

Antioxidant and antibacterial activity of (*Annona muricata* L.) leaf aqueous extract

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SUMMARY

Annona muricata L. (Soursop) of Annonaceae is a medicinal plant whose aqueous leaf extract was tested and the same possessed antioxidant properties including radical scavenging activity. The antibacterial activity was tested by agar diffusion method against *Escherichia coli*, *Enterobacter aerogens*, *Klebsiella pneumoniae* and *Streptococcus pneumoniae*. The minimum inhibitory (MIC) and bacterial concentration (MBC) values varied for the four bacterial genus tested.

Key Words : Antibacterial activity, Antioxidant activity, *Annona muricata*, DDPH, Minimum Inhibitory concentration, Minimum bacterial concentration

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Herbal remedies from medicinal plants have been used traditionally in many parts of the world where access to formal healthcare is limited (Adewole and Caxton-Martins, 2006). There are several reasons why the use of medicinal plants should be studied: herbal remedies may have recognizable therapeutic effects (Bailey and Day, 1989); they may also have toxic side-effects (Keen *et al.*, 1994). The use of medicinal plants provides an indication of beliefs about illness and its treatment that may conflict with beliefs of workers in the formal healthcare system (Morgan and Watkins, 1988).

Several studies have described the medicinal purposes of *Annona muricata* and outlined the social history of the plant's use (Ayensu, 1981). *A. muricata* L. family Annonaceae, commonly called 'Soursop' is a small, upright evergreen tree growing 5 to 6 meters in height. Young branchlets are rusty-hairy, the malodorous leaves, normally evergreen, are alternate, smooth, glossy, dark green on the upper surface, lighter

beneath, oblong, elliptic or narrow-obovate, pointed at both ends, 6-20 cm long and 2-6 cm wide. The flowers are borne simply, and may emerge anywhere on the trunk, branches or twigs. They are short stalked, 4-5 cm long, plump, and triangular or conical; the 3 fleshy, slightly spreading, outer petals yellow-green, with 3 closet inner pale-yellow petals (Vasquez, 1990; de Feo, 1992). The fruit is more or less oval or heart-shaped, sometimes irregular, lopsided or curved, due to improper carpel development or insect injury. The size ranges from 10-30 cm long and upto 15 cm in width. The fruit is compound and covered with reticulated leathery - appearing but tender, inedible bitter skin from which protrude a few or many stubby or more elongated and curved soft, pliable 'spines'. The tips break off easily when the fruit is fully ripe. The skin is dark-green in the immature fruit, becoming slightly yellowish-green at maturity and the fruit is soft to touch. Its inner surface is cream-coloured and granular and separates easily from the mass of snow-white, fibrous, juicy segments - much like flakes of raw fish - surrounding the central, soft pithy core. In aroma, the pulp is somewhat pineapple-like, but its musky, subacid to acid flavour is unique (Schultes and Raffauf, 1990). Most of the closely-packed segments are seedless. In each fertile segment, there is a single oval, smooth, hard, black seed, 1.25-2.0 cm long and a large fruit may contain from a few dozen to 200 or more seeds (Morton, 1980). The plant is indigenous to

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