**ABSTRACT**

The main aim of this work was to formulate and study mucoadhesive buccal tablets of Valsartan using various suitable bioadhesive polymers such as CP 934, HPMC K4M, Na CMC, and HEC at different ratios (1:1, 1:2, and 1:3). A backing layer of ethyl cellulose was used which is impermeable in nature. Nine differentformulations of Valsartan were prepared by direct compression method. The preparedtablets were characterized by swelling studies, % matrix erosion, surface pH, bioadhesive properties, In-vitro drug dissolution and In-vitro diffusion studies. All the formulations gave the satisfactory results. It was found that swelling index was proportional to CP and Na CMC content. As the Na CMC content increases the swelling index also increased. The surface pH of all formulations was found to be satisfactory, and values were in between the range of 5-7 pH, hence no irritation to buccal cavity is assumed. The drug release was depended on the ratio of polymer and also the type of polymer used in the combination. Tablets containing CP: HEC in the ratio 1:3 has shown maximum percentage of In-vitro drug release as well as In-vivo diffusion through buccal mucosa. The drug release was found to be zero order release. The formulation F9 was considered as the optimized formulation based on good bioadhesive strength, In-vitro dissolution drug release of 98.47 ± 0.49%, In-vitro drug diffusion of 81.16 ± 0.48% for 8 h. The formulation F9 containing CP: HEC in the ratio 1:3 showed sustained release of drug for 8 h with achieving the desired therapeutic concentration. Stability study was carried out as per ICH guidelines and no major change was observed.

**Key words**: Mucoadhesion, HPMC K4M, Na CMC, Valsartan, CP, HEC