

**ANTIBACTERIAL AND ANTIOXIDANT ACTIVITY OF  
*COCOS NUCIFERA* MESOCARP EXTRACT ON  
PATHOGENIC BACTERIA**

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## ABSTRACT

The coconut plant *Cocos nucifera* (family Arecaceae) is considered as an important fruit crop in tropical countries. It is commonly available plant with wide variety of applications in food, drinks, fibres, building materials and various chemicals finding their way into a huge range of modern day products. Being highly nutritious coconuts have also been studied for medicinal qualities. Thus, the objective of this research is to measure the antibacterial activity of various concentration plant extracts of *Cocos nucifera* against Gram-positive bacteria (*Staphylococcus aureus*) and Gram-negative bacteria (*Escherichia coli*). Next, to determine the antioxidant activity of *Cocos nucifera* extracts using DPPH assay. The potential of *Cocos nucifera* husk as an antimicrobial agent was explored in this study. The antimicrobial activity of the coconut husk and the antibiotic susceptibility (gentamycin 10 µg) were done on Mueller Hinton agar using disc diffusion method. The extraction of powder was carried out by using rotary evaporator apparatus using 80 % methanol and distilled water (aqueous) as solvent. Among these two extracts, no inhibition zone was formed, but only gentamycin (positive control) shows zone of inhibition with  $18.17 \pm 4.36$  mm against *E. coli* and  $22.00 \pm 3.01$  for *S. aureus* bacteria. Meanwhile, for the antioxidant activities of the methanolic mesocarp extracts and ascorbic acid, standard also expressed and quantified in terms of inhibition percentage (IP). In the present study, the mesocarp extract was proved to be a few times less powerful to scavenge DPPH radicals compared with the standard antioxidant, ascorbic acid with the value of IC<sub>50</sub> 0.491 while methanol extract shows IC<sub>50</sub> value of 0.654. This study shows that *Cocos nucifera* husk of methanol and aqueous extract does not has the ability to inhibit the growth of specific bacteria which are *E. coli* and *S. aureus*. For the antioxidant activity, it shows methanol extract of mesocarp has less antioxidant than standard, ascorbic acid.