

ANTIOXIDANT AND ANTIBACTERIAL ACTIVITIES OF LOW MOLECULAR WEIGHT CHITOSAN

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ABSTRACT

The present study was to investigate the antioxidant and antibacterial activities of low molecular weight (LMW) chitosan prepared by oxidative degradation method involving hydrogen peroxide. The antioxidant activity of the LMW chitosan was determined by DPPH radical scavenging, total reducing power and lipid peroxidation inhibition activities. The antibacterial activity was tested against gram negative (*Escherichia coli*, *Salmonella typhimurium*) bacteria, and gram positive (*Listeria monocytogenes*, *Staphylococcus aureus*) bacteria. The results showed that the LMW chitosan exhibited higher antioxidant and antibacterial activities than the native chitosan. These observations suggested that the LMW chitosan can be used as a natural bioactive compound against bacteria and oxidation.

Keywords: *Chitosan, shrimp waste, antioxidant, antibacterial activity*

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