

Phytochemical Screening and Antioxidant Activity of Different Potencies of *Matricaria chamomilla* L. Essential Oil

Bernadiene Lee Pei Yi¹, Mahani Mahadi¹, Syarifah Syafiqah binti Syed Mustafa^{1,*}

¹Department of Pharmaceutical Sciences, Faculty of Pharmacy, University of Cyberjaya, Cyberjaya, Selangor, Malaysia

*Presenter's email: syfah9000@gmail.com

Abstract. Homeopathic medicines are medicinal substances that undergo serial dilution or potentization before being administered as the final product. Potencies 12C and above are indicated as ultra-high potencies and are administered according to clinical indication. Several homeopathic treatments have therapeutic effects on diseases associated with chronic inflammation. *Matricaria chamomilla*, or German Chamomile is a homeopathic remedy indicated for various inflammatory conditions such as infantile colic and teething pain. Studies have shown that *M. chamomilla* possesses chemical constituents that have antioxidant activity. This study aims to investigate the phytochemical compounds and the antioxidant properties of different potencies of *M. chamomilla* essential oil. Phytochemical screening was performed on *M. chamomilla* essential oil in different potentization: mother tincture, 6C, 30C and 200C. Meanwhile, antioxidant activity of *M. chamomilla* essential oil in mother tincture, 6C, 30C and 200C were assessed via DPPH and CUPRAC assay. The total phenolic content and total flavonoid content were carried out to investigate the connection between their antioxidant activities and the phytochemical compound present. The phytochemical screening revealed that only *M. chamomilla* mother tincture contains reducing sugars, phenolic compounds, flavonoids, tannins, saponins, quinones and cardiac glycosides. *M. chamomilla* potency 6C, 30C and 200C tested negative for all phytochemical screening tests. *M. chamomilla* essential oil mother tincture revealed higher results of total phenolic content of 87.65 ± 32.10 mg GAE/g, total flavonoid contents of 23.23 ± 10.81 mg QE/g, DPPH radical scavenging activity of $52.19 \pm 12.60\%$ and CUPRAC Trolox equivalent antioxidant activity of 224.17 ± 88.5 mg TE/g whereas among its potency 6C, 30C and 200C showed lower and constant results. In conclusion, *M. chamomilla* essential oil mother tincture and its 6C, 30C and 200C potencies have mild antioxidant activity.

Keywords: Antioxidant, German Chamomile, Homeopathic medicine