Preface

Diabetes mellitus is the collective name for a group of diseases associated with hyperglycemia (high levels of blood glucose) caused by defects in insulin production, insulin action, or both. About 6.2% of the US population (17 million people) have diabetes mellitus. It is the leading cause of kidney failure, blindness, and amputations. It is also a major risk factor for heart diseases, stroke, and birth defects.

Diabetes Mellitus: Methods and Protocols provides a state-of-the-art account of the experimental methodology for studying the molecular defects leading to diabetes mellitus, both at the molecular and biochemical levels. The chapters cover a wide range of topics written by experts in their respective fields and are organized in two sections: Insulin Production and Insulin Action. The detailed experimental protocols presented, including the notes of interest, provide a very useful tool for basic researchers and clinicians for investigating and treating this disease. Each chapter starts with an introduction to a specific technique and explains its application in the field of diabetes research. Following the list of materials, a detailed description of the technique is presented in the methods section in a way that enables the successful execution of the protocol. The “Notes” section at the end discusses the pitfalls of the technique and alternative approaches.

I am grateful to the numerous scientists who have contributed to this volume by writing both highly detailed and understandable chapters. Special thanks also to Prof. John M. Walker, editor of the Methods in Molecular Medicine series and Mr. Thomas Lanigan, President of Humana Press, for bringing Diabetes Mellitus: Methods and Protocols to fruition.

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