

UNIVERSITI TEKNOLOGI MARA

**EXTRACTION OF *NEPETA* AND *ACTINIDIA*
SPECIES**

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ABSTRACT

This study is to introduce two types of species which have been used as cat attractants. They are *Nepeta* species and *Actinidia* species. *Nepeta* species comes from a family of *Lamiaceae* while the other species come from *Actinidiaceae* family. *Nepeta cataria* which is known as catnip is the species that involved in cat attractant agent. It is believed to have insect repellent activity against mosquitoes due to the presence of nepetalactone. *Nepeta* species is also believed to have antimicrobial activity against Gram positive bacteria such as *S.aureus*, *K. pneumoniae* and *S.typhii*. *Actinidia polygama* is the species used as cat attractant. Previous research found that *Actinidia* species have anti-obesity effect and anti-inflammatory activity. The research objectives had been achieved. The biological uses of both *Nepeta* and *Actinidia* species were well reviewed, based on the literatures. Crude extracts of *Actinidia* and *Nepeta* had been prepared by using three different polarity of three different solvents. In the methodology, the extraction and thin layer chromatography as well as phytochemical screening had been performed to examine the natural compounds of both species. Preparative TLC also had been done to isolate the target compound. The isolated compound were then subjected to the NMR spectroscopy. Based on the results obtained, it is found that *Nepeta* sample contains saponin and terpene without the presence of alkaloid and saponin. Meanwhile, in *Actinidia* sample, it contains alkaloid, saponin and terpene with the absence of phenol. The NMR spectrum of the isolated compound also showed the presence of mixture of two or more compounds. Unfortunately, the target compound which was nepetalactone could not be detected in the isolated compound. In future research, another technique of extraction such as column chromatography can be performed to obtain better result of isolation of the target compound.

CHAPTER ONE

INTRODUCTION

1.1 Introduction to *Nepeta* species

Nepeta is the genus of about 250 flowering plants from family *Lamiaceae*. Most of them are well known as cat attractant agent such as *Nepeta Grandiflora*, *Nepeta cataria*, *Nepeta supina*, *Nepeta stewartiana* and *Nepeta tuberosa*. The genus is native to Europe, Asia and Africa with the highest species diversity in the Mediterranean region east to China. They have sturdy stems with greyish-green heart shaped leaves. The flowers come in several colours with different species such as purple, blue, white and lilac. For example, *Nepeta cataria* L. has purple-spotted colour (Edewor & Usman, 2011), *Nepeta nuda* has pale violaceous to white colour (De Pooter et al., 1987) and *Nepeta nervosa* has blue flower.

Nepeta cataria L. (catnip) is one of the most widely used in the world. Instead of being used as catnip, this species also has been used as sedative, tranquilizer, digestive aid and menstruation promoter. Catnip also has been used as a tea, which gives antispasmodic action that would relieve muscle spasm.

A previous study has found the presence of flavonoid, coumarins and glycosides in the leaf extracts of this species which also leads to antimicrobial properties (Edewor & Usman, 2011).

Nepetalactones are the iridoid monoterpenoids, major steam volatile components found in the catnip. Catnip has been cultivated for various uses in culinary, ethnobotanical and ornamental (Ciaccio et al., 2013).