Development, Evaluation and Optimization of Baclofen Oral Floating Tablet

Akhilesh V. SINGH [1]*, R.D. PANDEY [2], L.K. NATH [1] & Anudwipa DAS [1]

[1] *Department of Pharmaceutical Sciences, Dibrugarh University, Assam, India-786004*
[2] *Institute of Technology & Management (ITM-GIDA), Gorakhpur, UP, India-273013*

SUMMARY. The present investigation concerns the development of a floating matrix tablet, which after oral administration prolong the gastric residence time and increases bioavailability of drugs, which are predominantly absorbed from gastric region .With this aim, floating dosage form containing baclofen as drug, and different grades of HPMC as release retarding polymer was prepared. Sodium bicarbonate and citric acid were used as gas generating agents. Some factors were investigated concerning the effect of release retarding polymer on drug release behaviors like $t_{50\%}$ and $t_{90\%}$. A 3^2 factorial design was applied to optimize the drug release profile. The amounts of HPMC K4M(X_1) and HPMC K100M (X_2) were selected as independent variables. The time required for 50% ($t_{50\%}$) and 90% (t90%) drug dissolution were selected as dependent variables. The results of full factorial design indicates that moderate amount of both the release retardant polymer, controlled the release behavior. It can be concluded from release kinetic models that the release followed Higuchi model, as the correlation coefficient (R^2 value) was high in all the evaluated models. The release mechanism followed non-fickian diffusion as the release exponent (n-value) was >0.5 in all the optimized formulations.

* Author to whom correspondence should be addressed. *E-mail:* akhileshvikram@gmail.com