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Chemistry of Secondary Metabolites (Production, Properties, Biological Activity, etc.): Solubility Study of the Interaction between Pamam G-3 Dendrimer and 5 Fluorouracil in Aqueous Solution

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Poly(amidoamine) dendrimers (PAMAM) are polymeric macromolecules that can find their use as carriers of small ligand molecules such as cosmetics and drugs. 5- Fluorouracil is a potent oncological drug, whose usage is limited because of its relatively high toxicity.

The surface and internal layer groups in PAMAM dendrimer belonging to the third (G3) generation create an open-type structure, which facilitate small ligand molecules to bind with them.

The formation equilibrium of PAMAM G3 dendrimer complex with an oncologic drug such as 5 fluorouracil (FU) in water at room temperature was examined. Using the results of the drug solubility in dendrimer solutions, the maximal number of drug molecules in the dendrimer-drug complex was evaluated. Solubility results show that PAMAM G3 dendrimer can transfer tens 5 fluorouracil molecules in aqueous solution.

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