**ABSTRACT**

Sertraline hydrochloride, is a selective serotonin reuptake inhibitor (SSRI), used as antidepressant, antiobsessional agent and antipanic agent. It has only 44% oral bioavailability as it undergoes extensive hepatic first pass metabolism. Therefore, the present investigation is concerned with the development of the fast dissolving buccal patches to increase the bioavailability of the drug and to make drug available as soon as possible. Various fast dissolving buccal patches of sertraline hydrochloride were developed by solvent casting method using gelatin as a natural polymer, mannitol as a filler and glycerol as a plasticizer in different proportions and tween 80 as a permeation enhancer, menthol as a flavoring agent and distilled water and methanol as solvents. All formulations showed good physico-chemical properties, in vitro drug release and in vitro drug diffusion. The most satisfactory formulation (P3) had showed 100% drug release within 20 min and 80% drug diffusion with sufficient bioadhesive strength (5.86 g) and bioadhesive time (20 min). Swelling studies indicated significant water uptake and contributed in drug release. The most satisfactory formulation was stable during stability studies conducted for 60 days as per ICH guidelines. It showed no significant changes in the physicochemical parameters, in-vitro release pattern, in-vitro diffusion studies and bioadhesive studies.

**Key words:** Sertraline hydrochloride, fast dissolving patch/film/disc, buccal drug delivery system and oral mucoadhesive drug delivery system.