

# ACTIVITY OF PLANT ESSENTIAL OILS AGAINST *GIARDIA DUODENALIS*

Supaluk Popruk<sup>1</sup>, Kanthinich Thima<sup>1</sup>, Ruenruetai Udonsom<sup>1</sup>, Rachatawan Chiabchalard<sup>1</sup>,  
Aongart Mahittikorn<sup>1</sup>, Kaewmala Palukul<sup>2</sup> and Apanchanid Thepouypom<sup>3</sup>

<sup>1</sup>Department of Protozoology, <sup>2</sup>Department of Entomology, <sup>3</sup>Department of Tropical  
Nutrition and Food Science, Faculty of Tropical Medicine, Mahidol University,  
Bangkok, Thailand

**Abstract.** *Giardia duodenalis* (synonyms: *Giardia lamblia* and *Giardia intestinalis*) is a common flagellate, zoonotic protozoan causing the diarrheal disease giardiasis. There is little information about the essential oils of plants found in Thailand against this parasite. We aimed to determine the efficacy of essential oils of the following plants against *G. duodenalis*: *Syzygium aromaticum*, *Zingiber officinale* Roscoe, *Alpinia galanga*, *Litsea cubeba*, *Illicium verum*, *Zanthoxylum rhetsa*, *Citrus × aurantifolia*, *Citrus hystrix*, *Citrus reticulata*, *Ocimum basilicum* and *Ocimum africanum*, using MTT (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide) tetrazolium reduction assay. It was found that essential oils of *C. × aurantifolia* was the most effective against *G. duodenalis* with  $IC_{50} = 6.96 \pm 0.13 \mu\text{g/ml}$ , followed by *L. cubeba* with  $IC_{50} = 60.67 \pm 0.82 \mu\text{g/ml}$  in dose-dependent fashion. The other essential oils had no efficacy against *G. duodenalis*, suggesting they may contain fewer anti-giardial constituents. Future studies are needed to elucidate major active constituents of these essential oils and prove their efficacy and safety for treatment of *G. duodenalis*.

**Keywords:** *Giardia duodenalis*, essential oils, dose-dependent fashion

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Correspondence: Dr Supaluk Popruk, Department of Protozoology, Faculty of Tropical Medicine, Mahidol University, 420/6 Ratchawithi Road, Ratchathewi, Bangkok 10400, Thailand.  
Tel: +66 (0) 23549100-4; Fax: +66 (0) 2643 5601  
E-mail: supaluk.pop@mahidol.ac.th