

## CHAPTER 1

### Introduction

#### 1.1 Introduction

Alkaloids are the secondary metabolites which have one or more nitrogen atom in the structure. They have been used for pharmacological<sup>[1]</sup> and agricultural applications<sup>[2]</sup>. The previous research reported that the chemical constituents of genus *Dasymaschalon* have been reported containing various types of secondary metabolites which are alkaloids<sup>[3-7]</sup>, acetogenin<sup>[8]</sup>, xanthones<sup>[9]</sup> and flavonol glycosides<sup>[10]</sup>. Moreover, it is stated that alkaloids are the major compounds in this genus. On our best knowledge, *D. obtusipetalum* showed anti-cancer<sup>[8]</sup> but there is no report about the chemical compositions in this species. In the process of alkaloid extraction and isolation, conventional technique, is normally used to extract the alkaloids. In order to decrease the use of harmful solvents in the process, the alternative technique to isolate the alkaloids that is Electrocoagulation technique (EC). The advantages of this technique uses less chemicals and organic solvents, especially those that are harmful to the environment.

In this research, the alkaloids from *D. obtusipetalum* will be isolated by EC in comparison with a conventional technique (solvent extraction). Using of solvent and percentage of alkaloids yield will be compared.

## 1.2 Research objectives

1. To isolate the alkaloids from leaves of *D.obtusipetalum*.
2. To compare the alkaloids extraction between electrocoagulation technique and conventional technique in term of the using of solvent and percentage of alkaloids yield.
3. To evaluate the biological activities of crude extract and isolated alkaloid.