

[Open Peer Review on Qeios](#)

# Topotecan

National Cancer Institute

## Source

National Cancer Institute. *Topotecan*. NCI Thesaurus. Code C1413.

A semisynthetic derivative of camptothecin, a cytotoxic, quinoline-based alkaloid extracted from the Asian tree *Camptotheca acuminata*. Topotecan inhibits topoisomerase I activity by stabilizing the topoisomerase I-DNA covalent complexes during S phase of cell cycle, thereby inhibiting religation of topoisomerase I-mediated single-strand DNA breaks and producing potentially lethal double-strand DNA breaks when encountered by the DNA replication machinery.