product.

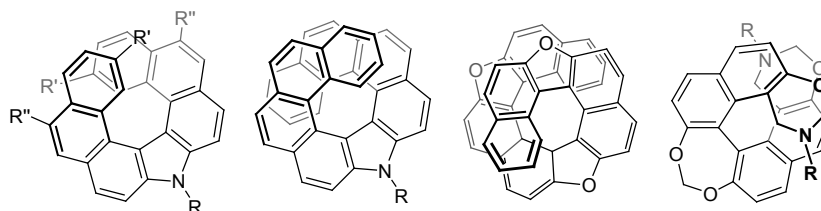
dradeliselim@gmail.com

Synthesis and study of novel helical and helicene-like compounds

Ashutosh V Bedekar

M S University of Baroda, India

Molecules possessing ortho-fused aromatic rings, acquire a unique shape in order to release the internal strain. This type of molecular arrangement acquires helical structure and shows stereoisomerism. The helical molecules have attracted much attention in recent years due to some unique properties associated with its structure. The efficient delocalization of π -electrons and non-planarity of the structure in the helicenes enable them to be stable to strong acids and high temperature. The applications of helical molecules cover a wide range in the fields of material science, asymmetric synthesis and catalysis, as molecular motor, in biology etc. A number of approaches have been developed for the synthesis of these screw shape molecules due to efforts required to overcome the inherent steric factors or steric crowding. In this presentation results of our efforts towards the synthesis and study of some helical molecules will be presented.



Synthesis of a number of helical and helicene-like molecules, investigation of their structural aspects, attempts for the separation of their isomers and study of their optical and thermal properties will be discussed. The molecules show high thermal stability and interesting optical properties.

avbedekar@yahoo.co.in