



Third Laureate Fundamental Research



- ◆ **Researcher:** Dr. Alexander G. Maier
- ◆ **Nationality:** Australia
- ◆ **Date of Birth:** July 29, 1968
- ◆ **Field:** Medical Research
- ◆ **Position:** Senior Research Fellow/Australian Research Fellow
- ◆ **Scientific Affiliation:** Department of Biochemistry, La Trobe Institute for Molecular Science, La Trobe University, Melbourne 3086 Victoria, Australia.
- ◆ **Research Work Title:** Molecular Mechanism of Malaria Pathogenesis

Abstract:

The malaria parasite *Plasmodium falciparum* causes the most lethal parasitic disease of humans with 1 million deaths annually. Existing drugs are losing their efficacy rapidly due to the spread of drug resistance. This study used a gene knockout approach on an unseen scale and identified several potential new drug and vaccine targets by shedding light on how the deadly parasite restructures the human host cells. In addition it extends the available repertoire of molecular tools to gain insights into the mechanisms that ensure the survival of the parasite in the human host.

Biography:

Dr Maier's passion for Molecular Parasitology was ignited during his studies at the University of Tuebingen (Germany) and Southern Colorado (USA). During his doctorate at the ZMBH (Centre of Molecular Biology) in Heidelberg, Germany, he investigated protein trafficking and membrane proteins of an energy generating organelle in *Trypanosoma brucei*, the causative agent of the African sleeping sickness.

In 2000, he then joined the malaria group of Professor Alan Cowman at the Walter and Eliza Institute of Medical Research (WEHI), Melbourne, where he dealt with the mechanism of how malaria parasites invade red blood cells.

In 2002 he took on the task to establish and head the WEHI Malaria Functional Genomics Facility. His research focus since then is the transport and display of malaria molecules on the surface of infected red blood cells.

Dr. Maier joined La Trobe University, Melbourne, in 2008, where he is currently an ARC Australian Research Fellow.



64