

POLYMORPHIC ANALYSIS of TEGAFUR

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Tegafur-uracil is a combination of chemotherapeutic agents for different types of cancers and is particularly useful for the treatment of colorectal cancer. Its primary active ingredient, Tegafur, has been used as an anti-metabolite in cancer treatment for fifty years. Although the biological effect of Tegafur has been studied, its properties have not been extensively studied. We have investigated this substance by its recrystallization from solvents of different polarities. The analysis of the recrystallized Tegafur with IR, DSC and XRD techniques proved the existence of different polymorphic forms due to different hydrogen bonding characteristics. The abundance of oxygen and nitrogen atoms in the molecule contributes to the formation of hydrogen bonds. The IR and DSC techniques provided preliminary polymorphic information. The XRD technique gave more detailed information about its solid structures.