

## Poster Presentation

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### *Structural Characterization of Albendazole with the Use of X-Ray Diffraction*

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Drugs may present polycrystalline polymorphism (property of a substance to crystallize in more than one form or crystal structure). These variations can cause changes in physical-chemical properties and differences between the polymorphs as shape, solubility, density, melting range, among other consequences, leading to formulations that are not effective, although the chemical formula is the same [1]. Drugs such as albendazole (C<sub>12</sub>H<sub>15</sub>N<sub>3</sub>O<sub>2</sub>S, which is one of the most effective anthelmintics, [2] showing activity against nematodes, trematodes and cestodes, reasons that added to its safety and low cost have made it a drug widely used in human medicine and veterinary), has more than two different crystal structures, and only two of them are known. The X-ray powder diffraction is a powerful technique used in the structural characterization of drugs, and coupled with the Rietveld method [4], the quantification of the active phases, through the knowledge of their crystal structures, becomes possible. In this paper we discuss results on the differences between the polymorphs of albendazole, with data obtained by means of X-ray diffraction, thermal analysis (differential scanning calorimetry and thermogravimetric analysis), Fourier transform infrared spectroscopy and scanning electron microscopy.

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