## conferenceseries.com

**Global Congress on** 

## Nucleic Acids: Biology, Health & Diseases

August 04-05, 2016 New Orleans, USA

## Peptide nucleic acids (PNAs) as antimalarial agents

**Eylon Yavin** The Hebrew University of Jerusalem, Israel

Specific silencing of essential genes by antisense oligonucleotides (ASOs) has been proposed as an alternative approach that may result in antimalarial activity which is not associated with drug resistance. Here, we present the use of peptide nucleic acids (PNAs) as a useful tool for gene silencing in *Plasmodium falciparum*; the most lethal parasite in malaria. PNAs, designed as specific antisense molecules, were conjugated to a cell penetrating peptide (CPP) to allow facile internalization into *Plasmodium falciparum* infected red blood cells. PNAs simply added to cultures were found exclusively in infected erythrocytes. We show that these PNAs specifically down regulated both stably expressed transgene as well as an endogenous gene, which significantly reduced parasites viability. In addition, we show that PNA targeting an antisense lncRNA in *Plasmodium falciparum* affects the expression profile of Var genes; an approach that could lead to more effective clearance of the parasite by the human immune system.

## **Biography**

Eylon Yavin has completed his PhD at the Weizmann Institute of Science (Israel). He did his Post-doctoral work at the Laboratory of Prof. Jacqueline Barton at Caltech (CA, USA). In 2006, he joined the School of Pharmacy at Jerusalem as a faculty member. He is currently a Senior Lecturer and has an active research lab in the field of Nucleic Acids. He has published more than 40 papers in reputed journals and has been recently elected as the President of The Medicinal Chemistry Section of the Israel Chemical Society.

eylony@ekmd.huji.ac.il

Notes: