

Cytotoxicity Evaluation of Thai Herbs between MTT and NRR Assay

Suwanna Korsuwannawong Research Office, Faculty of Dentistry, Mahidol University, Bangkok, Thailand.

Objectives: The aim of this study was to compare the cytotoxicity screening assays of Thai herbs between MTT (The dimethylthiazoldiphenyl-tetrazoliumbromide) and NRR (The neutral red release) assays.

Methods: Mouse fibroblast (L929) cells were exposed to the concentration of Thai herbs of 0.01%, 0.1%, 0.25% and 0.5% (w/v) in the 96-wells tissue culture plate for 24 h. Cell viability after exposed to Thai herb was determined by MTT and NRR assays.

Results: The result revealed no significant difference between two assays of cytotoxicity evaluation at the high concentration of Thai herbs ($p > 0.05$). However, more viable cells were found in the minimal concentration of 0.01% evaluated by NRR.

Conclusions: Various assay methods are used for evaluating the cytotoxic effects of chemicals on cultured cells. In general, both the MTT and NRR assays could be performed very effectively. They are equally effective for cytotoxicity screening of Thai herbs at high concentration. NRR assay is recommended for the cytotoxicity evaluation of the minimal concentration of 0.01% ($p < 0.05$).