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Thiolation of jackfruit gum and its evaluation as a mucoadhesive polymer

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Mucoadhesion is the process of binding a material to the mucosal layer of the body. Utilizing both natural and synthetic polymers, mucoadhesive drug delivery is a method of controlled drug release which allows for intimate contact between the polymer and a target tissue. It has the potential to increase bioavailability, decrease potential side effects and offer protection to more sensitive drugs such as proteins and peptide based drugs. Thiolation of jackfruit gum polysaccharide was carried out by esterification with thioglycolic acid. Thiolation was confirmed by Fourier-transformed infrared spectroscopy. Jackfruit-thioglycolic acid conjugate were found to possess 468.08 mM of thiol groups as determined by Ellman's method respectively. Comparative evaluation of mucoadhesive property of irbesartan loaded buccal pellets of jackfruit gum and thiolated jackfruit gum using chicken buccal pouch membrane revealed higher *ex vivo* bioadhesion time of thiolated jackfruit gum as compared to jackfruit gum. Improved mucoadhesive property of thiolated jackfruit gum over the jackfruit gum can be attributed to the formation of disulfide bond between mucus and thiolated jackfruit gum. *In-vitro* release study conducted using 0.1N HCl buffer revealed a sustained release profile of irbesartan from thiolated jackfruit pellets as compared to jackfruit pellets. In conclusion, thiolation of jackfruit gum improves its mucoadhesive property and sustained the release of irbesartan over a prolonged period.

Biography

Vivek Puri has completed his Master's Degree from Chitkara University. He is currently pursuing PhD from Chitkara College of Pharmacy at the same university. He has been awarded at several national and international conferences as a Best Presenter. He has communicated more than 5 papers in reputed journals and has been serving as an Assistant Professor at Chitkara University in Industrial Teaching at Dr. Reddy's Laboratory.

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