

**STUDIES ON BIOACTIVITY AND CHEMICAL INVESTIGATION OF
MYANMAR TRADITIONAL MEDICINE
FORMULATION (TMF - 06) AND MEDICINAL PLANTS
USED FOR THE TREATMENT OF DYSENTERY AND DIARRHOEA**

Ph.D. DISSERTATION

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ABSTRACT

Traditional medicine formulation-06 (TMF - 06) which is used for the treatment of dysentery and diarrhoea in Myanmar was selected and screened for antibacterial activity by using agar disc diffusion technique. Polar and non-polar extracts of TMF-06 as well as its two constituent plants were tested on 33 species of standard and hospital bacterial strains and the Minimum Inhibitory Concentration (MIC) of the active extracts was also determined. Rhizomes of *Curcuma longa* Linn. one of the two constituent plants of TMF-06, was fractionated by column and thin layer chromatographic methods. Chromatographic separation of active ethyl acetate extracts yielded three curcuminoids, namely curcumin (5.9%), desmethoxycurcumin (0.018 %) and bisdesmethoxycurcumin (0.0136%). *Nigella sativa* Linn. seeds, the other plant constituent, were also steam distilled and the essential oil obtained was fractionated by column chromatography to give thymoquinone (0.01%). Kaempferol (0.12%), quercetin (0.001%), a β -diketone (0.002%) and an ester (0.02%) were also isolated by column chromatography from the 70% EtOH polar extract of the *Nigella sativa* seeds after defatting and acid hydrolysis. The isolated compounds were identified by UV, FT IR, ^1H NMR, ^{13}C NMR and mass spectroscopic methods. Isolated curcumin, thymoquinone, kaempferol, quercetin and the β -diketone were found to show bactericidal activity.