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The Annual Review of Pharmacology and Toxicology, like other annual reviews of medical sciences, has a long tradition of publishing good articles on selected topics and/or areas relating to different fields of medical sciences, thereby highlighting the important developments in different areas of research. This volume has 26 review articles that can be broadly classified into 8 groups: Prefatory chapters; Antimicrobial and antiviral chemotherapy; Cancer chemotherapy and immunopharmacology; Cardiovascular and endocrine pharmacology; Environmental and industrial pharmacology and toxicology; Mechanisms of drug actions, Neuro and behavioral pharmacology.

The volume begins with the first prefatory article written by Nobel laureate Sir James Black, who contributed to the discovery of propranolol and cimetidine. In this chapter, Black adumbrates the way his ideas about pharmacological analysis have developed over 40 years and explains concepts, models and techniques used in analysis and also a need for the future development. The central theme is how the development of simple mathematical model has assisted in the interpretation of drug action. The second prefatory article 'A career in toxicology' is interesting and useful to young toxicologists, who could learn from the varied exciting experiences of R. A. Neal. The author finally states that there is a distorted public perception of risks posed by environmental chemicals and there is an urgent need for toxicologists to take a more active role in objective evaluation of the available data published by the scientists, print and electronic media.

In the first group, three chapters discuss advances made in the understanding of antimicrobial and antiviral chemotherapy. In the 1980s, a novel form of gene regulation was discovered in prokaryotes whereby translation of a specific mRNA into protein was suppressed by its hybridization and binding to a counter transcript, i.e. an RNA transcript in opposite orientation to the mRNA. Investigators are now making progress in utilizing this concept of nature in the development of a new class of therapeutic agents called antisense. Early reports from *in vitro* animals as well as human trials are quite exciting. Crook and Bennet describe the progress in the development of antisense oligonucleotides as pharmacological and therapeutic tools. Multidrug resistance represents a major obstacle in the successful chemotherapy of cancer. Studies have demonstrated that P-glycoprotein appears to play an important role in drug resistance. Bellamy in 'P-glycoprotein and multidrug resistance', suggests that one should not over-look other probable mechanisms such as increased detoxification, enhanced ability to repair DNA damage, alterations in cellular metabolism, failure to undergo apoptosis may also be operating. Despite several classes of promising new anti-HIV agents, the clinical emergence of drug resistance variants of HIV has severely limited the long term effectiveness of non-nucleoside drugs. Critical mutations in the RT and PR genes in resistance virus have been identified. Erikson and Burt feel that these insights will have definite implications in design of new drugs and therapeutic strategies to combat drug resistance to AIDS.

In the article 'Molecular mechanisms of toxicant-induced immunosuppression', Hosapple *et al.* describe the role of second messengers in immune regulation and how changes in intracellular signalling by immunotoxic agents (cannabionoids, polyaromatic hydrocarbon (PAHS) etc.) result in immune disfunction.

There are three excellent articles in cardiovascular related area. In 'Angiotensin receptors and their therapeutic implications', Griendling *et al.* describe the current concepts on angiotensin receptor classification, antagonist and their therapeutic utility. At least 30 different phosphodiesterase enzymes have now been identified in mammalian tissues and cells, many of which are products of separate genes. Polson and Strada describe the cardiovascular potentials of various PDE inhibitors. In the article 'Cardiac actions of antihistamines', R. L. Wossley cautions the clinicians about the propensity of some of the new generation antihistamines like terfenadine and astemizole to induce life-threatening arrhythmias and alerts the essentiality of investigating the cardiac toxicity of older antihistamine, which are still under clinical use.

Insulin controls organismal and cellular physiology of numerous intracellular signals. Despite intensive investigations, the basic molecular mechanism of insulin action on glucose metabolism is still elusive. In the review article, 'Insulin signal transduction and the IRS proteins', Myers and White give detailed aspects of molecular mechanisms, in particular the role of IRS protein in insulin action. This is truly an excellent article, well-annotated and of value to anybody working in diabetes research either in the laboratory or in the clinic. Progesterone plays a crucial role in the mammalian reproduction that is: initiation and maintenance of pregnancy. Some of the antiprogestins like mefipristone have strong affinity to both progesterone and glucocorticoid receptors. Spitz *et al.* describe an exciting therapeutic potential of these molecules at low doses for the treatment of endometriosis, uterine myoma, inducing abortion, treatment for steroid-dependent tumours and contraceptive. Along with the impressive body of evidence on the molecular mechanisms of estrogen, Yager and Liehr discuss in 'Molecular mechanisms of estrogen carcinogenesis' the mechanisms of estrogen carcinogenesis with a focus on carcinogenic potentials of estrogen metabolites.

Breast cancer has claimed a unique place in the public consciousness. Over the past decade, and especially within the past few years, breast cancer has become probably the single most discussed medical topic of all – more so even than AIDS and cardiovascular diseases. In recent years we have witnessed a barrage of articles and debates and programmes and information about breast cancer epidemics. The real turning point came in 1990 when scientists finally proved the existence of a gene called BRCA1 which if damaged could predispose women to developing breast cancer. In 'Breast cancer and environmental risk factors', Wolf *et al.* present the epidemiological evidence for breast cancer risk from exposures to chemicals and physical agents in the environment and relevant corollary studies in laboratory animals. Hoyer and Siper, in 'Assessment of follicle destruction in chemical-