

**BIOACTIVITY SCREENING OF THE KNOTTY PROTUBERANCES IN THE BARK OF ZANTHOXYLUM BUDRUNGA****G.R.N. Rathnayaka<sup>1,2</sup>, M.N. Wickramaratne<sup>2\*</sup>, N.S. Kumar<sup>1</sup> and L. Jayasinghe<sup>1</sup>**<sup>1</sup>*Institute of Fundamental Studies, Kandy, Sri Lanka*<sup>2</sup>*Department of Physical Sciences and Technology, Faculty of Applied Sciences, Sabaragamuwa University of Sri Lanka, Belihuloya, Sri Lanka*

\*nirmaliw@sab.ac.lk

Medicinal plants have been documented to be a great source for bioactivities such as antibacterial, antimutagenic, anticarcinogenic, *etc.* *Zanthoxylum budrunga* is an aromatic plant belonging to the Family Rutaceae commonly known as “Budrung” and known as “Thanahalu” in Sri Lanka. Previous investigations and uses reveal its constituents of the bark, leaves, fruits and seeds to carry medicinal value. The traditional indigenous medical practitioners in Dambana, Sri Lanka use the plant’s knotty protuberances in treating breast cancer. In this study we performed a preliminary screening of the ethyl acetate extract ( $E_{EAC}$ ) and methanol extract ( $E_{MeOH}$ ) obtained from sequential extraction of the knotty protuberances bark of *Zanthoxylum budrunga* for its bioactivities such as antioxidant activity (DPPH assay),  $\alpha$ -amylase inhibition activity, antifungal activity (against *Cladosporium spp.*), phytotoxicity (lettuce seed germination) and cytotoxicity (brine-shrimp assay). The  $IC_{50}$  for the antioxidant activity of  $E_{EAC}$  and  $E_{MeOH}$  was 73.04 ppm and 125.87 ppm respectively. The  $IC_{50}$  of the  $\alpha$ -amylase inhibition activity revealed that of  $E_{EAC}$  to be 1574.8 ppm and  $E_{MeOH}$  to be 1678.44 ppm. A 50% root inhibition was observed at 1018.5 ppm and 1241.27 for  $E_{EAC}$  and  $E_{MeOH}$  respectively. A 50% shoot length inhibition for  $E_{EAC}$  and  $E_{MeOH}$  was observed at 1038.1 ppm, and 1648.55 ppm respectively. The brine shrimp lethality assay showed an  $EC_{50}$  of 3997.71 ppm for  $E_{MeOH}$  and 3719.47 ppm for  $E_{EAC}$ .  $E_{EAC}$ ,  $E_{MeOH}$  and several fractions obtained from the column separation of the  $E_{EAC}$  showed antifungal activity against *Cladosporium ssp.* as revealed by the TLC. The above preliminary results confirm that both  $E_{EAC}$  and  $E_{MeOH}$  extracts possess important bioactivities and therefore further investigations must be carried out to isolate and characterize the responsible compounds.