Mechanochemical procedure of the first stage of deferasirox synthesis

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Mechanochemistry is a branch of chemistry that includes chemical and physico-chemical transformations of substances, of all aggregate states, driven by mechanical energy. It follows the principles of green chemistry and is widely used, for example, in inorganic chemistry and material chemistry, and more recently in organic and pharmaceutical chemistry.

The goal of the research was to synthesize the active substance, deferasirox. In this study, we present the results of the first step in the synthesis of



- first oral iron chelator. Its main use is to reduce chronic iron overload in patients who are receiving long-term blood transfusions

The word chelation is derived from Greek $\chi\eta\lambda\dot{\eta}$, chēlē, meaning "claw"; the ligands lie around the central atom like the claws of a crab $\frac{O}{U}$

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deferasirox can be synthesized mechanochemically

NH₂

OH

Fig. 1. The first step in the synthesis of deferasirox

- the co-crystal was synthesized using a vibratory ball mill, with in situ monitoring by Raman spectroscopy, but also using an extruder and a planetary mill. This co-crystal is a polymorph of one reported in the literature (refcode: AQEJEO). The structure was solved using the Rietveld method

CO-CRYSTAL -

- benzoxazone was prepared by melting co-crystal







međunarodni znanstveno-stručni skup

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