ABSTRACT

Bryophytes are known for its medicinal properties. Amongst them, liverwort (*Marchantia paleacea*) is one of the plants that confers pharmacological activity. This present study aimed to determine the potential cytotoxic activity *M. paleacea* ethanolic extract against human cervical adenocarcinoma (HeLa) and human epidermal keratinocytes (HaCaT) cell lines by means of MTT assay and cell counting method using ImageJ. The samples were obtained from BRIN Cibodas (Indonesia) and were extracted by means of maceration method. The extraction process was carried out using absolute ethanol as the extracting solvent. Here, HeLa and HaCaT cells were treated with various concentration of *M. paleacea* ethanolic extract and 5-fluorouracil, a chemotherapy drug, as positive control. The cytotoxic activity of the extract towards HeLa and HaCaT cells was examined utilizing MTT assay and automated cell count by ImageJ. According to the MTT results, it was discovered that the viability of HeLa cells was significantly inhibited by *M. paleacea* ethanolic extract at all concentrations (12.5, 25, 50, 100 ppm), with 100 ppm extract concentration showing the major loss of cell viability. In HaCaT cells, the *M. paleacea* ethanolic extract did not affect the cell viability. Cell counting method, however, yielded results that contrasted with those obtained by MTT assay since it did not reveal any cytotoxic activity of *M. paleacea* ethanolic extract toward HeLa cells and HaCaT cells. Hence, ethanolic extract of *M. paleacea* might offer a safer alternative to chemotherapy drugs for its non-cytotoxic effect toward healthy cell line.

Keywords: Cytotoxic; HaCaT; HeLa; *Marchantia paleacea*