Potential new way to treat malaria

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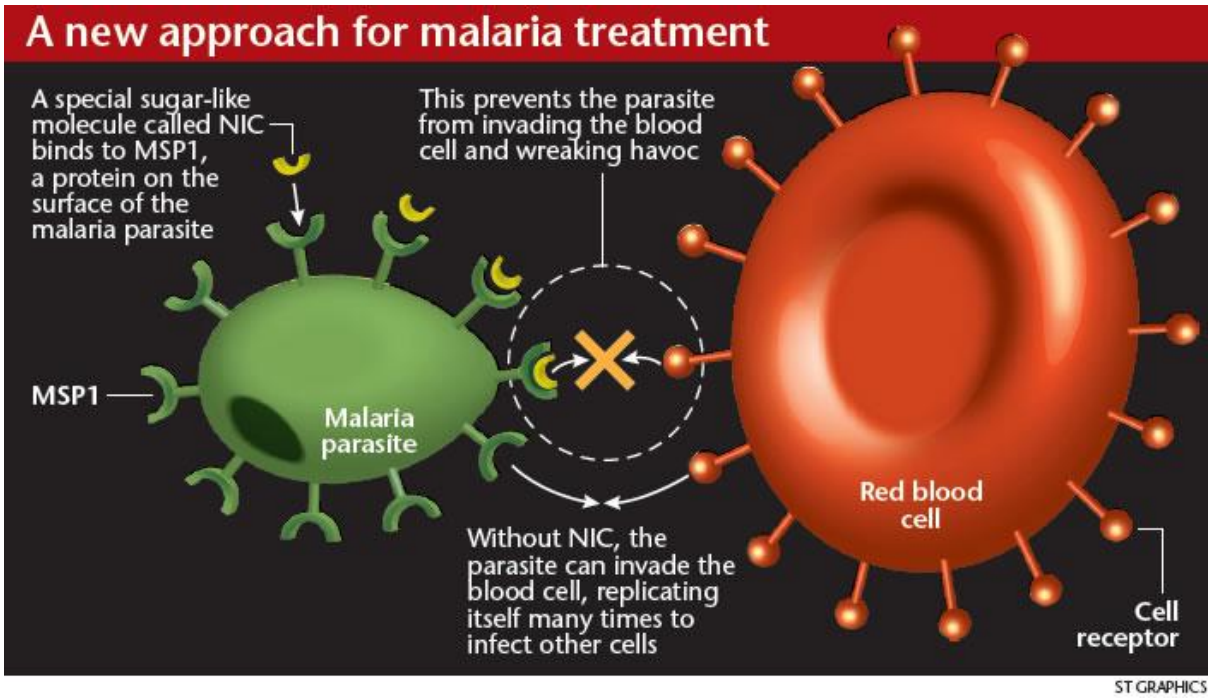

A team of scientists in Singapore may be a step nearer to finding a more effective treatment for malaria.

Studies have found that malaria parasites are developing resistance to a drug called artemisinin, which is commonly used to treat the mosquito- borne disease.

However, the team has found that a special molecule called NIC can bind to proteins on the surface of the malaria parasite, preventing it from invading human blood cells and wreaking havoc.

The team is made up of Dr Rajesh Chandramohanadas, assistant professor at the Singapore University of Technology and Design, and biologists, including Professor Peter Preiser and Dr Ming Dao from the Singapore-MIT Alliance for Research and Technology, and others from the United States.

Malaria is most commonly found in Africa and less-developed parts of South-east Asia. In 2012, it killed around 627,000 people.

When malaria parasites invade blood cells and the illness takes hold, it can cause chills, fever, fatigue and in severe cases, kidney failure and sometimes death.

"NIC can bind to a protein called MSP1, which is very abundant on the surface of the malaria parasite," Dr Chandramohanadas explained. "The success rate of preventing it from invading blood cells is high."

It is much harder for the parasite to develop resistance against NIC as the inhibitor works quickly and gives little chance for the parasite to find alternative pathways, he added. The discovery is the result of three years of work in biology labs where hundreds of molecules were screened.

The next step is to develop NIC into a drug to treat and possibly cure malaria, by preventing parasites from replicating. This may take several years, Dr Chandramohanadas said.

National University of Singapore microbiologist Kevin Tan called the discovery "promising" but said safety and toxicity tests must be carried out to evaluate the feasibility of such a drug.