

**ISOLATION AND  
STRUCTURE ELUCIDATION  
OF CYTOTOXIC NATURAL  
PRODUCTS FROM  
SURINAME AND  
MADAGASCAR**

by

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## Abstract

### ISOLATION AND STRUCTURE ELUCIDATION OF CYTOTOXIC NATURAL PRODUCTS FROM SURINAME AND MADAGASCAR

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Through a continuing search for anticancer compounds as part of an International Cooperative Biodiversity Grant program, the extracts of two plants were selected for study on the basis of their cytotoxic activity. These extracts were further fractionated to yield four compounds. The structures of these compounds were elucidated with mass spectrometry and 1-D and 2-D NMR spectroscopy.

The ethyl acetate extract of the twigs of *Garcinia macrophylla* from Suriname was weakly cytotoxic in the A2780 human ovarian cancer cell bioassay. The known benzophenone guttiferone A and a new guttiferone analog, named guttiferone G, were isolated from the extract and found to be responsible for the bioactivity. A known triterpene, friedelin, was also isolated from the extract and found to be inactive. The structure of guttiferone A was determined by comparison of its NMR data to those found in the literature. The structure of guttiferone G was determined by comparison to guttiferone A and through careful examination of both 1D and 2D NMR data.

An extract of *Bridelia tulasneana* from Madagascar yielded one compound. It was identified as the known lignan deoxypodophyllotoxin and was responsible for the bioactivity. It was identified by a comparison of its spectral data to those found in the literature and those of an authentic sample.

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