PREFACE

Cancer is undoubtedly one of the biggest killers of mankind that brings untold suffering and hardships not only to the individual having the disease, but to concerned family members as well. It is a disease that has no regard for the status, success, or wealth of the individual; it can strike anyone at anytime in one's life cycle. In the US alone, one of six deaths is due to cancer. While this disease is understood well enough to know that there are certain risk factors that can increase one's chance of getting cancer, both dietary and environmental factors, we unfortunately still have a long way to go in being able to selectively kill cancerous cells without killing healthy cells as well. However, as our basic understanding of the differences between normal cells and cancer cells advances, and in particular as we gain an improved understanding of intracellular signaling systems, we will be in a better position to find the "magic bullets" for destroying cancerous cells in the human body. Also, equally important in the war against cancer will be our understanding of the role of environmental carcinogens as causative agents in this disease. Indeed, it has been estimated by some epidemiologists that as many as 90% of all cancers may be due to environmental factors.

The present treatments for cancer are multi-faceted, and often involve radiation, surgery, immunotherapy, and chemotherapy, or a combination of these treatments. In the coming issues, invited authors will be reviewing the state of the art in the areas of immunotherapy and chemotherapy. Particular attention will also be given to the possibility of using intracellular signaling systems and apoptotic events in controlling abnormal cell growth.

In the present issue, Moore and his colleagues provide an exciting account of their research on a new class of cytotoxic agents from extracts of a blue-green alga. It is clear from this article, that the search for new anticancer agents from natural products sources has continued and will continue to provide important new leads in mankind's quest for the "magic bullet." Next, Nagpal and Chandraratna give an exciting account of the potential of retinoids, synthetic and natural analogs of retinoic acid, in cancer therapy through their ability to regulate cell growth by the modulation of the expression of responsive genes through nuclear retinoid receptors. In the third article, Gangjee and his collaborators highlight recent advances in the computer assisted rational design, synthesis, and biological evaluation of antifolates as anticancer, antipneumocystis, and antitoxoplasma agents. It is apparent from this review that the folate metabolizing enzymes still provide important targets in the search for cancer treatments. In the fourth review, Ahn and Sok provide a detailed mechanistic account of the importance of Michael acceptors in the design of anticancer drugs. The chemistry and cytotoxic action of a variety of molecules such as the mitomycins, quassinoids, and sesquiterpenoid benzoquinones containing embedded Michael acceptors are discussed. Lastly, the review of Denny reveals the crucial role that pro-drug strategies hold for the improvement of the targeting and thus therapeutic index of known anticancer agents. This review provides the important take home message that one may add a little more magic to our present day chemotherapeutic bullets through the creation of novel pro-drug conjugates which are selectively activated by tumors.

In all, the present issue should provide the interested researcher with new ideas and directions to take on the long road to the discovery of truly "curative" chemotherapeutics for cancer.

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