



"We are making many new discoveries about how the malaria parasite works, and we're trying to use this information to develop new vaccines. It's a long process that could take 10 to 15 years, but if these vaccines work, then we can have an enormous impact on the lives of people."

Chetan E. Chitnis

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- M.Sc. in Physics from the Indian Institute of Technology, Bombay
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- Ph.D. in Biophysics from the University of California, Berkeley

Dr. Chetan E. Chitnis is credited for the identification of the erythrocyte binding protein on malarial parasite that binds to the Duffy protein on the host blood cell. His work helped in narrowing the region of association and development of antibodies to prevent this association and infection. Clinical trials with vaccines that target malaria parasites are underway and offer hope for the development of a viable malaria vaccine.



Winning the battle against malaria

Today, 3.3 billion people, around half the world's population, are at risk of contracting malaria. In spite of the best efforts of researchers, a vaccine against malaria has proved elusive.

In 1880, a French army doctor, Charles Louis Alphonse Laveran found a parasite in the red blood cells of people sick with malaria.

In 1898, a Scottish physician, Sir Ronald Ross, working at the Presidency General Hospital in Calcutta discovered the complete lifecycle of the malarial parasite in mosquitoes and since then researchers across the globe have been working relentlessly to combat this disease.

Dr. Chetan Chitnis has been working on understanding the molecular basis of how the malarial parasite invades red blood cells by using the malarial parasite *Plasmodium vivax* (*P. vivax*) and a closely related malarial parasite in monkeys called *Plasmodium knowlesi* (*P. knowlesi*).

Both parasites, *P. vivax* and *P. knowlesi*, invade the red blood cells by binding with a protein called Duffy antigen, found on the surface of these cells.

Dr. Chitnis studied Duffy antigen binding proteins from *P. vivax* and *P. knowlesi* to understand the interaction between the host and parasite. His research could lead to the development of an effective vaccine against this dreaded disease and save millions of lives.

