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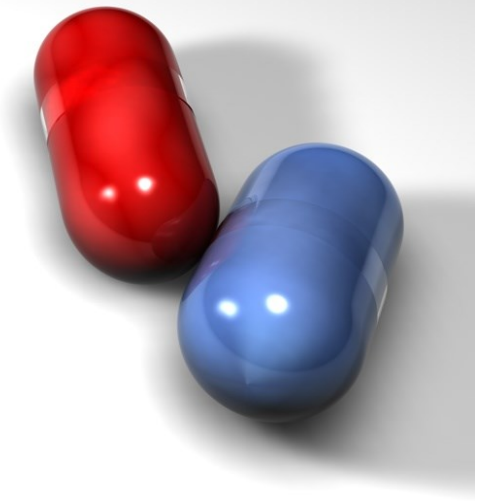

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Letter to the Editor

Antiproliferative effect of *Memecylon malabaricum* leaves methanolic extract against A-431 cell lines

Sir,

Psoriasis is a chronic, immune-mediated inflammatory disorder of the skin. The pathogenesis includes the environmental trigger factors with genetic factors, trauma, chemicals, bacterial infection, etc. (Gaikwad et al., 2021).

Various treatments are available for psoriasis management, but herbal therapy is accepted nowadays because of its popularity, minimum adverse effects, etc. Some studies suggest using natural in psoriasis treatment only because of their ability to inhibit proliferation. Literature reveals the antiproliferative effect of some plants such as *Acacia nilotica* (Thiagarajan et al. 2020), *Glycyrrhiza glabra* (Shinde et al., 2016), *Euphorbia fischeriana* (Wu at al., 2016), *Triumfetta welwitschii* (Moyo and Mukanganyama, 2015), *Xylopia aethiopica* (Adaramoye et al., 2011), etc.

The antiproliferative effect of plant *Memecylon edule* had been described. Rutin, ursolic acid and thujone isolated from *M. edule* exhibited antiproliferative effect against U-937 and HT-60 cell lines (Srinivasan et al., 2016). Herein, the antiproliferative effect of methanolic extract of *M. malabaricum* was assessed against A-431 cell lines using the MTT assay method.

In vitro antiproliferative activity was done with A-431 cell lines (Khatoon et al., 2021). In brief A-431 cells were incubated at a concentration of 1 × 10^4 cells/mL in a culture medium (24 hours at 37°C, 5% CO_2). Cells were seeded at a concentration (70 µL) 10^4 cells/well in a 100 µL culture medium and 100 µL sample of *M. malabaricum* leaves extract in (50, 100, 150, 200, 250 µg/mL) into microplates, respectively (tissue culture grade, and 96 wells). The control wells were incubated with DMSO (0.2% in PBS) and cell line. All samples were incubated in triplicate. Cell cultures were incubated for 24 hours at 37°C and 5% CO_2 in a CO_2 incubator (Thermo Scientific BB1505). After incubation, the medium was removed entirely and added 20 µL of MTT reagent (5 mg/min PBS). After the addition of MTT, cells were incubated for 4 hours at 37°C in a CO_2 incubator. The yellowish MTT was reduced to dark-colored formazan by viable cells only after removing the medium altogether. Added 200 µL of DMSO (kept for 10 min) and incubated at 37°C (wrapped with aluminium foil). Five concentrations of the *M. malabaricum* leaves extract were analyzed by measuring the absorbance of each sample by a microplate reader (Benesphera E21) at a wavelength of 550 nm.

$$\% \text{ Growth inhibition} = 1 - \frac{\text{Mean OD of test sample}}{\text{Mean OD of negative control}} \times 100$$

As shown in Figure 1, the methanolic leaves extract of *M. malabaricum* showed remarkable antiproliferative activity against the A-431 cell line with %cell growth inhibition value of 20.6–35.7. The antiproliferative activity of the methanolic leaves extracts of *M. malabaricum* was comparable to the standard 5-fluorouracil (5-FU). Antiproliferative activity of the leaves extracts of *M. malabaricum* indicated the potential of the *M. malabaricum* for antipsoriatic potential. The *M. malabaricum* showed dose-dependent antiproliferative activity.

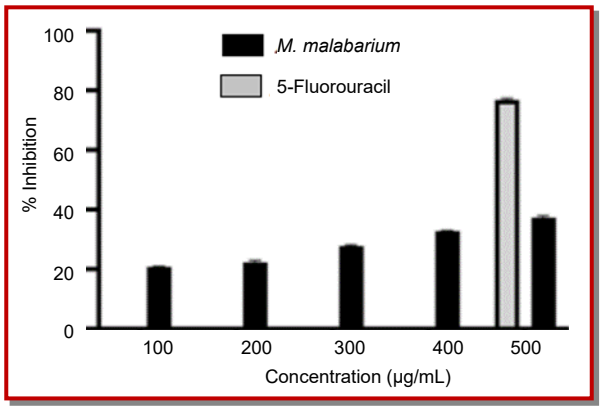

Figure 1: Antiproliferative activity of methanolic extract *Memecylon malabaricum* leaves

Epidermal proliferation occurs due to an increase in cGMP and decreased cAMP because of lipid peroxidation (Nowak-Perlak et al., 2022). The antiproliferative effects result from gene expression regulation and are initiated with transcriptional activation of JAK-STAT, signal transduction pathways (Aalinkeel et al., 2010)

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