A203 The effect of medicinal plant extracts from Thailand and Sri Lanka on the growth of *Helicobacter pylori in vitro*

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Helicobacter pylori (HP) a gram negative bacterium, is recognized as being the primary etiological agent responsible for the development of gastritis, dyspepsia, and peptic ulcer disease (PUD). In developing countries, where the incidence of HP infection may be as high as 80-100%, plant-based medicines are often the only therapeutic agents available for treatment. In Thailand and Sri Lanka, numerous plants are used for the treatment of a wide range of gastrointestinal ailments, including peptic ulcer disease. As part of an ongoing screening program, we have assessed the *in vitro* susceptibility of 18 strains of *Helicobacter pylori* to methanol extracts of 21 Thai and 3 Sri Lankan medicinal plants used traditionally for treatment of PUD. Methanol extracts of *Myristica fragrans* (aril or fruit) had a minimum inhibitory concentration (MIC_{90}) of 12.5 µg/ml; *Barringtonia acutangula* (leaf) and *Kaempferia galanga* (rhizome) had an MIC_{50} of 25 µg/ml; *Cassia grandis* (leaf), *Cleome viscosa* (leaf), *Myristica fragrans* (leaf), *Syzygium aromaticum* (leaf) and *Anisomeles indica* (leaves and stems), had MIC_{50} of 50 µg/ml. Methanolic extracts of botanicals with a MIC_{50} of 100 µg/ml included *Pouzolzia pentandra* (leaf), *Cycas siamensis* (leaf), *Litsea elliptica* (leaf) and *Melaleuca quinquenervia* (leaf).

A204 *In vitro* anti-*Helicobacter pylori* activities of methanol extract of *Eucalyptus grandis*

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The etiologic agent of peptic ulcer, duodenal ulcer, chronic gastritis, gastric adenocarcinoma and related gastroduodenal disorders has been traced to *Helicobacter pylori*. Current therapy have not yielded much success as cases of bacterial resistance, side effects, non-patients compliance and consequent relapse of *H. pylori* infections have been reported (1). Hence the aim of this work is to establish the anti-*H. pylori* activity of *Eucalpytus grandis*, a medicinal plant used in the treatment of gastrointestinal problems. Crude hexane and methanol extracts of *E. grandis* stem bark were screened against a standard strain ATCC 43504 and ten clinical strains of *H. pylori* (UCH 97001, UCH 97002, UCH 97009, UCH 98020, UCH 98026, UCH 99039, UCH99041, UCH 99045, UCH 99050 and UCH 99052) for antibacterial activity using agar diffusion method on Mueller-Hinton agar supplemented with defibrinated horse blood and grown in a microaerophilic incubator (2). Hexane extract was less active compare to the methanol extract. All the strains except UCH 97002 and UCH 98020, were inhibited by the methanol extract to varying degrees. The minimum inhibitory concentration (MIC) against the susceptible strains tested ranged between 0.39 and 1.56 mg/ml.

The effect of the methanol extract was tested on the urease activity using alkalimetric assay (3). Urease activity of the three strains tested decreased with increase in the concentration of the extract. The greatest inhibition of urease activity was observed with UCH 97009. The effect of the methanol extract on microbial cell surface hydrophobicity (CSH) was determined by salt aggregation test (SAT) (4). The addition of the methanol extract enhanced cell aggregation of seven of the *H. pylori* strains leading to a decrease in the CSH of the *H. pylori*. The SAT titre decreased from >3 to < 1.5 for five of the strains and to < 3 for two of the strains.

Phytochemical screening of the plant revealed the presence of tannins, essential oils and saponins, but not alkaloids.

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