**Poster Presentation**

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## *The relevance of polymorphism in rifampicin*

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Tuberculosisis is an infectious Neglected Tropical Disease (NTD) considered a public health problem in several countries. Rifampin (RIF) is one of the first choice drugs in the treatment of this disease since it has bactericidal action on susceptible strains of Mycobacterium tuberculosis, the etiological agent of tuberculosis affecting humans. According to the literature RIF can exist in two polymorphic forms, namely forms I and II, a penta-hydrate and an amorphous solid1. Each form has different solubility in aqueous medium affecting the bioavailability of the drug when it formulated in solid dosage forms for oral administration since they are expected to content form II2. The objective of this research is to characterize and understand in detail the pharmaceutically relevant forms of RIF. It is an important and challenging problem related to the development of formulations because the physical mixture of these forms is usually observed in raw materials from generic suppliers. Thus, the reference sample (USP standard) and two lots from different suppliers were investigated by electron microscopy, Raman and infrared spectroscopies, X-ray diffraction powder and thermal analysis. In addition, pure samples of these solid forms were produced by recrystallization under different conditions in order to establish the structural reference standards. The results of this study will be useful for the development of efficient quality control methods for a drug which is very important to the social health programs.

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