

## Studies on the interaction of scleraldehyde in stabilizing collagen for biomedical applications

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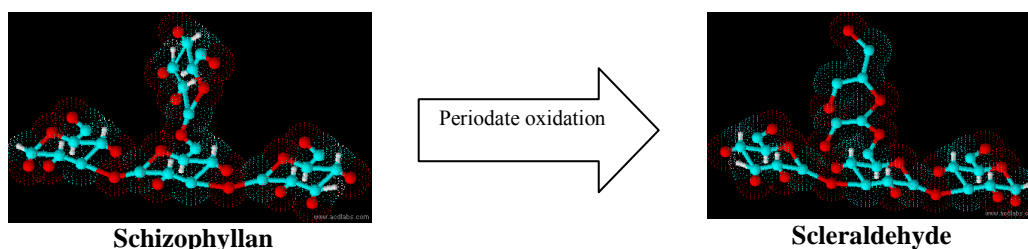
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### ABSTRACT



The present study investigates on the interaction of scleraldehyde with type I collagen membrane. Schizophyllan is a natural polysaccharide, produced by fungi of the genus *Schizophyllum*. Periodate oxidation specifically cleaves the vicinal glycols in scleraldehyde to form their dialdehyde derivatives. The formation of the inter and intra interaction between scleraldehyde and the collagen fibres was resulted in significant increase in thermal and enzymatic stability to collagen. Crosslinking efficiency of scleraldehyde was found to increase with concentration of scleraldehyde. Scleraldehyde interacted collagen membrane exhibited an increase in thermal stability by 27°C at pH 8. The gelling time of collagen fibrils found to decrease with increase in concentration of scleraldehyde due to shift in nucleation centre. Swelling degree of collagen membrane also found to decrease with increase in concentration of scleraldehyde. Scleraldehyde treated collagen membrane exhibited 93% resistance to enzymatic treatment. The modified colalgen membrane exhibited non-toxicity towards the fibroblasts cells.