

CTMI 310 – Current Topics in Microbiology and Immunology

As of early 2006, PubMed listed more than 10,000 entries on DNA methylation. Basic research on the biological significance of this complex genetic signal in DNA has certainly had a major impact on biomedicine, particularly on investigations in development, genetic disease, and cancer.

The 12 chapters published in this volume have been written by scientists with many outstanding contributions to their credit, summarizing their current research and ideas for future projects. Several different biological systems have been addressed in these studies – which attests to the generality and ubiquitous importance of this genetic signal – now also including *Drosophila melanogaster*. Much of the interest in this genetic signal in biomedicine derives from the realization that 5-methyldeoxycytidine in specific promoter locations often serves as a long-term silencer of gene activity. Problems of gene regulation in development, disease, and particularly cancer research have been pursued with great intensity, receiving widespread attention in the scientific community. This volume is the second part of two treatises on DNA methylation, with the first published in 2005 as volume 301 under the title *DNA Methylation: Basic Mechanisms*. We look forward to a wide audience for these two volumes and with even keener expectation to further rapid developments in this area of biomedical research.

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