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Nanoparticle Albumin-Bound Docetaxel

National Cancer Institute

Source

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A nanoparticle albumin-bound formulation of the taxane docetaxel with antineoplastic activity. Docetaxel is a semi-synthetic, second-generation taxane derived from a compound found in the European yew tree *Taxus baccata*. Docetaxel binds to and stabilizes tubulin, thereby inhibiting microtubule disassembly which results in cell-cycle arrest at the G2/M phase and cell death. This agent also inhibits pro-angiogenic factors such as vascular endothelial growth factor (VEGF) and displays immunomodulatory and pro-inflammatory properties by inducing various mediators of the inflammatory response. This nanoparticle albumin-bound formulation solubilizes docetaxel without the use of the nonionic solubilizer Cremophor ELP, permitting the administration of larger doses of docetaxel while avoiding Cremophor ELP-associated toxicity.