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DIVERSITY OF FURAGIN POLYMORPHS AND SOLVATE CRYSTAL FORMS

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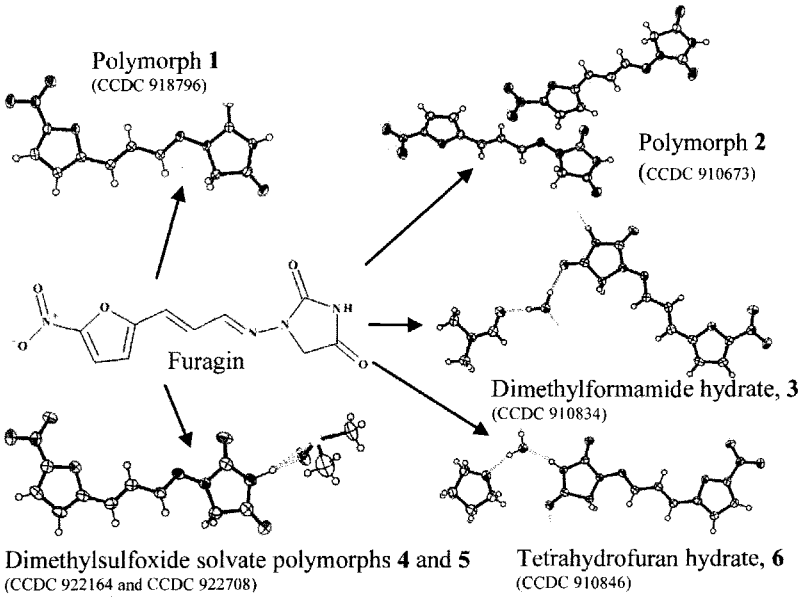
Furagin, 1-[(3-(5-nitro-2-furyl)allylidene)amino]hydantoin, or Furazidin, an anti-infective agent for treating urinary tract infections was developed in Latvian Institute of Organic Synthesis. Despite of its long-term use the crystal structure of Furagin, its polymorphism and solvatomorphism have not been studied.



Search for polymorphs was performed in 12 solvents. Three stable polymorphs and four solvates were found and characterized by powder X-ray diffraction, Raman spectroscopy and DTA/TG. For two polymorphs and all solvate forms the crystal structure was determined by a single crystal X-ray structure analysis. Polymorphic forms differ in molecular packing. There are molecular chains formed by hydrogen bonds in **1** and dimers in **2**. Furagin molecule is planar in all crystals, except **4**. Solvate molecules in **3** and **6** are connected to Furagin molecules via water molecules by hydrogen bonds making planar systems.