Synthesis, Characterization, Antioxidant Activity, and Toxicity Properties of Tripolyphosphate Crosslinked Chitosan

Title	Synthesis, Characterization, Antioxidant Activity, and Toxicity Properties of Tripolyphosphate Crosslinked Chitosan
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Abstract	Chitosan is biopolymer obtained from chitin deacetylation reaction. Chitin is a constituent of shrimpsÃƒÂ¢Ã¢Â‚Â¬Ã¢Â„Â¢ outer shell. Chitosan modification using crosslinker agent could increase the active groups and stabilize the physical character. One of non-toxic crosslink agents was tripolyphosphate. This study aimed at synthesizing tripolyphosphate crosslinked chitosan (TPP-Cs) to test the antioxidant and toxicity. Synthesizing tripolyphosphate chitosan was conducted using ionic gelation method. The antioxidant activity test was studied from DPPH radicals scavenging and the ability to inhibit linoleic acid oxidation. The toxicity test was using BSLT (Brine Shrimp Lethality Test) method and Artemia salina leach nauplii. The study showed that TPP-Cs could be synthesized from pink shrimp and showed antioxidant activity. The activity was due to amino and hydroxyl groups. The BSLT method showed that TPP-Cs had the potential to be applied for antibacterial, antivirus, or anticancer products. ÃƒÂ,Ã,Â
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