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Combretastatin A1 Diphosphate

National Cancer Institute

Source

National Cancer Institute. *Combretastatin A1 Diphosphate*. NCI Thesaurus. Code C84867.

The diphosphate prodrug of the stilbenoid combretastatin A1, originally isolated from the plant *Combretum caffrum*, with vascular-disrupting and antineoplastic activities. Upon administration, combretastatin A1 diphosphate (CA1P) is dephosphorylated to the active metabolite combretastatin A1 (CA1), which promotes rapid microtubule depolymerization; endothelial cell mitotic arrest and apoptosis, destruction of the tumor vasculature, disruption of tumor blood flow and tumor cell necrosis may ensue. In addition, orthoquinone intermediates, metabolized from combretastatin A1 by oxidative enzymes found to be elevated in some tumor types, may bind to tumor cell thiol-specific antioxidant proteins and DNA, and stimulate oxidative stress by enhancing superoxide/hydrogen peroxide production. CA1 binds to tubulin at the same site as colchicine but with higher affinity.