

## Publication

Ancistrobrevines E-J and related naphthylisoquinoline alkaloids from the West African liana *Ancistrocladus abbreviatus* with inhibitory activities against *Plasmodium falciparum* and PANC-1 human pancreatic cancer cells

**JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)**

ID 4487803

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**Year** 2018

**Title** Ancistrobrevines E-J and related naphthylisoquinoline alkaloids from the West African liana *Ancistrocladus abbreviatus* with inhibitory activities against *Plasmodium falciparum* and PANC-1 human pancreatic cancer cells

**Journal** Fitoterapia

**Volume** 131

**Pages / Article-Number** 245-259

From the roots of the West African liana *Ancistrocladus abbreviatus* (Ancistrocladaceae), ten new naphthylisoquinoline alkaloids (7a, 7b, 8a, 8b, and 9-14), displaying three different coupling types (5,1', 5,8', and 7,8'), were isolated, among them a series of five 5,1'-linked representatives and four metabolites belonging to the rare group of 7,8'-coupled alkaloids. Two of the alkaloids, the ancistrobrevines I (13) and J (14), are only the fourth and fifth examples of 7,8'-linked naphthylidihydroisoquinolines ever found in nature. The stereostructures of the new plant metabolites were determined by spectroscopic, chemical (oxidative degradation), and chiroptical (electronic circular dichroism) methods. For the assignment of the axial configuration of 13 and 14 relative to the stereocenter at C-3, which is too far away for significant NOE long-range interactions, these 7,8'-coupled naphthylidihydroisoquinolines were stereoselectively converted into the respective cis-configured tetrahydroisoquinoline analogs. The newly generated 'auxiliary' stereocenter at C-1 permitted decisive NOE interactions between the isoquinoline and the naphthalene parts, and thus a reliable attribution of the axial configuration of 13 and 14. In addition, five known compounds (3, 5, 16, 17, and 20), previously discovered in related African and Asian *Ancistrocladus* species, have now for the first time been identified in *A. abbreviatus*. All of these alkaloids are S-configured at C-3 and bear an oxygen function at C-6, and are, thus, typical Ancistrocladaceae-type compounds. Some of the alkaloids of *A. abbreviatus* exhibited promising activities against the malaria parasite *Plasmodium falciparum* and PANC-1 human pancreatic cancer cells.

**Publisher** Elsevier Science

**ISSN/ISBN** 0367-326X

**edoc-URL** <https://edoc.unibas.ch/66889/>

**Full Text on edoc** No;

**Digital Object Identifier DOI** 10.1016/j.fitote.2018.11.006

**PubMed ID** <http://www.ncbi.nlm.nih.gov/pubmed/30419265>

**ISI-Number** MEDLINE:30419265

**Document type (ISI)** Journal Article