

RESEARCH PAPER

ANTIMICROBIAL, ANTIOXIDANT AND ANTICANCER SCREENING OF *OCIMUM BASILICUM* SEEDS

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Basil seeds are traditionally believed to be used for therapeutic purpose to improve blood circulation, reduce inflammation, reduce the oxidation of cholesterol, and increase immune function and to control blood sugar level. In present study, basil (*Ocimum basilicum*) seeds were used as the raw material for evaluation of their bioactive compounds. Active components of the seeds were extracted using Soxhlet apparatus with two different solvents petroleum ether and methanol. Basil seeds extract exhibited strong antibacterial activity against nine pathogenic bacteria. The strongest inhibitory activity of basil seeds extract was observed against *Pseudomonas aeruginosa*, *Escherichia coli*, *Shigella dysenteriae* and *Klebsiella pneumoniae*. As per DPPH assay, the maximum free radical scavenging activity (73.85%) was shown by petroleum ether extract and the minimum activity (34.20%) was shown by methanol extract of basil seeds. Moreover, anticancer activity results clearly indicated that the basil seeds are a potential source of stable bioactive compounds.

Key words: Basil seeds, Antioxidant activity, DPPH assay, Antimicrobial activity.

INTRODUCTION

Since decades, plants and their parts are well known for their bioactive constituents responsible for the therapeutic effects (Jain *et al* 2011; Agarwal *et al* 2015; Shrestha *et al* 2016). Basil, also called as 'king of herbs', contains plenty of phytochemicals with significant nutritional as well as antioxidant capabilities and health benefits. Basil seeds are authenticated as *Ocimum basilicum* Linn, belonging to family 'Lamiaceae' which is an annual plant usually producing white-purple flowers (Daneshian *et al* 2009). It is a culinary herb consumed in high quantity due to the characteristic flavors it imparts (Naghbi *et al* 2005). This plant is found in many parts of the world especially in the tropical regions of Asia, Africa and Central and South America (Paton *et al* 1999). Basil seed is black in color and oval in

shape with mean dimensions of 3.11 ± 0.29 mm (length), 1.82 ± 0.26 mm (width) and 1.34 ± 0.19 mm (height). *Ocimum basilicum* dried seeds and water soaked seeds are presented in **Figure 1**.

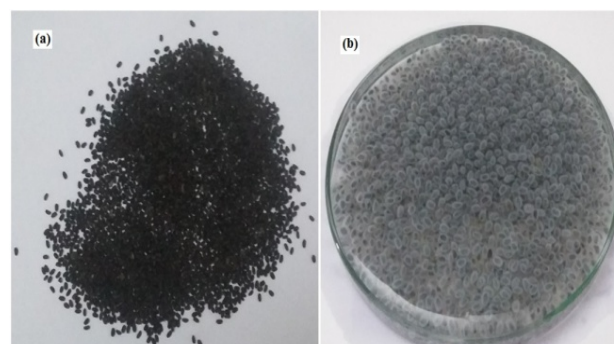


Fig. 1. *Ocimum basilicum* seeds (a) dried seeds (b) seeds soaked in water