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In vitro cytotoxicity assay of *Sauropus androgynus* on human mesenchymal stem cells

Oeke Yunita[a*], Mochammad Yuwono[b] and Fedik Abdul Rantam[c]

[a]*Faculty of Pharmacy, University of Surabaya, Surabaya, Indonesia;* [b]*Faculty of Pharmacy, Airlangga University, Surabaya, Indonesia;* [c]*Laboratory of Stem Cells, Institute of Tropical Disease, Airlangga University, Surabaya, Indonesia*

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Sauropus androgynus is a well-known Indonesian medicinal herb that is used extensively to increase human breast-milk production. However, many studies have

first report of a cytotoxicity assay of *S. androgynus* extracts from Indonesia. After 72 hours of incubating cell cultures with varying concentrations of extracts (250–2500 mg L^{-1}), cytotoxicity was assayed by the reduction of 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromide (MTT) and reported in terms of cell viability. The apoptotic effects of the extract were determined by a terminal deoxynucleotidyl transferase-mediated dUTP-biotin nick end labeling (TUNEL) colorimetric assay. The *S. androgynus* methanol extract from East Java, Indonesia, was less cytotoxic to hMSCs-BM with an IC_{50} of 2450 mg L^{-1}, but it could inhibit cell viability via the apoptosis pathway. A sample extract of plants collected near Purwosari had the lowest hMSCs-BM viability percentage (37%), while the extract from plants collected near Surabaya Pusat had a cell viability of 75%. Further studies are required to investigate the metabolites in *S. androgynus* that are highly correlated with its toxic effects.

Keywords: *in vitro* cytotoxicity; *Sauropus androgynus*; human mesenchymal stem cells; apoptosis; safety assessment