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Cogniauxia podolaena : Bioassay-Guided Fractionation of Defoliated Stems, Isolation of Active Compounds, Antiplasmodial Activity and Cytotoxicity

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Abstract

Cogniauxia podolaena Baill. (Cucurbitaceae) is traditionally used in Congo Brazzaville for the treatment of malaria. We assessed the antiplasmodial activity of the plant and isolated some of the compounds responsible for this activity. It was the first time that a chemical study of this plant has been undertaken. Three triterpenes were isolated: cucurbitacin B (1), cucurbitacin D (2) and 20-epibryonolic acid (3) and their structures were assigned from spectroscopic evidence and comparison with published data. The crystallographic structure of 3 was determined. All fractions and compounds obtained in this study were assayed for antiplasmodial activity (on FcM29, a chloroquine-resistant strain of *P. falciparum*) and cytotoxicity (on KB and Vero cell lines). The IC_{50} values of 1, 2 and 3 are 1.6, 4 and 2µg/mL on FcM29. Both 1 and 2 have a high cytotoxicity whereas 3 shows a better selectivity index.

Keywords:

Africa ; Cogniauxia podolaena ; Cucurbitaceae ; Cucurbitacins ; 20-epibryonolic acid ; antiplasmodial activity cytotoxicity