Determination of Non-Toxic and Subtoxic Concentrations of Potential Antiviral Natural Anthraquiones

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SUMMARY. Anthraquinones-rich extracts of Heterophyllaea pustulata Hook f. (Rubiaceae) exhibited in vitro antiviral activity against Herpes Simplex Virus Type I, from which several anthraquinones (AQs) were isolated and identified. The Maximum Non-Cytotoxic Concentration (MNCC), the subtoxic concentration (SubTC), and the CC50 of each AQ were determined on a mammalian eukaryotic cell line (Vero cells) by means of Neutral Red uptake assay; the cytopathic effect was simultaneously evaluated by optical microscopy. The range of concentrations where each AQ did not exhibit cytotoxicity was established, which is limited by the MNCC: rubiadin 1-methyl ether, damnacanthol and pustuline were found to be markedly less cytotoxic. To the remaining AQs, we could estimate a SubTC (about 10 μg/mL) that assures 80 % cellular viability. Therefore, we determined a concentration range which could be used to evaluate the antiviral effect of each AQ since it ensures the viability of the host cell.

KEY WORDS: Anthraquinones, Cytotoxicity, Heterophyllaea pustulata Hook f., Superoxide anion, Vero cells.

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