

POTENTIAL OF FLAVAGLINES FROM AGLAIA SPECIES IN CANCER CHEMOTHERAPY AND LARGE-SCALE ISOLATION OF METHYL ROCAGLATE FROM AGLAIA PONAPENSIS

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During the past few years, a group of flavaglines from the plant genus *Aglaia* has received broad scientific attention as interesting natural product lead compounds with potential anticancer and insecticidal activities.¹ Since the first flavagline with a cyclopenta[*b*]benzofuran skeleton, rocaglamide, from *Aglaia elliptifolia*, was found to exhibit antileukemic activity in a murine *in vivo* model,² the genus *Aglaia* has been subjected to further investigation. To date, over 40 cyclopenta[*b*]benzofurans have been tested against different human cancer cell lines, and the cumulative results provide some important clues as to how to improve their activity through modification of their chemical structures.¹ Although the ultimate molecular target(s) responsible for their antiproliferative activity has not yet been identified, studies on their cellular mechanism of action have demonstrated that some of these compounds inhibit TNF- α or PMA-induced NF- κ B activity in T-lymphocytes and induce apoptosis in different human cancer cell lines.³ In the present work, large scale isolation of methyl rocaglate from *Aglaia ponapensis* is carried out, in order to do chemical modification to give rocaglaol, a flavagline that has selective activity towards several cancer cell lines. Rocaglaol showed over three-hundred-fold less activity for normal human umbilical vein endothelial cells (HUVEC) compared to its activity in Lu1, LNCaP, and MCF-7.⁴ The NF- κ B activity of several flavaglines isolated by our group from *A. edulis* and *A. ponapensis* is also presented.

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Supported by NCI/NIH grant U19 CA52956 (A.D. Kinghorn).

