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# Artesunate

National Cancer Institute

## Source

National Cancer Institute. *Artesunate*. NCI Thesaurus. Code C73005.

A water-soluble, semi-synthetic derivative of the sesquiterpine lactone artemisinin with anti-malarial, anti-schistosomiasis, antiviral, and potential anti-neoplastic activities. Upon hydrolysis of artesunate's active endoperoxide bridge moiety by liberated heme in parasite-infected red blood cells, reactive oxygen species and carbon-centered radicals form, which have been shown to damage and kill parasitic organisms. Additionally, in vitro studies demonstrate that this agent induces DNA breakage in a dose-dependent manner. Artesunate has also been shown to stimulate cell differentiation, arrest the cell cycle in the G1 and G2/M phases, inhibit cell proliferation, and induce apoptosis through mitochondrial and caspase signaling pathways. Artemisinin is isolated from the plant *Artemisia annua*.