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Buccal Patch: A Novel Approach for Sustained Drug Delivery – A Comprehensive Review

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Abstract: *Buccal patches represent an innovative and effective platform for sustained drug delivery, offering advantages such as improved bioavailability, prolonged therapeutic effects, and patient compliance. These patches utilize the buccal mucosa as a non-invasive route, bypassing first-pass metabolism and gastrointestinal degradation. This review explores the anatomy and physiology of the buccal mucosa, various types of buccal drug delivery systems, formulation aspects, polymers used, evaluation parameters, and therapeutic applications. Furthermore, challenges associated with buccal patches and emerging technologies such as nanotechnology and bio-responsive polymers are discussed. Future research directions emphasize advancements in permeability enhancers, smart polymers, and personalized medicine approaches to optimize buccal drug delivery.*

Keywords: Buccal patch, sustained drug delivery, mucoadhesion, polymers, bioavailability, nanotechnology, permeation enhancers, formulation development, controlled release

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