

## Special Issue on **Antioxidant Response, Protein Turnover, and Immune Response in Parasitic Diseases: A Straight Correlation**

# CALL FOR PAPERS

Parasitology is a very important field in life science and knowledge on the parasite and interaction with the host is important to help us understand their impact on human medicine. Parasites are claiming the lives of millions of peoples worldwide and the risk of parasitic infections to many communities, mainly in the developing world, has increased in response to climate change, global migration, and immunocompromised diseases. These factors have expanded the frontier of most infectious disease and have created new disease foci and endemic regions. The lack of vaccines for routine use for many parasitoses, absence of reliable treatment regime, diagnostic tool for use in field situations, and drugs resistances are the major challenges faced by parasitologist in their quest to control or eradicate infectious pathogens.

Reactive Oxygen Species (ROS) including product of inducible nitric oxide synthase (iNOS) such as nitric oxide (NO), inevitably produced as a consequence of aerobic metabolism and host immune response, play crucial roles in the development and elimination of parasitic infections.

ROS and NO production from the amino acid, arginine, the Krebs cycle, and byproducts such as itaconate and succinate are linked with the activation of proinflammatory cascades and a Th1 response important for parasite clearance. ROS and NO present key functions in innate immunity as conservative defense mechanisms and in adaptive immunity particularly in immune suppression. ROS also induce protein turnover pathways, for example, autophagy, ubiquitination in parasite, pathway important for parasite differentiation in the new host and posttranslational modification of protein, and energy generation from carbohydrates, lipids, and amino acids to aid virulence. On the other hand parasites are related to autoimmune disease or mimic tumoral cells. Indeed the full understanding of their biology will open the knowledge in other fields. Based on this, a deep understanding on the interaction of the antioxidant and protein turnover machineries of both parasites and hosts with the host immune system to aid the understanding of the biology of parasites is extremely needed.

The purpose of this special issue is to publish high quality original research papers as well as reviews that seek to describe recent development on the antioxidant biology including ROS, the protein turnover machinery, and the host immune system in the disease pathology and how they can be used to develop preventive diagnostic and therapeutic treatment for the parasitic infections.

Potential topics include but are not limited to the following:

- ▶ Host-parasite interaction
- ▶ Oxidative stress and disease development
- ▶ Oxidative stress and altered signaling and host immune function
- ▶ Chemotherapy, drug resistance, and oxidative stress
- ▶ Pathogen oxidative changes and antioxidant defense
- ▶ Posttranslational protein modification, protein turnover, and disease progression
- ▶ Arginine and proline metabolism in oxidative changes in parasites and vectors
- ▶ Oxidative stress and parasite immunobiology
- ▶ Advanced techniques in 'omics (proteomics, transcriptomics, and metabolomics) for studying antioxidant biology, protein turnover, posttranslational modification, and host immune system modulation by pathogen
- ▶ Development of diagnostic tools and biomarkers for antioxidant monitoring
- ▶ Identification of new drugs to manipulate antioxidant system for therapeutic intervention

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/omcl/aptr/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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