



October 4, 2008. Report on Synthesis and Anti-Cancer Activity of Novel Targeted Artemisinin Compounds.

In the October, 2008 online issue of *Cancer Letters*, University of Washington (UW) researchers reported on the synthesis and anti-cancer activity of novel targeted artemisinin compounds. Artemisinin, a natural product isolated from *Artemisia annua* L., shows a unique anti-cancer activity by an iron dependent mechanism. The UW team chemically attached artemisinin to a targeting peptide, which binds to the surface of the transferrin receptor, which cells use to acquire the iron-transporting protein called transferrin. This technology enables artemisinin to be delivered into cancer cells simultaneously with iron. The iron released from transferrin can activate artemisinin to generate toxic radical species to kill cells with elevated free iron levels, such as cancer cells. The artemisinin-peptide compounds showed potent anti-cancer activity against Molt-4 leukemia cells with a significantly improved selectivity between cancer/normal cells, or approximately 1,200 times more specific than current chemotherapy drugs in killing certain cancer cells.

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