Background: Camptothecin is a cytotoxic plant alkaloid originally isolated from C. acuminate that inhibits DNA and RNA synthesis in mammalian cells and is an effective anti-tumor agent (1). Research studies indicate that camptothecin inhibits topoisomerase I with an IC₅₀ of 679 nM (2). Camptothecin binds and stabilizes topoisomerase I-DNA cleavage complexes, which leads to DNA strand breaks (1,3,4). The resultant DNA damage can induce cell cycle arrest in many cancer cell lines (5,6). Inactivation of the tumor suppressor protein p53 can increase the cytotoxicity of camptothecin (6).

Background References:

Molecular Formula: C₂₀H₁₆N₂O₄

Molecular Weight: 348.4 g/mol

Solubility: Soluble in DMSO up to 10 mg/ml with warming. Very poorly soluble in ethanol and water.

Purity: >98%