Drug Des 2018, Volume 7
DOI: 10.4172/2169-0138-C2-026

Formulation, optimization and characterization of novel stomach specific mucoadhesive microspheres bearing amoxicillin trihydrate

Patel Anandkumar K, Patel Vishnu M and **Solanki Anil S**
APMC College of Pharmaceutical Education And Research, India

The formulation was to build up the stomach specific and dosage form having ability to control the release of amoxicillin trihydrate taken as active ingredient. The amoxicillin trihydrate microspheres have been formulated with different polymers to obtain instant floating and optimized the various polymers' concentration using 3^2 factorial design. Amoxicillin trihydrate mucoadhesive microspheres containing polyox WSR N 303 and ethyl cellulose were formulated with solvent evaporation method and optimized for amoxicillin: polymer: polymer ratio and rotation rate as factors. Formulation containing 1:1.5:1.5 ratio of Polyox WSR N 303: ethyl cellulose: methocel K4M showed mucoadhesion for longer period and significant result observed for the *in vitro* mucoadhesion, drug content, and $t_{50\%}$, which could result in more available therapy. The mucoadhesive microspheres of the best batch with ratio of 1:1:0.5 and 1500 stirring speed exhibited a high % *in-vitro* mucoadhesion, 88.56% drug entrapment efficiency and mean particles size of 113.05 µm. The *in-vitro* release was achieved for more than twelve hours with the mucoadhesive microspheres of amoxicillin trihydrate. The results of stability studies for all the formulations revealed that the optimized formulations have satisfactory stability. It can also be concluded that prepared formulations can be successfully prepared as an approach to increase gastric residence time and thereby improving bioavailability.

anandpatel208@gmail.com