

## Assessment of antioxidant and cytotoxicity activities of saponin and crude extracts of *Chlorophytum borivilianum*

### ABSTRACT

The present paper focused on antioxidant and cytotoxicity assessment of crude and total saponin fraction of *Chlorophytum borivilianum* as an important medicinal plant. In this study, three different antioxidant activities (2,2-diphenyl-1-picrylhydrazyl radical scavenging (DPPH), ferrous ion chelating (FIC), and  $\beta$ -carotene bleaching (BCB) activity) of crude extract and total saponin fraction of *C. borivilianum* tubers were performed. Crude extract was found to possess higher free radical scavenging activity (ascorbic acid equivalents  $2578 \pm 111$  mg AA/100 g) and bleaching activity ( $IC_{50} = 0.7$  mg mL<sup>-1</sup>), while total saponin fraction displayed higher ferrous ion chelating ( $EC_{50} = 1$  mg mL<sup>-1</sup>). Cytotoxicity evaluation of crude extract and total saponin fraction against MCF-7, PC3, and HCT-116 cancer cell lines using 3-(4,5-dimethylthiazol-2-yl)-2,5 diphenyltetrazolium bromide (MTT) cell viability assay indicated a higher cytotoxicity activity of the crude extract than the total saponin fraction on all cell lines, being most effective and selective on MCF-7 human breast cancer cell line.

**Keyword:** Antioxidant; Cytotoxicity activities; Saponin; Crude extract; *Chlorophytum borivilianum*