

Taste-Masking Techniques in Chewable Tablets: A Comprehensive Analysis

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Abstract: *This comprehensive review provides an extensive analysis of taste-masking techniques in chewable tablets within the realm of pharmaceutical sciences. It encompasses an in-depth exploration of diverse methodologies, excipients, evaluation techniques, regulatory perspectives, and future directions, emphasizing their collective impact on enhancing patient acceptability and therapeutic efficacy. The review begins by elucidating the significance of taste-masking in chewable tablet formulations, recognizing its crucial role in mitigating the challenges associated with bitter or unpleasant taste attributes inherent in active pharmaceutical ingredients (APIs). Various approaches, including coating technologies such as film and enteric coatings, encapsulation methods like microencapsulation and nanoencapsulation, and the strategic use of flavoring agents and sweeteners, are thoroughly evaluated for their effectiveness in masking undesirable tastes. Furthermore, the role of pharmaceutical excipients, including binders, disintegrants, fillers, and flavor-masking agents, in taste modification for chewable tablets is extensively discussed. Analytical techniques for taste assessment, encompassing in vitro methods such as electronic tongues and dissolution testing, along with in vivo evaluation methods like human taste panel studies and pediatric taste assessments, are critically examined to provide a comprehensive understanding of taste-masking efficacy. Moreover, this review delineates regulatory considerations governing taste-masking in pharmaceutical products, emphasizing safety aspects, stability concerns of taste-masking agents, and the pivotal role of patient compliance and acceptance in relation to taste-masked chewable tablets. Finally, it anticipates future perspectives and innovations, exploring emerging technologies, potential areas for further research and development, and predictions for the evolving landscape of taste-masking in chewable tablets. Overall, this review serves as a comprehensive guide, offering insights crucial for formulation scientists, researchers, regulatory bodies, and healthcare practitioners involved in optimizing taste-masking strategies to enhance patient outcomes in pharmaceutical formulations.*

Keywords: Taste-masking, Chewable tablets, Excipients, Patient acceptability, Therapeutic efficacy, Evaluation methods, Regulatory considerations, Future perspectives.

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