BioMed Research International

Special Issue on
Epigenetic Gene Regulation and Signaling Pathways in Ocular Disease

CALL FOR PAPERS

Aberrant gene expression and signaling pathways play vital roles in the pathological processes underlying various ocular diseases. Special emphasis is placed on papers that investigate epigenetic mechanisms of gene regulation in ocular diseases. Epigenetics is a topic of heightening interest in ophthalmology because of its translational potential to develop novel strategies for improving treatment of anterior and posterior segment ocular diseases. This approach is of critical importance because currently in many cases the approaches in vogue only provide palliative relief without affecting the underlying mechanisms of sight compromising pathology. Epigenetic regulation entails DNA methylation, histone modifications, and noncoding RNAs. As Epigenetic modifications are implicated in an ever increasing number of physiological and pathological processes, there is a burgeoning interest to identify associations between aberrant changes and dysfunctional responses underlying different ocular diseases. Such insight will be helpful for developing novel strategies in order to establish effective treatments of ocular diseases and thereby reverse losses in visual acuity.

We welcome research articles as well as thematic reviews which will help the scientific community better understand the importance of delineating how in the eye epigenetic mechanisms contribute to modulating gene expression levels in order to maintain normal function. Furthermore it is of great interest to the readership to realize the specific associations between different epigenetic modifications and their numerous targets that are perturbed in blinding eye diseases such as diabetic retinopathy and age related macular degeneration. These different types of studies will support efforts to design novel strategies that may be of potential value in treating ocular disease.

Potential topics include, but are not limited to:

- Impact of DNA methylation and histone modifications on target genes affecting ocular function in health and disease
- Altered associations between microRNA and target gene expression in ocular function and diseases
- Signaling pathways, gene expression, identification, and networks in ocular diseases
- Gene regulation and its involvement in the pathogenesis of ocular diseases
- Transcription regulators and epigenetic factors as biomarkers or therapeutic targets for the management of ocular diseases
- Hurdles in developing novel epigenetic procedures for treating ocular diseases

Authors can submit their manuscripts via the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/bmri/ophthalmology/grsp/.

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