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Anti-crypto sporidial activity of *Egyptian propolis* and garlic oil against *Cryptosporidium* oocysts *in vitro*

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The present study aimed to evaluate the efficacy of ethanolic extract of propolis (EEP), water extract of propolis (WEP) and garlic oil (GO) against *Cryptosporidium* spp. *in vitro*. *Cryptosporidium* oocysts were isolated from fecal samples of naturally infected neonatal calves and propagated in goat kids then purified and stored at 4ºC. For infectivity test, seventy female BALB/c mice, weighing 18-20g, were randomly assigned into 10equal groups and numbered individually. These mice were injected subcutaneously with 0.5ml of 4mg/ml dexamethasone every 48h for 8 days. On the day of the last injection, the groups from II to X were inoculated orally with 106 *Cryptosporidium* oocysts pre-suspended in different concentrations (6.25, 25 and 50 mg/ml) of EEP, WEP and GO. Untreated control group I was inoculated with 106 *Cryptosporidium* oocysts. The oocysts shedding were recorded daily from the 1st to the 9th day post infection. Fecal smears were stained by modified Ziehl-Neelsen and oocysts counts per 50 fields at 100x magnification were determined. The overall oocysts count was obtained by collecting the oocysts scores of all mice at all periods. The result revealed that all extracts with different levels reduced fecal oocysts shedding but marked reduction (P<0.001) was observed in mice infected with oocysts pre-treated with WEP at concentrations 6.25 and 50 mg/ml compared to untreated control group. Also, at a concentration of 25 mg/ml, fecal oocysts count significantly decreased (P<0.001) in mice infected with oocysts pre-treated with WEP than that EEP and garlic oil. In conclusion, Egyptian WEP has a powerful anti-crypto sporidial activity than the EEP and GO.

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