Novel Method for Inhibition and Treatment of Malaria

Summary:
The invention is a new molecule for treatment of malaria. It consists of a modified Decoquinate molecule that is soluble in water, whereas Decoquinate itself is not soluble in water.

Contact Information: Aswini K. Betha, Ph.D.
KU Innovation & Collaboration (913)588-5713 abetha@ku.edu

Benefits:
This pro-drug of Decoquinate is water soluble as opposed to Decoquinate itself which is not soluble in water. Solubility in water allows administration of the drug by the intravenous and intramuscular routes. Water solubility also makes feasible oral administration by improving absorption from the gut.

Applications:
Malaria and Coccidian infection; Presently, Decoquinate is only approved for veterinary use as a coccidiostat. The prodrug invention will be given to humans for a possible treatment of malaria.

How it Works:
The prodrug has been tested with Mass Spec and NMR to confirm the structural correctness and thin layer chromatography has been used to test for purity. It releases decoquinate when acted upon by phosphoesterase enzymes which are ubiquitous in the human body.

Why it is better:
Decoquinate is very insoluble in water and is therefore not absorbed in the body. The pro-drug of the present invention, on the other hand, is highly water soluble and should be readily absorbed. The pro-drug can have 1000 times increased solubility in water than the Decoquinate.

Patents:
US 2013/0150330

Additional Web Content:
Contact the inventor, Michael Baltezor.