

**UNIVERSITI TEKNOLOGI MARA**

**EVALUATION OF MALAYSIAN HERBS ON  
*ARTEMIA SALINA* TOXICITY ASSAY**

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## ABSTRACT

This study was conducted to identify the toxicity of Malaysian herbs towards the brine shrimp lethality assay. Eleven methanolic herbal extracts were evaluated with concentrations of 0.78, 1.56, 3.13, 6.25, 12.50, 25, 50, and 100 mg mL<sup>-1</sup> against the brine shrimp lethality assay. The highest brine shrimp toxicity (IC<sub>50</sub> = 0.02 mg mL<sup>-1</sup>) was observed in “Species 8”. Meanwhile, “Species 4” has the lowest brine shrimp toxicity (IC<sub>50</sub> = 30.40 mg mL<sup>-1</sup>) in this study. “Species 7” and “Species 9” did not exhibit lethality towards the brine shrimp for all concentration evaluated. From eleven methanolic herbal extracts that were evaluated, only nine methanolic herbal extracts exhibited toxicity towards the brine shrimp lethality assay with IC<sub>50</sub> values ranging from 0.02 to 30.40 mg mL<sup>-1</sup>. There were “Species 1”, “Species 2”, “Species 3”, “Species 4”, “Species 5”, “Species 6”, “Species 8”, “Species 10” and “Species 11” with IC<sub>50</sub> values of 19.47 mg mL<sup>-1</sup>, 16.20 mg mL<sup>-1</sup>, 11.14 mg mL<sup>-1</sup>, 30.40 mg mL<sup>-1</sup>, 8.02 mg mL<sup>-1</sup>, 15.47 mg mL<sup>-1</sup>, 0.02 mg mL<sup>-1</sup>, 7.06 mg mL<sup>-1</sup>, and 23.97 mg mL<sup>-1</sup> respectively.

## CHAPTER 1

### INTRODUCTION

Before the 1900's, herbal remedies were used extensively in the USA. From the 1900's to the 1960's such use dwindled (Elias *et al.*, 1995). Since the 1980's, many medical doctors began to join together herbal treatments with mainstream American health care. In many other countries such as Great Britain, France, India and Germany, herbal remedies have been available at the local drugstore for many years, prescribed by pharmacists and doctors alike, and in some cases, more frequently than pharmaceutical medications (Silberger, 1997).

Today, approximately 40% of the pharmaceutical and over the counter drugs available originally come from herbal sources (Clayton *et al.*, 1995). The application of herbal treatments have become common and focus more on heightening the body's ability to heal itself, as opposed to the symptom-specific over the counter and pharmaceutical medications (Elias *et al.*, 1995).

Traditionally, herbs have been considered to be mild, non-toxic and even harmless, mainly because of their natural origin. However, both adverse drug reactions