Preface

Over the last 15 years, there has been renewed interest in supercritical fluids owing to their unique properties and relatively low environmental impact. Greatest attention has been given to the extraction and separation of organic compounds. Supercritical fluids have also been successfully used for particle production, as reaction media, and for the destruction of toxic waste. Supercritical carbon dioxide has been the most widely used supercritical fluid, mainly because it is cheap, relatively nontoxic, and has convenient critical values. Supercritical fluids have also been used on analytical and preparative scales for many biological and other applications.

Many papers have been published on the use of supercritical fluids. However, few have acted as a detailed instruction manual for those wanting to use the techniques for the first time. We anticipate that this *Methods in Biotechnology* volume, *Supercritical Fluid Methods and Protocols* will satisfy the need for such a book.

Every chapter has been written by experienced workers and should, if closely followed, enable workers with some or no previous experience of supercritical fluids to conduct experiments successfully at the first attempt. The Introduction to each chapter gives the reader all the necessary background information. The Materials and Methods sections describe, in detail, the apparatus and steps needed to complete the protocol quickly, with a minimum of fuss. The Notes section, an acclaimed feature of the *Methods in Biotechnology* series, gives additional information not normally seen in published papers that enable the procedures to be conducted easily. Some of the chapters describe how the procedures can be modified for application to new situations. The first chapter is not a detailed procedure, but a theoretical, general introduction to the area of supercritical fluids intended to instruct novices in this branch of technology.

It is envisaged that *Supercritical Fluid Methods and Protocols* will be useful to both student and experienced research workers in biology and related areas. Our hope is that the experience gained when using these techniques will give these workers the confidence to explore new applications for supercritical fluids.

One can envisage a time in the future when the use of sub- and supercritical carbon dioxide and water becomes very important in laboratory work, with organic solvent use considerably reduced.

Finally, we would like to thank Professor John Walker for allowing us to edit this volume and for his cooperation during the compiling of this book. We would also like to acknowledge Professor E. D. Morgan of Keele University, UK for passing this opportunity on to us. We thank Thomas Lanigan and his colleagues at Humana for their help in seeing our book through press.

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