1. Introduction

Praziquantel (PZQ) is known worldwide as the drug of first choice for the treatment of the most common forms of schistosomiasis and cysticercosis. Kollicoat IR is a polymer consists of 75% polyvinyl alcohol/25% polyethylene glycol units and 0.3% colloidal silica. The PZQ dissolution rate thus becomes the limiting step for absorption. Solid dispersion (SD) of poorly soluble drugs in hydrophilic carrier matrix have been reported to improve their solubility and dissolution rate. The technology of SD involves preparation of co-precipitates, co-evaporates, whose purpose in pharmaceutical manufacture is to alter the solid state properties of the candidate drug thereby increasing dispersion rate, improving the solubility coefficient as well as raising stability. The aim of this study was to prepare and evaluate solid dispersion obtained by co-precipitation of PZQ with Kollicoat IR.

2. Methods

PZQ and Kollicoat IR were dissolved separately in ethanol and mixed under mechanical agitation. The solvent was eliminated using a rotary evaporator under reduced pressure. The SD and physical mixture (PM) of PZQ:Kollicoat IR (1:1) were characterized by X-ray diffraction, evaluated for water solubility and dissolution rate.

3. Results

Solubility value for SD and PM 1:1 are shown in Figure 1 and dissolution profile is shown in Figure 2. The ray-X diffraction showed decreasing of crystallinity of SD PZQ. The increase in solubility and dissolution rates of the SD with Kollicoat IR could be attributed to change from solid crystalline to amorphous.

4. Conclusion

The SD of PZQ and KIR increased the PZQ solubility and dissolution rate.

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