Schering-Plough and allergic dis-

Allergic disease is common, and although long considered trivial, recent research suggests that it disrupts many everyday functions in allergy sufferers and can have a significant effect on their quality of life. Furthermore, loss of productivity in the workplace and educational impairment at school, as a result of allergic symptoms, has a significant economic cost. Anti-allergy drugs are an important element in the management of allergic diseases and historically there has been a clear evolution in the approach to the discovery of new drugs.

Histamine (H_1)-receptor antagonists and corticosteroids have been the mainstay of the drug treatment of allergy over the past 50 years and Schering-Plough scientists have made their own contributions to this area. Chlorpheniramine and polaramine, potent H_1 -receptor antagonists were discovered in the 1940s, and prednisone and prednisolone, prototypic oral corticosteroids, in the 1950s. Advances in medicinal chemistry and pharmacology, coupled with a greater understanding of drug metabolism and pharmacokinetics, have led to the improvements in the anti-allergy medicines widely used today. For instance, once-daily dosing and lack of sedation are important characteristics of today's most widely used H_1 -receptor antagonists. Similarly, the improved therapeutic index of intranasal corticosteroids is due to increased topical potency and low systemic bioavailability.

Mast cells and histamine release were the primary focus of drug discovery for many years. Over the past quarter century both academic institutions and the pharmaceutical industry have invested considerable

effort in understanding the genetics and pathophysiology underlying allergic diseases and as a result many potential targets for new drugs have been identified. For example, in 1986, Mosmann and Coffman (*J. Immunol.* 136, 2348–2357; 1986) from DNAX Institute of Molecular Biology, a subsidiary of Schering-Plough Research Institute, proposed that T helper cells could be divided into different types depending on their pattern of cytokine secretion. Their theory predicted that cytokines secreted by type-2 helper T cells were important in allergic inflammation. This insight provided not only a better understanding of the immune processes underlying allergy, but also a valuable framework for the identification of new drug targets by Schering-Plough and others.

Drug discovery and development is now in the midst of a major revolution driven by major advances in technology. The ever increasing amount of information on genes and their products, which resides in highly sophisticated databases, is generating many new genomic targets for high throughput robotic screening. Application of high throughput synthesis and structure-based drug design is rapidly providing novel chemical leads. Thus, the prospects for new therapeutics for allergic disease in the future are excellent.

Schering-Plough has a major commitment to the improved treatment of allergic diseases through cutting-edge basic research, efficient drug development and comprehensive educational and pharmacoeconomic programmes. Sponsorship of this valuable supplement is part of this mission.

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