Preface

The second edition of *Biotechnology and Safety Assessment* includes a combination of biotechnology-related topics. Some chapters emphasize the complexities of advanced molecular biology, including antisense therapeutics, the biological features of the cytokines, and triplex and ribozyme technology controlling deleterious gene expression. Important pharmacological applications of new agents may lead to further therapeutic success in the management of various disease states.

The safety assessment of biotechnology-derived agents represents a challenge to the toxicologist. Although the immunotoxicity of a potential agent must be fully evaluated, many other preclinical toxicology tests must be undertaken. A host of safety considerations are pertinent in evaluating biopharmaceuticals, many of which are either large protein molecules or glycoproteins.

Agribiotechnology is also extensively described in this edition. Genetically modified organisms can be used to increase the nutritional value and taste of many food products. Agribiotechnology-derived products can be environmentally friendly, as evidenced by the reduced use of herbicides and pesticides. The incidence of food allergens, whether from naturally derived foods or genetically engineered foods, may necessitate specific safety evaluations.

Regulatory and environmental considerations are of the utmost importance in the safety evaluation of either biotherapeutic agents or genetically engineered food crops. National and international agencies continue to evaluate biotechnology-derived products not only to insure their human safety but also to evaluate any potential impact on the environment. Many of these issues are addressed in *Biotechnology and Safety Assessment*.

Biotechnology and Safety Assessment presents a series of contemporary views on the importance of the advances in mammalian and plant genetics and shows how these advances contribute to better therapeutic agents and more wholesome foods.