Buccal drug delivery of pravastatin sodium.

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The purpose of this study was to develop and optimize formulations of mucoadhesive bilayered buccal tablets of pravastatin sodium using carrageenan gum as the base matrix. The tablets were prepared by direct compression method. Polyvinyl pyrrolidone (PVP) K 30, Pluronic(R) F 127, and magnesium oxide were used to improve tablet properties. Magnesium stearate, talc, and lactose were used to aid the compression of tablets. The tablets were found to have good appearance, uniform thickness, diameter, weight, pH, and drug content. A 2(3) full factorial design was employed to study the effect of independent variables viz. levels of carrageenan gum, Pluronic F 127 and PVP K30, which significantly influenced characteristics like in vitro mucoadhesive strength, in vitro drug release, swelling index, and in vitro residence time. The tablet was coated with an impermeable backing layer of ethyl cellulose to ensure unidirectional drug release. Different penetration enhancers were tried to improve the permeation of pravastatin sodium through buccal mucosa. Formulation containing 1% sodium lauryl sulfate showed good permeation of pravastatin sodium through mucosa. Histopathological studies revealed no buccal mucosal damage. It can be concluded that buccal route can be one of the alternatives available for the administration of pravastatin sodium.