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Studies on β -CD complexation of a poorly soluble drug

Mohidurakshan¹, Nisar Ahmad Khan² and Khalid Bashir Mir²

¹Sher-I-Kashmir Institute of Medical Sciences, India

²University of Kashmir, India

Clarithromycin is an oral macrolide antibiotic similar to erythromycin and azithromycin. Clarithromycin penetrates lung tissues and macrophages to a greater degree compared to erythromycin. Clarithromycin is a derivative of erythromycin and it has a methoxy group attached to C6 position of erythromycin. This derivatisation makes clarithromycin more stable towards acid than erythromycin. However, the main problem related with clarithromycin is its practical insolubility in water. Moreover, another problem encountered with clarithromycin is that it is a relatively weak UV absorbing compound as it lacks suitable chromophoric group, hence, absorbance measurements will be unreliable. Here in this study β -CD was chosen for the complexation of clarithromycin to increase its solubility characteristics. Preparation of inclusion complexes of clarithromycin was done using kneading, co-solvent evaporation and solvent blend technique in different ratios. Phase solubility and saturation solubility studies of prepared inclusion complexes were done. The phase solubility behavior of clarithromycin in various concentrations of β -CD was obtained. The inclusion complexes were characterized and their drug CD interactions were studied by means of FTIR, UV and SEM analysis. Dissolution study of different formulations was performed using USP type II dissolution apparatus and the drug content was assayed spectrophotometrically in visible range of UV. Both the solubility and dissolution rate of the drug in these formulations was found to be increased. Drug contents were determined by UV spectrophotometry in visible range.

Biography

Mohidurakshan is working as a Pharmacist in one of the leading tertiary care hospital of Northern India (Sheri-Kashmir Institute of Medical Sciences, Soura Srinagar). She has fifteen years of experience as a Pharmacist in the said organization. She completed Master's degree in Pharmaceutics from University of Kashmir with distinction and received merit scholarship and a gold medal. She attended conferences and workshops, has a few publications in hand and is a Freelancer for *Pharmaliterati*.

darakshanmahaa@gmail.com
mahadarakshan@hotmail.com

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