as showed in Figure 3 also revealed that plasticizer at both the levels of polymer did not have any influence on drug loading efficiency, *in vitro* drug release and disintegration time. But the films were tackier when the plasticizer concentration is at high level because the plasticizer softens the polymer.[20,21]

Drug excipient compatibility studies

Drug excipient compatibility studies were carried out by FTIR, and the results were given in Figure 4a and b. The FTIR spectra confirmed the absence of drug excipient interaction.

Stability studies

The films did not show any statistically significant change in appearance, % drug content, and disintegration time on storage. The % drug content and disintegration responses were same as that of the responses before the storage. This indicated that X_2 film was stable after storage.

CONCLUSION

From the above experimental results, it can be concluded that sodium alginate had good film forming properties and could be used for the preparation of OSF. With increasing polymer concentration, the drug loading efficiency and the rate of drug release were decreased, and this was confirmed from the interaction plots and calculating the factor effects. Plasticizer concentration did not have statistically significant influence on any of these responses at both the levels of polymer conc. Maximum drug loading efficiency was found in X_2 formulation and the rate of drug release followed first order kinetics.

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Nil.

Conflicts of interest

There are no conflicts of interest.

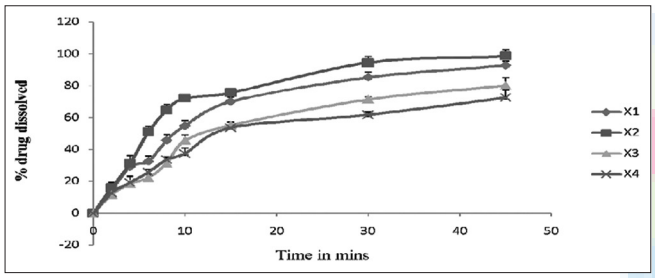

Figure 1: A plot of cumulative percent drug released versus time ($n = 3$, mean ± standard deviation)

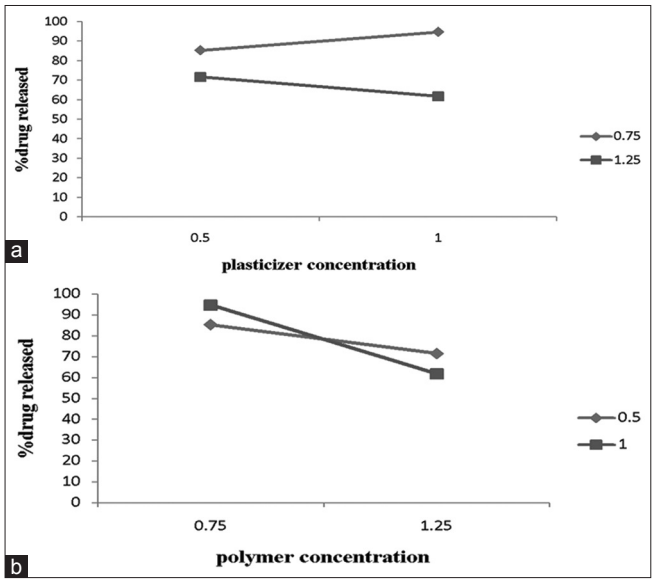

Figure 3: (a) Interaction plot showing the influence of plasticizer concentration on drug release (b) Interaction plot showing the influence of polymer concentration on drug release

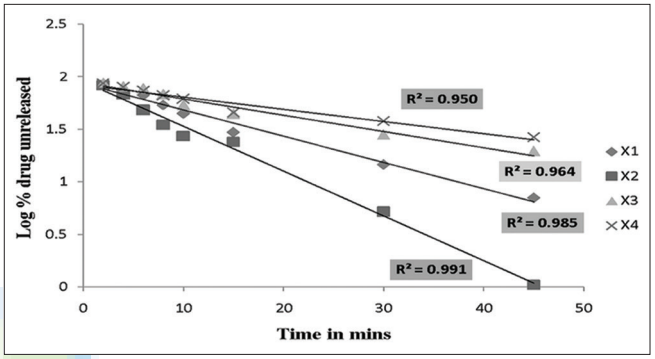

Figure 2: Log percent drug unreleased as a function of time ($n = 3$, mean ± standard deviation)

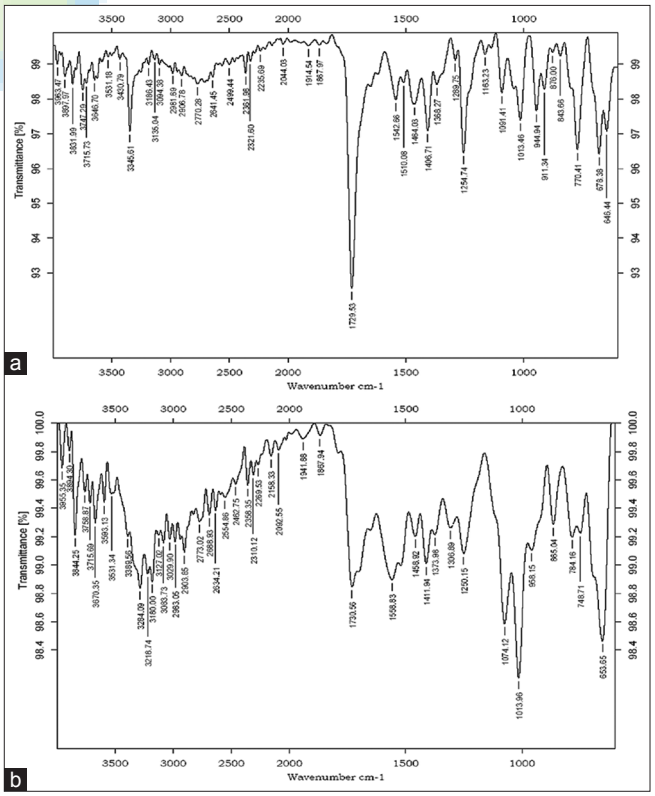

Figure 4: (a) Infrared spectrum of zolmitriptan. (b) Infrared spectrum of X_2 formulation

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