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## 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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