

Preface

The role of epigenetic histone modifications in the pathogenesis and regulation of eye diseases has received increasing attention. Among these modifications, histone acetylation, which is regulated by histone acetyltransferases (HATs) and histone deacetylases (HDACs), is crucial for regulating gene expression under disease conditions in the eye. Hence, eye diseases are closely linked to the imbalance between the acetylation and deacetylation of histone proteins. Moreover, most HDAC inhibitors (HDACis) and several HDAC activators have demonstrated high therapeutic potential in animal models of and in patients with eye diseases. Focusing on the molecular aspects of HATs, HDACs, HDACis, and HDAC activators, this book reviews recent advances in histone acetylation in ocular surface diseases, cataracts, glaucoma, uveitis, and multiple retinal diseases and discusses the effects and mechanisms of action of these enzymes and molecules, with the goal of identifying novel targets for the prevention and treatment of these eye diseases.