

## UTILIZATION OF FUCAN-MAGNETITE COMPOSITES FOR IMMOBILIZATION OF MILK CLOTTING ENZYMES

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Fucans are sulfated polysaccharides that possess pharmacological properties such as anticoagulant, anti-tumor, anti-viral and anti-adhesive activities. In this work fucan was extracted from *Sargassum cymosum* brown algae and magnetite particles were synthesized with this polysaccharide. A periodate oxidation method was used to activate the magnetic fucan. Oxidated fucan-magnetite composites were utilized as support for enzyme immobilization. The enzyme used for immobilization on this support was milk clotting enzyme constituted of chymosin and pepsin mixture. After extraction of fucan, the concentration of total sugar was determined by phenol-sulfuric acid method that showed 6.76 mg/mL of sugar. 0.5g of fucan was used for magnetization. Fucan-magnetite composites were attracted by introducing in a magnetic field of 6000 Oe. The activity of enzyme immobilized on magnetic fucan was estimated using 1% azocasein as substrate. The activity of immobilized enzyme was 2.2 U/mL and the activity of free enzyme was 1.17 U/mL. Therefore, it can be suggested that the polysaccharides fucan are good support for milk clotting enzyme immobilization.

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