Clin Exp Pharmacol 2015, 5:4
http://dx.doi.org/10.4172/2161-1459.S1.008

OMICS International
conferenceseries.com

World Congress on

Pharmacology

July 20-22, 2015 Brisbane, Australia

Brazilian plants as potential sources of pharmaceuticals and other biologically active compounds

Iramaia Angelica Neri-Numa
University of Campinas, Brazil

Brazil has many biomes of which the most famous are the Amazon Forest, Cerrado and Atlantic Rain Forest. These diverse environments provide several conditions for the production of a wide variety and levels of secondary metabolites. Particularly, this country has a wide variety of native, wild and non-commercially cultivated fruits, which are excellent sources phytochemicals, such as polyphenolics, xanthones, carotenoids and saponins, allowing pharmacological applications such as antioxidant, anti-inflamatory, antimutagenic, anticarcinogenic and anti-tumor activities, which can be potential sources of nutraceutical and pharmaceutical components.

iramaianuma@gmail.com

Modulation of the stress molecule, β-D-glucopyranosyl cholesterol, by 3-O-methylation of the sugar

Dumitru Petru Iga
University of Bucharest, Romania

A new glycoside of cholesterol, 3-O-methyl β-D-glucopyranosyl cholesterol, was synthesized by Koenigs-Knorr glycosylation. D-Glucose was converted to 1, 2:5, 6-di-O-isopropylidene α-D-glucofuranose by reacting it with acetone in the presence of sulfuric acid and anhydrous copper sulfate. Reaction product was characterized per se spectroscopically, chemically and chromatographically, as well as in acetylated form, as 1, 2:5, 6-di-O-isopropylidene 3-O-acetyl α-D-glucofuranose. Then 1, 2:5, 6-di-O-isopropylidene 3-O-methyl α-D-glucofuranose was synthesized by methylation of di-O-isopropylidenic derivative with an excess of methyl iodide/silver oxide in dimethyl formamide. Isopropylidene protecting groups were removed by acidic hydrolysis with acetic acid and 3-O-methyl D-glucose was either peracetylated with acetic anhydride-pyridine or per benzoylated with benzoyl chloride. Peracylated 3-O-methyl αβ-D-glucopyranose served as glycosylation donor, either directly or via 1-bromo 1-deoxy 3-O-methyl-tri-O-acyl α-D-glucopyranose. Glycosylation acceptor was cholesterol, and chemical promoters were either dibutyl etherated boron trifluoride or cadmium carbonate. The glycoside of cholesterol was characterized by NMR spectroscopy. The NMR signals indicated 3-O-methyl-tri-O-acetyl β-D-glucopyranosyl cholesterol: 100.0/4.39 (d, 7.7 Hz, 1H) (C1/H1); 72.1/4.84 (dd, 8Hz, 1Hz, 1H) (C2/H2); 80.0/4.92 (t, 10 Hz, 1H) (C3/H3); 69.1/4.10 (dd, 5Hz, 7Hz, 1H) (C4/H4); 81.3/3.98 (dd, 2Hz, 10Hz, 1H) (C5/H5); 62.6/3.44 (C6/H6a); 62.6/3.39 (C6/H6b); 58.3/3.29 (s, 3H) (CH3 etheric group); 72.0/3.46 (C3/H3 cholesterol); 122.1/5.26 (d, 5Hz) (C6/H6 cholesterol); 11.99/0.58 (C18/H18 cholesterol); 18.86/0.90 (C19/H19 cholesterol). Acyl protecting groups were removed by Zémplen hydrolysis. The glycosylation product gave 3-O-methyl-D-glucose and cholesterol by acidic hydrolysis.

pdiga49@yahoo.com

Notes: