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Pegylated Liposomal Doxorubicin Hydrochloride

National Cancer Institute

Source

National Cancer Institute. *Pegylated Liposomal Doxorubicin Hydrochloride*. NCI Thesaurus. Code C1555.

A liposome-encapsulated preparation of the hydrochloride salt of the anthracycline antineoplastic antibiotic doxorubicin. Doxorubicin intercalates between DNA base pairs, thereby hinders the movement of replication machinery along DNA strands, as well as blocks the activity of topoisomerase II during replication. As a result, this agent causes DNA adducts formation, renders single- and double-stranded DNA breakages that induce DNA repair and or apoptotic processes. Doxorubicin also generates reactive oxygen species that leads to cytotoxicity secondary to lipid peroxidation of cell membrane lipids. Liposomal delivery of doxorubicin HCl improves drug penetration into tumors and decreases drug clearance, thereby increasing the duration of therapeutic drug effects. A liposomal formulation of doxorubicin also modulates toxicity, specifically the cardiac effects commonly seen with anthracycline antitumor drugs.