

4<sup>th</sup> International Conference and Exhibition on

# Natural Products Medicinal Plants & Marine Drugs

June 11-12, 2018 | Rome, Italy

## Trichiliasinenoids A-C, three novel 6,7-secomexicanolide limonoids with a 7,29-linkage from *Trichilia sinensis*

**Donghua Cao**

Chinese Academy of Sciences, China

Meliaceous limonoids are characteristic chemical markers of the Meliaceae family. They are natural products with both fascinating structures and potential bioactivities that have attracted interest from both natural products chemists and synthetic chemists in the past half century. As part of a continuing search for structurally interesting and biologically important limonoids from the Meliaceae family, the leaves and twigs of *Trichilia sinensis* collected from Xishuangbanna, Yunnan province of China were investigated. *Trichilia sinensis* Benth., a shrub, is native to the south of China and Vietnam, and it has traditional applications for the treatment of several diseases such as abdominal pain caused by *Ascaris lumbricoides*, chronic osteomyelitis, scabies, and eczema in folk medicine. The three novel rearranged mexicanolide-type limonoids (Trichiliasinenoids A-C) with an unprecedented C-29-C-7 connecting carbon skeleton formed by migration of C-7 from C-6 to C-29 of a mexicanolide-type limonoid precursor were isolated from the leaves and twigs of *Trichilia sinensis*. Their structures were assigned by spectroscopic analysis, and the absolute configurations were determined by X-ray crystallography and CD calculation. A possible biosynthetic pathway of Trichiliasinenoids A was also proposed. The three new limonoids were evaluated for their cytotoxic activity against human myeloid leukaemia (HL-60), hepatocellular carcinoma (SMMC-7721), lung cancer (A-549), breast cancer (MCF-7), and colon cancer (SW480) cell lines by MTS assay. Trichiliasinenoid B showed cytotoxicity against HL-60 cells, SMMC-7721 with an IC<sub>50</sub> value of 5.2 μM and 30.6 μM, respectively, whereas other limonoids were inactive and comparable to the cisplatin positive control (IC<sub>50</sub>: 1.1–17.3 μM).

### Biography

Donghua Cao is a PhD candidate from Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences and University of Chinese Academy of Sciences. Her research interest lies in the crossroads of chemistry and biology, and endeavors to discover novel active natural products from medicinal plants. She has published 3 papers in reputed journals.

caodonghua@xtbg.ac.cn

### Notes: