# Semi-Synthetic Artemisinin For The Treatment Of Malaria

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Malaria is a mosquito-borne tropical disease that infects over 250 million people per year and is a major killer of children in countries in which the disease is endemic.

Developing countries bear a disproportionate burden of diseases for which commercial investment in research and development is lacking, including the neglected tropical diseases, AIDS, malaria and tuberculosis.

> *This underinvestment by the commercial companies is due to lack of traditional profit drivers and a corresponding failure of market economics to address conditions of the poor.*

Through a generous grant from the Bill and Melinda Gates Foundation, a partnership between the Institute for One World Health (now PATH), Amyris, Inc., U.C. Berkeley and later, sanofi-aventis, resulted in the commercial application of methods by which large quantities of the artemisinin for artemisinin combination therapies (ACTs) are manufactured.

Artemisinin has traditionally been extracted from a plant, Artemesia annua, that is grown in Africa, China and Vietnam.

Growing cycles and variation in crop yield result in variable supplies of artemisinin, which in turn, affects its price and availability. The commercial licensee and sublicensee of the patent rights are Amyris, Inc. and sanofi-aventis respectively.

Sufficient quantities of artemisinin are now being manufactured using the patented methods (and further refinements) to increase the supply of artemisinin, and therefore its availability as a component of ACTs. Through effective dissemination strategies, including humanitarian use clauses in the patent licenses, the cost of malaria treatment is lowered compared to existing treatments and availability of treatment is increased.

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