Materials and method

Sodium alginate (Seco, Lot. No. 7/6 , Germany), Theophylline (Fluka, Germany) 200 mg were used as matrix and active ingredient respectively. By wet granulation method with 10 %PVP K-30 as binder and absolute alcohol as granulating liquid. The tablets were made using single punch tablet machine (Yeo Heng, Bangkok) with the ratio of drug/ matrix was 1:1,1:2 and 1:3 respectively. The tablets were 1/2 inch diameter and controlled hardness between 5-7 kg. The percent friability was less than 0.4. The weight variations were in acceptable range.

Viscosity studies. Using Oswald viscometer (A.H. Thomas Co., PA., USA) to determine viscosity at different pH.

Dissolution studies The drug release test of the tablets was carried out according to the USP apparatus II in the simulated gastric fluid (pH 1.2), Phosphate buffer pH 4.5, 6.5 and intestinal fluid pH 7.5 without enzymes. The dissolution medium was controlled at 37°C and stirred constantly at 50 rpm (Hanson,USA). Samples of tablets equivalent to 200 mg theophylline were taken for dissolution test. The concentration of theophylline was determined spectrophotometrically at 275 nm. (Beckman DU-64 , USA) All experiments were performed in triplicate and the mean was presented.