

## Antimicrobial and cytotoxic properties of some Malaysian traditional vegetables (ulam)

### ABSTRACT

Ethanol extracts of 19 Malaysian traditional vegetables (locally known as *ulam*) belonging to 15 families were screened for antimicrobial and cytotoxic activities. Both the disc diffusion (qualitative) and tube dilution (quantitative) assays were employed for the determination of antimicrobial activity against six pathogenic microorganisms, i.e. two Gram-positive bacteria (*Bacillus cereus* and *Bacillus megaterium*), two Gram-negative bacteria (*Escherichia coli* and *Pseudomonas aeruginosa*) and two fungi (*Aspergillus ochraceus* and *Cryptococcus neoformans*). Six extracts, i.e. *Anacardium occidentale*, *Garcinia atroviridis*, *Averrhoa bilimbi*, *Polygonum minus*, *Diplazium esculentum* and *Etlintera elatior*, showed antimicrobial with minimum inhibitory concentration (MIC) and minimum lethal concentration (MLC) values in the respective ranges of 100 ? 800  $\mu\text{g/ml}$  and 400 ? 800  $\mu\text{g/ml}$ . Seven extracts, i.e. *Anacardium occidentale*, *Garcinia atroviridis*, *Sesbania grandiflora*, *Barringtonia racemosa*, *Polygonum minus*, *Kaempferia galanga* and *Etlintera elatior* displayed cytotoxic activity against the HeLa (human cervical carcinoma) cell line with CD 50 values in the range of 10630  $\mu\text{g/ml}$ . The *ulam* show potential as functional food in view of the significant therapeutic and nutritive benefits.

**Keyword:** 'Ulam'; Antimicrobial activity; Cytotoxic activity; Ethanol extracts; Functional food; Malaysian traditional vegetables