

STUDIES ON THE APPLICATION OF ARTIFICIAL NEURAL NETWORKS IN THE DEVELOPMENT AND EVALUATION OF DIRECTLY COMPRESSIBLE ADJUVANT

Authors:

L. D. Patel, Professor and Principal, C. U. Shah College of Pharmacy and Research, Wadhwan City, Surendranagar, Gujarat, India. drldpatel@yahoo.com

M. C. Gohel, Professor and Principal, L. M. College of Pharmacy, Ahmedabad-380009, Gujarat, India.

Smita Galani, Department of Pharmaceutics, L. M. College of Pharmacy, Ahmedabad-380009, Gujarat, India.

Jigneshkumar Patel, Lecturer, S. K. Patel College of Pharmaceutical Education and Research, Kherva-382711, Mehsana, Gujarat, India. jlpatel79@yahoo.com

Text:

The objective of the present investigation was to develop lactose based directly compressible (DC) adjuvant and to use Artificial Neural Networks (ANNs) for its evaluation. Lactose was recrystallized from concentrated aqueous solution in the presence of different percentages of partially hydrolyzed wheat starch. The crystalline products were evaluated for Carr's Index, angle of repose and Hausner ratio. The optimised batch of DC adjuvant was evaluated for lubricant sensitivity, dilution potential and characterization using ANNs. Dissolution study of Nimesulide tablets was carried out in phosphate buffer. Co-processing of lactose with starch significantly improved the flowability of the diluent. The addition of magnesium stearate upto 1.5% yielded satisfactory tablets with respect to crushing strength and friability. Acceptable drug dissolution was shown by the formulated tablets. The tablets of optimized batch exhibited superior friability and crushing strength as compared to that of commercially available diluents. It is concluded that lactose based directly compressible adjuvant can be developed using ANNs.

Name and Address for the Correspondence:

L. D. Patel,
C/o, Jigneshkumar Patel
19, Devchhaya Society,
Nr. Sattadhar Society, Sola Road,
Ghatlodia, Ahmedabad-380061, Gujarat,
INDIA.

E-mail: drldpatel@yahoo.com