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Etoposide Prodrug CAP7.1

National Cancer Institute

Source

National Cancer Institute. *Etoposide Prodrug CAP7.1*. NCI Thesaurus. Code C114977.

A prodrug of etoposide, a semisynthetic derivative of podophyllotoxin extracted from the mandrake root *Podophyllum peltatum*, with potential antineoplastic activity. Upon intravenous administration of the etoposide prodrug CAP7.1, etoposide is released after enzymatic cleavage of CAP7.1 by specific carboxylesterases (CE) 1 and 2, which are upregulated in certain tumor cell types. Etoposide acts primarily in the G2 and S phases of the cell cycle. This drug binds to and inhibits topoisomerase II, an enzyme elevated in tumor cells. This results in the accumulation of double-strand DNA breaks, the inhibition of DNA replication and transcription and the induction of apoptotic cell death. The tumor-specific activation of etoposide increases its efficacy while lowering its systemic toxicity.