Formulation and optimization of domperidone fast dissolving tablets by using novel co-processed superdisintegrants

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Objective: In the present study, novel co-processed superdisintegrants were developed by various methods. Fast dissolving tablets of domperidone were prepared using the above co-processed superdisintegrants and evaluated for pre-compression and post compression parameters.

Methods: Novel co-processed superdisintegrants were prepared by solvent evaporation, microwave and lyophilisation method using crospovidone and sodium starch glycolate in different ratios for use in the fast dissolving tablet formulations. The developed excipients were evaluated for angle of repose, Carr’s index and Hausner’s ratio in comparison with physical mixture of superdisintegrants. Fast dissolving tablets of domperidone were prepared by direct compression technique. Tablets were evaluated for its pre-compression and post compression parameters. In the investigation, a $3^2$ full factorial design was used to investigate the combined influence of two formulation variables: amount of sodium starch glycolate and crospovidone.

Results & Discussion: The angle of repose of the developed excipients was found to be <30º, compressibility (%) index in the range of 5.86 to 33.03 % and Hausner’s ratio in the range of 1.06-1.49. The concentration was optimized at which FDT disintegrate within 30 seconds, friability 0.40% and having drug release 95%. A response surface plot is also presented to graphically represent the effect of the independent variables on the disintegration time, percentage friability and percent drug release. Optimized FDT should be prepared using an optimum concentration of sodium starch glycolate and crospovidone. Short-term stability studies indicated that there are no significant changes in drug content and in vitro disintegration time.

Biography

Shailesh Sharma, has completed his Ph.D. at the age of 29 years from Punjab Technical University. He is a gold medalist in M. Pharm course from MLS University. He has also received young scientist award for his Ph.D. work. He is an Assistant Professor of Pharmaceutics in a Pioneer pharmacy institute ASBASJASM College of Pharmacy, BELA (Ropar) Punjab India. He has published more than 49 papers in reputed journals and has been serving as an editorial board member of repute and examiner to number of universities.

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