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Formulation and Evaluation of Roflumilast Fast dissolving Tablets employing Lepidium sativum mucilage using 2^3 Factorial design

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Abstract : To evaluate fast dissolving tablets for Roflumilast employing with novel superdisintegrant using lepidium sativum mucilage by using 2^3 factorial design.The physical, chemical and micromeritic studies were evaluated for the prepared mucilage. To estabish fast dissolving tablets of Roflumilast with lepidium sativum mucilage ie a superdisinitegrant in different ratios by using direct compression method employing 2^3 factorial design. All the fast dissolving tablets were evaluated pre compression and post compression parameters like dissolution efficiency (DE%) percent of drug dissolved at 5 min (PD5). The Lepidium sativum mucilage was to be found fine,free flowing crystaline powder and excellent swelling nature in water. The FTIR and DSC studies were indicated to no interactions between roflumilast and Lepidium sativum mucilage. All the formulation batches shows good quality with regrad to drug content (98±0.092 to 100±0.026)hardness(3.4±0.43 to 3.6±0.64)friability (0.21±0.04 to 0.88±0.42). The optimized formulation batch shows less disintegrant time (52±0.24). The *In–Vitro* wetting time was less (i.e., 90s) in optimized formulation F2. The water absorption ratio of the formulated tablets was found to be in the range of (90.3±0.027). The cumulative drug dissolved in the optimized formulation F2 was found to be (99%) in 5 min. Lepidium sativum mucilage was found to be a super disintegrant which enhanced the dissolution efficiency when combined with Crospovidone, croscarmellose sodium, and hence it could be used in the formulation of fast dissolving tablets to provide immediate release of the contained drug within 5 min.

Keywords : Optimization,fast dissolving, superdisintegrant.

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