ABSTRACT

In this research, we study QSH (quince seed hydrogel) for the development of controlled drug release from theophylline tablets. Drugs excipients morphology and compatibility were studied by FTIR. Tablets swelling was checked in distilled water, pH 6.8, 1.2, and 7.4, and results show more swelling was noted in pH 7.4 and 6.8 while less swelling was noted in pH 1.2. second-order kinetics was shown by these swellings. In sodium chloride and potassium chloride swelling of tablets was checked and shows it depends upon the concentration of the salt. Tablets swelling and deswelling capacity were checked in distilled water, ethanol,1.2, 7.4, and 6.8 buffers solution. From the theophylline tablets, drug release was studied in distilled water pH 7.4 and 6.8 and shows the inverse relation between QSH and tablet matrix and observed super case (II) transport and zero order-kinetics. The study of hemocompatibility shows they are not thrombogenic and not hemolytic. Results clearly show that QSH can be used as controlled drug release and stimuli-responsive.