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Editorial

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Development and Characterization of Enteric Coated Pectin Pellets Containing Mesalamine and Saccharomyces boulardii for targeted delivery to Colon site.

Editorial

The objective of this study was to develop and characterize enteric-coated pectin pellets containing mesalamine and S.bulardii for specific colon targeted drug delivery for ulcerative colitis management. Pellets of mesalamine and S.bulardii were produced by extrusion-spheronization technique by using pectin and microcrystalline cellulose and coated with Cellulose acetate phthalate. The pellets were evaluated for morphology, micromeritic properties as well as through fourier transform infrared spectroscopy, differential scanning calorimetry and X-ray diffraction techniques and the results confirmed that all the ingredients of the pellets were compatible with each other without revealing any specific interaction. The dissolution profiles of uncoated and coated pellets were examined at pH 1.2, 6.8 and 7.4 with and without rat cecal content. Further pharmacokinetic studies revealed a lower value of maximum concentration in the case of cellulose acetate phthalate coated pellets formulation in comparison to uncoated ones which, evidenced the lower systemic exposure of the drug. Finally, to ensure the therapeutic activity of the selected formulation, a 2,4,6- trinitrobenzene sulfonic acid-induced colitis model was used. Colon/ Bodyweight ratio, myeloperoxidase, lipid peroxidase level, glutathione activity and histological evaluation were performed in the colitis model. Animal experiments revealed that coated pellets of mesalamine and S.bulardii significantly improved the diseased conditions in Wistar rats. The confirmation of which was done by the gain in weight, clinical improvement in macroscopic and microscopic factors of induced colitis. These findings ensure that coated pellet formulation has promising potential for targeted drug delivery of mesalamine and S.bulardii to the colon as well as to improve the viability of probiotics and enhancement in the effectiveness of mesalamine in management of ulcerative colitis.