Antiplasmodial ealapasamines A-C,'mixed' naphthylisoquinoline dimers from the Central African liana Ancistrocladus ealaensis

ID 3882706
Author(s) Tshitenge, Dieudonné Tshitenge; Feineis, Doris; Mudogo, Virima; Kaiser, Marcel; Brun, Reto; Bringmann, Gerhard
Author(s) at UniBasel Kaiser, Marcel ; Brun, Reto ;
Year 2017
Title Antiplasmodial ealapasamines A-C,'mixed' naphthylisoquinoline dimers from the Central African liana Ancistrocladus ealaensis
Journal Scientific Reports
Volume 7
Pages / **Article-Number** 5767

Three unusual heterodimeric naphthylisoquinoline alkaloids, named ealapasamines A-C (1-3), were isolated from the leaves of the tropical plant Ancistrocladus ealaensis J. Léonard. These 'mixed', constitutionally unsymmetric dimers are the first stereochemically fully assigned cross-coupling products of a 5,8'- and a 7,8'-coupled naphthylisoquinoline linked via C-6' in both naphthalene portions. So far, only two other West and Central Ancistrocladus species were known to produce dimers with a central 6,6″-axis, yet, in contrast to the ealapasamines, usually consisting of two 5,8'-coupled monomers, like e.g., in michellamine B. The new dimers 1-3 contain six elements of chirality, four stereogenic centers and the two outer axes, while the central biaryl axis is configurationally unstable. The elucidation of the complete stereostructures of the ealapasamines was achieved by the interplay of spectroscopic methods including HRESIMS, 1D and 2D NMR (in particular ROESY measurements), in combination with chemical (oxidative degradation) and chiroptical (electronic circular dichroism) investigations. The ealapasamines A-C display high antiplasmodial activities with excellent half-maximum inhibition concentration values in the low nanomolar range.

Publisher Nature Publishing Group
ISSN/ISBN 2045-2322
URL https://www.nature.com/articles/s41598-017-05719-w
edoc-URL http://edoc.unibas.ch/55705/
Full Text on edoc Available;
Digital Object Identifier DOI 10.1038/s41598-017-05719-w
PubMed ID http://www.ncbi.nlm.nih.gov/pubmed/28720905
ISI-Number WOS:000405746500078
Document type (ISI) Article