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Fluorouracil

National Cancer Institute

Source

National Cancer Institute. *Fluorouracil*. NCI Thesaurus. Code C505.

An antimetabolite fluoropyrimidine analog of the nucleoside pyrimidine with antineoplastic activity. Fluorouracil and its metabolites possess a number of different mechanisms of action. In vivo, fluoruracil is converted to the active metabolite 5-fluorouridine monophosphate (F-UMP); replacing uracil, F-UMP incorporates into RNA and inhibits RNA processing, thereby inhibiting cell growth. Another active metabolite, 5-fluoro-2'-deoxyuridine-5'-O-monophosphate (F-dUMP), inhibits thymidylate synthase, resulting in the depletion of thymidine triphosphate (TTP), one of the four nucleotide triphosphates used in the in vivo synthesis of DNA. Other fluorouracil metabolites incorporate into both RNA and DNA; incorporation into RNA results in major effects on both RNA processing and functions.