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Formulation of a natural intraoral dispersible film (IDF) for intraoral delivery of various natural drugs using edible rice paper film as the carrier vehicle

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Background: At present, pharmaceutical researchers are focusing on instantaneous intraoral dispersible technologies as novel drug delivery systems because of their outstanding advantages over the traditional oral and parenteral routes of drug administration. Most essential natural drugs have low oral bioavailability due to extensive first pass metabolism and pre systemic degradation in the GIT.

Purpose of Study: This research intends to address these problems by formulating a cheap, intraoral rice paper Intraoral Dispersible Film (IDF). IDFs are potent and could improve bioavailability of natural drugs.

Methods: In this study, formulation was optimized using the experimental factorial design. The IDFs were loaded with model natural anticancer drugs Resveratrol and Curcumin with low oral bioavailability. They were evaluated for thickness, folding endurance, swelling behavior because these relate to drug release properties. Permeation was also evaluated using the pig mucosal membrane mounted on a Franz diffusion cell, and taste testing was done to determine acceptability using a taste panel.

Results: Sixteen formulations showed variations in disintegration time, thickness, tensile strength and permeation profiles. My key finding is, ex vivo release profiles of the optimized formulation revealed first order release and later zero order.

Conclusions: Therefore, it is evident that rice paper IDF could efficiently deliver natural drugs into the blood.

Biography

Mukasa Eliphaz has worked at Medipharm Industries EA Ltd. Uganda factory for 15 years. He is specialized in cGMP and ORS Manufacture. He has studied at Mulago Hospital School of Dispensing for a Diploma Pharm in 1988. He taught at Mulago Paramedical School for 2 years. He has attended a Clinical Instructor's course at Mbale Health Manpower Development Center in 1999 and worked as an Assistant Drugs Inspector at Uganda National Drug Authority for 7 years. He has also attended NIPER Chandigarh India for Assessment of quality of Pharmaceuticals. He did his BPharm in 2012 at NMMU Port Elizabeth South Africa. He has worked at Johannesburg General Hospital Charlotte Maxeke for his Pharmacist Internship in 2013. Presently he is an MPharm student at the University of the Witwatersrand, SA 2013 to 2015.

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