

UNIVERSITI TEKNOLOGI MARA

**DIVERSITY AND VARIABILITY OF SECONDARY
METABOLITES IN *GYNURA PROCUMBENS*:
A SYSTEMATIC REVIEW**

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ABSTRACT

Gynura procumbens from Asteraceae family are widely used as medicinal plant in Southeast Asia. Publications in English, Malay and Indonesian languages, abstract and full-text articles, *in vitro* and *vivo* studies and conference proceeding on secondary metabolites of *G. procumbens* are included in this study. A total of 43 articles were screened for their medicinal values and secondary metabolites. The result shows that *G. procumbens* exerts an anti-hyperglycemic, anti-ulcer, anti-inflammatory, anti-cancer, anti-hypertensive, anti-oxidant, hepatoprotective effect, immunomodulator, reproductive system enhancer and anti-angiogenic effect. Thus, this review on medicinal values and secondary metabolites of *G. procumbens* would provide extensive information about this plant and could be used as a reference for future researcher that has similar interest on this plant.

CHAPTER ONE

INTRODUCTION

1.1 Background of study

Malaysia is a well-gifted country that is rich in natural sources includes floras and faunas. As a mega-diverse country, two-third of Malaysia are covered with forest that are believed to exist 130 million years ago. The abundance of forest in Malaysia contributes to variety of medicinal plants that are valuable to humankind. The common species are from Asteraceae family such as *Gynura procumbens*. It has numerous medicinal values that make it popular among elderly in Malaysia such as anti-hypertensive, anti-hyperglycemic, anti-microbial and anti-ulcer activity. Variations of activity of *Gynura procumbens* are due to the availability of the constituents in the plant especially secondary metabolites. Secondary metabolites such as flavonoids play a significant role in determining the activity of this plant. Figure 1.1 shows the leaves of *Gynura procumbens*.



Figure 1.1: The leaves of *Gynura procumbens*
(Keng et al., 2009)