



## Special Issue

# Epigenetic Basis of Cancer Drug Resistance

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### Special Issue Introduction

Cancer is a deadly disease and resistance to therapies is a major reason that renders it particularly lethal. Some cancer patients are inherently resistant to specific therapy because of their genetic makeup (de novo cancer drug resistance) while other cancer patients initially respond to therapy, but eventually develop resistance with continued administration (acquired cancer drug resistance). A good understanding of cancer drug resistance is critical to the efficient management of cancer patients in the clinics. A majority of research so far has focused on genetic factors that form the basis of cancer drug resistance. However, it is increasingly being realized that epigenetic regulation plays a very important role in determining the resistance of individual tumors to certain therapies. Methylation and acetylation are two well-studied epigenetic events that are known to profoundly affect the expression of genes, resulting in activation of oncogenes and/or suppression of tumor suppressor genes, leading to development of cancer drug resistance. DNA methylation, histone modifications (methylation, acetylation, phosphorylation, ubiquitylation, sumoylation etc) as well as regulation through microRNAs (miRNAs) are some of the active areas of cancer research, encompassing the epigenetic regulation. A number of novel drugs, that target epigenetic events, are under investigation, thus serving as a testimony to the enormous potential of exploiting epigenetics in tackling the problem of cancer drug resistance.

This special issue welcomes novel research and detailed review articles addressing the progress made in our understanding of epigenetic basis of cancer drug resistance. This issue will also serve as a platform to discuss the promises as well as unique challenges specific to this field of cancer research. All the submitted articles will undergo rigorous peer review and will be published free of charge upon acceptance.

### Benefits

**Rigorous mechanism in peer review:** one manuscript must be reviewed by at least two relevant experts. We will endeavour to ensure high standards for the review process and subsequent publication by a team of efficient and professional reviewers and scientific editors.

**No publication fee:** there would be absolutely no charge for publication.

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