

[Open Peer Review on Qeios](#)

Sapacitabine

National Cancer Institute

Source

National Cancer Institute. *Sapacitabine*. NCI Thesaurus. Code C64541.

An orally bioavailable pyrimidine analogue prodrug with potential antineoplastic activity. Sapacitabine is hydrolyzed by amidases to the deoxycytosine analogue CNDAC (2'-Cyano-2'-deoxyarabinofuranosylcytosine), which is then phosphorylated into the active triphosphate form. As an analogue of deoxycytidine triphosphate, CNDAC triphosphate incorporates into DNA strands during replication, resulting in single-stranded DNA breaks during polymerization due to beta-elimination during the fidelity checkpoint process; cell cycle arrest in the G2 phase and apoptosis ensue. The unmetabolized prodrug may exhibit antineoplastic activity as well.