**Antitrypanosomal and cytotoxic activities of botanical extracts from Murraya koenigii (L.) and Alpinia mutica Roxb**


ABSTRACT

Four carbazoles (girinimbine, mahanimbine, murrayafoline and murrayanine), isolated from Murraya koenigii, and one kavalactone (5,6-dehydrokawain) and one flavonoid (pinostrobin) isolated, from Alpinia mutica, were tested for their antitrypanosomal activity using in vitro cultured Trypanosoma evansi cell lines. The cytotoxic activities of these compounds were also investigated against mammalian Vero cells using the MTT (3-(4,5- Dimethylthiazol-2-yl) -2,5-diphenyltetrazolium bromide)-cell proliferation assay. Three carbazole compounds, namely mahanimbine, murrayafoline, and girinimbine, showed a potent antitrypanosomal activity, scoring a median inhibitory concentration (IC50) of 3.13, 6.35 and 10.16 µg/ml, respectively. Girinimbine was the least toxic to Vero cells, and the mean cytotoxic concentration (CC50) and the selectivity index (SI) of this compound were 745.58 ± 42.38 µg/ ml and 73.38, respectively. Girinimbine and the other carbazole compounds possess potential antitrypanosomal activity with comparably low toxicity against mammalian cells. Girinimbine, in particular, is a good candidate to be further investigated as a potential antitrypanosomal agent using in vivo models.