

Evaluation of anti-parasitic effect of *Andrographis paniculata* (Burm. F) nees, ethanolic extract of *Toxoplasma gondii*

ABSTRACT

Infection with *Toxoplasma gondii* remains widespread because water and food serve as major sources of sporulated oocysts. Infection is poorly controlled as current medications have limited efficacious and severe side effects, and are accompanied by potential development of resistance, and there is an absence of vaccine. The effects of ethanolic extract of *Andrographis paniculata* (EEAP) on *T. gondii* in vitro were evaluated. EEAP, obtained through maceration of leaf powder with 100% ethanol for three days, contained an alkaloid, phytosterols and phytophenolic compounds. IC₅₀ (50% inhibitory concentration) of EEAP against Vero cells was 142 µg/ml and against *T. gondii* RH strain growth in Vero cells was 4.4 µg/ml (selectivity index = 35) compared to 8.3 µg/ml for clindamycin. EEAP (4.4 µg/ml) inhibited tachyzoite cell invasion and intracellular proliferation >70 and 80% respectively compared to control following a 48-hour treatment. These findings showed that EEAP contains promising drug candidates effective against *T. gondii* and was safe to host cells.

Keyword: *Toxoplasma gondii*; Cell invasion; Cytotoxicity; Intracellular proliferation; Ethanolic extract; Vero cell