Pegylated Liposomal Mitomycin C Lipid-based Prodrug

National Cancer Institute

Source

National Cancer Institute. Pegylated Liposomal Mitomycin C Lipid-based Prodrug. NCI Thesaurus. Code C103276.

A pegylated liposomal formulation comprised of a lipophilic prodrug of the antineoplastic antibiotic mitomycin C containing a cleavable disulfide bond (PL-MLP), with potential antineoplastic activity. Upon administration of the pegylated liposomal mitomycin C lipid-based prodrug, the MLP moiety becomes activated upon thiolysis at the tumor site, thereby releasing mitomycin C. Bioreduced mitomycin C generates oxygen radicals, alkylates DNA, and produces interstrand DNA cross-links, thereby inhibiting DNA synthesis. The thiolytic environment and upregulated expression of thioredoxins at the tumor site allow for the activation and release of mitomycin C. This prodrug formulation allows for greater circulation time, less systemic toxicity and increased accumulation of mitomycin C at the tumor site.