

Application of Plackett Burman design for antioxidant extraction from *Actinodaphne sesquipedalis* leaves

ABSTRACT

Actinodaphne sesquipedalis Hook. f. var. *Glabra* (Kochummen), also known as “Medang payung” by the Malay people, belongs to the Lauraceae family. In this study, a Plackett-Burman design was used to evaluate the significant extraction parameters in achieving maximum DPPH radical scavenging activity from ethanol leaves extract of *A. sesquipedalis*. Microwave-assisted extraction technique was employed using aqueous ethanol. The independent parameters were microwave power level (30–60 W), feed-to-solvent ratio (1:30 g/ml), irradiation time (30-90 s) and ethanol concentration (20–80%). Amongst the examined parameters, ethanol concentration, microwave power level, and irradiation/extraction time were significant, whereas, feed-to-solvent ratio was insignificant. Therefore, antioxidants from the ethanolic extraction leaves of *A. sesquipedalis* using microwave technique are significantly affected by ethanol concentration, irradiation time and microwave power.

Keyword: *Actinodaphne sesquipedalis*; DPPH radical scavenging activity; Microwave; Plackett-Burman design