

Natural products upregulating SMAC/Diablo genes expression from *Ficus deltoidea* and their role in prostate cancer chemoprevention.

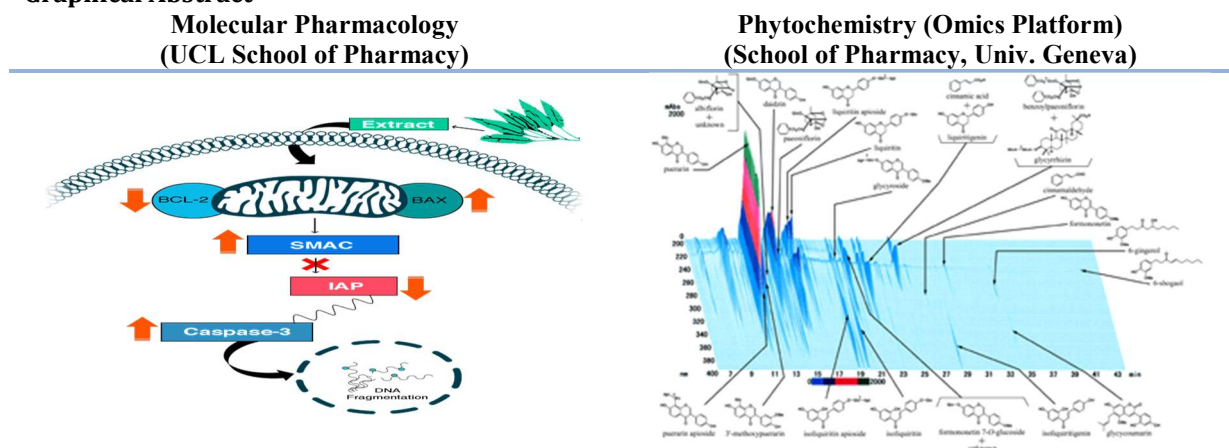
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Requesting collaboration with: Jean-Luc Wolfender³ and Emerson Ferreira³

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Graphical Abstract



Antecedents:

Prostate cancer ranks ninth overall and fourth among men in Malaysia according to the National Cancer Registry. *Ficus deltoidea* plays a vital role in Malay traditional medicine, where women consume the decoction of boiled leaves as an after-birth treatment to contract the uterus and vaginal muscles besides treating the disorders of the menstrual cycle and leucorrhoea.

Our Findings:

Interestingly, we discovered that fractions of two *Ficus deltoidea* varieties were selectively cytotoxic towards PC3 cell line in a panel of 7 cancer cells with low IC₅₀ values (<30 µg/mL vs. >100µg/mL). Cell death mechanism is via apoptosis through an innovative mechanism involving the upregulation of BAX and SMAC/Diablo genes. Moreover, the extract inhibits both 2D and 3D cell migration at non cytotoxic concentrations.

Our collaborative proposal:

Such encouraging results warrant further work in order to identify the active compound/s or metabolites that might be responsible for the SMAC/Diablo mediated selective cytotoxic activity towards prostate cancer cell lines (PC3).

With this in mind, we believe that the collaboration effort with Professor Jean-Luc Wolfender of the University of Geneva could really help us in achieving this objective. **Professor Jean-Luc Wolfender** has vast experience in metabolomic studies related to natural product research, **just finished a complete characterization of all *Ficus deltoidea* Malaysian varieties.**

Therefore, this collaborative effort will speed up the discovery of SMAC/Diablo natural leads as well as enable us to learn and appreciate new methods and techniques in plant metabolomic research.