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Praziquantel Chewable Gels as a New Pediatric Dosage Form †

María Alejandra González [1,2,*], María Verónica Ramírez-Rigo [1,2], Noelia Gonzalez Vidal [2,3]

[1] Planta Piloto de Ingeniería Química (PLAPIQUI) CONICET-Universidad Nacional del Sur. Bahía Blanca, Argentina; alejandra.gonzalez@uns.edu.ar (MA.G.); vrrigo@plapiqui.edu.ar (M.V.R.R.)
[2] Departamento de Biología, Bioquímica y Farmacia. Universidad Nacional del Sur. Bahía Blanca, Argentina; nlgvidal@uns.edu.ar (N.G.V.)
[3] Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Argentina
* Correspondence: alejandra.gonzalez@uns.edu.ar (M.A.G.);
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Abstract: Chewable gums have important advantages over conventional pharmaceutical forms, both solid and liquid since they remain solid during storage but become liquid within a few minutes of administration, leading to a fast drug release. This work aimed to develop chewable gums of Praziquantel (PZQ) as an alternative to tablets, which currently constitutes the only available, but not optimal, dosage form for pediatric patients. The chewing gels were prepared by a molding methodology, varying the percentage of gelatin and the dose of PZQ, which was incorporated as nanocomposite microparticles previously dispersed in water. The formulations were characterized in terms of moisture content, water activity, pH, texture, disintegration time, and drug content. The obtained formulations showed similar moisture content, water activity, and pH results. Concerning texture parameters, it was observed that gelatin content affects hardness, springiness, and gumminess. Disintegration results showed a close relationship with hardness and, therefore, with the amount of gelatin added, with complete disintegration times between 15 and 24 minutes. Finally, regarding drug content, the results (91.6-97.5 %; RSD 4.1%) indicated that there was no significant loss of PZQ during the production processes and that the variability was acceptable. In conclusion, a new dosage form containing PZQ was obtained through a simple and low-cost methodology. These chewable gels could be an interesting alternative to fill therapeutic gaps in the treatment of pediatric patients.

Keywords: Praziquantel; chewable gels; nanocomposite microparticles.

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Conflicts of Interest

The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.