New class of inhibitor for Apicomplexan parasites

Recently, RTS, S, the first malaria vaccine for children living in *Plasmodium falciparum* endemic areas was approved. However, its applicability is limited due to its partial protection efficacy and requirement of multiple boosters. The present invention provides novel compounds of formula I, pharmaceutically acceptable salts thereof, pharmaceutical compositions thereof and method for the treatment and prevention of malaria infection and transmission in a mammal. In particular, the present disclosure relates to hydroxyethylamine-based compounds, and their use for treating protozoan parasitic diseases, such as malaria and *Leishmania* Spp.

Parasitic infections are a global threat in human and animal populations. Due to widespread drug resistance and limited alternatives, protozoan parasite infections have become harder to combat. There are five main parasites belonging to the Apicomplexans and Kinetoplastids groups, namely *Plasmodium falciparum, Leishmania* Spp., *Trypanosoma cruzi, Toxoplasma gondii*, and *Cryptosporidium* spp. *Plasmodium, Toxoplasma*, and *Cryptosporidium* belong to the phylum Apicomplexa, while *Trypanosoma* and *Leishmania* are flagellated protozoans grouped under Kinetoplastids.

Specifically, malaria caused by parasites of the genus Plasmodium continues to be a major global health threat with endemicity in over 100 countries and more than 3.4 billion people still at risk. Despite making considerable progress in malaria control and reduction efforts through awareness, mass spraying and use of insecticide treated bednets, malaria cases are still on raise.

**Link:** DBT-National Institute of Immunology (DBT-NII), New Delhi

**Link:** Hydroxietanylamine based Piperazine compounds, methods of producing and using the same for treating disease.

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