



ChemTech

International Journal of ChemTech Research

CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.10 No.1 pp 316-321, 2017

Formulation of *Orally Dissolving Film (ODF)* Metoclopramide Using HydroxyPropylMethylCellulose and Polyvinyl Alcohol with Solvent Casting Method

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Abstract: Orally Dissolving Film (ODF) is a new drug delivery systems as an alternative medication for geriatric and pediatric patients who have difficulty in consuming conventional dosage form such as tablets and capsules. HPMC is known to have good film forming properties and good acceptability but are often combined with other film-forming because it is a bit fragile and have slightly rough surfaces. PVA produced films with smooth surfaces, not brittle but using them alone produce sticky film. The combination of HPMC and PVA can produced ODF with better characteristics. ODF formulation was prepared by solvent casting method using HPMC and PVA polymer (HPMC:PVA) with a ratio of each F1 (3:0), F2 (2:1), F3 (1.5:1.5), F4 (1:2) and F5 (0:3). Evaluation tests of the films were organoleptic evaluation, weight uniformity, film thickness, surface pH, swelling index, content uniformity, disintegration time and dissolution. The results of the test were statistically analyzed to determine the effect of polymer concentration with disintegration time and dissolution of ODF. The results showed that the use of a single HPMC produce films with rough surfaces, the use of a single PVA produce sticky film and the combination of HPMC and PVA produced films are smooth and not sticky. From all five formulas, F4 (HPMC:PVA = 1: 2) showed the best characteristics of film, where the film is smooth and not sticky, swelling index of 20 seconds was 221%, disintegration time was 37 seconds, as well as the cumulative percent of dissolved drug of 45 seconds was 92,20%.

Keywords: *Orally Dissolving Film (ODF), metoclopramide, HPMC, PVA, solvent casting.*