Antimalarial beta-carbolines from the New Zealand ascidian Pseudodistoma opacum

ID 1022822
Author(s) Chan, Susanna T S; Pearce, A Norrie; Page, Michael J; Kaiser, Marcel; Copp, Brent R
Author(s) at UniBasel Kaiser, Marcel ;
Year 2011
Title Antimalarial beta-carbolines from the New Zealand ascidian Pseudodistoma opacum
Journal Journal of natural products
Volume 74
Number 9
Pages / **Article-Number** 1972-9

One tetrahydro-beta-carboline, (-)-7-bromohomotrypargine (1), and three alkylguanidine-substituted beta-carbolines, opacalines A, B, and C (2-4), have been isolated from the New Zealand ascidian Pseudodistoma opacum. The structures of the metabolites were determined by analysis of mass spectrometric and 2D NMR spectroscopic data. Natural products 2 and 3, synthetic debromo analogues 8 and 9, and intermediate 16 exhibited moderate antimalarial activity toward a chloroquine-resistant strain of Plasmodium falciparum, with an IC(50) range of 2.5-14 muM. The biosynthesis of 1-4 is proposed to proceed via a Pictet-Spengler condensation of 6-bromotryptamine and the alpha-keto acid transamination product of either arginine or homoarginine. Cell separation and (1)H NMR analysis of P. opacum identified tetrahydro-beta-carboline 1 to be principally located in the zooids, while fully aromatized analogues 2-4 were localized to the test

Publisher American Society of Pharmacognosy
ISSN/ISBN 0163-3864
edoc-URL http://edoc.unibas.ch/dok/A6002109
Full Text on edoc No;
Digital Object Identifier DOI 10.1021/np200509g
PubMed ID http://www.ncbi.nlm.nih.gov/pubmed/21846091
ISI-Number WOS:000295100400020
Document type (ISI) Journal Article