

THE PHARMACOGENOMICS OF PERSONALIZED MEDICINE

RONALD E. REID

University of British Columbia, Vancouver, British Columbia, Canada

Contents

- 1 Introduction
 - 2 Pharmacogenomics
 - 3 Personalized Medicine
 - 4 Molecular Profiling Technologies
 - 4.1 Genotyping Technologies—Genomics
 - 4.2 Gene Expression Profiling—Transcriptomics
 - 4.3 Protein Analysis—Proteomics
 - 4.4 Metabolomics
 - 4.5 Enviromics
 - 5 Associative Analysis
 - 6 Conclusion
- Acknowledgments
References

1 INTRODUCTION

According to the European Agency for Evaluation of Medicinal Products (EMA, <http://www.emea.eu.int/>), *pharmacogenetics* is defined as “the study of inter-individual variations in DNA sequence related to drug response.” This definition emphasizes the studies on allelic variation of metabolic enzymes involved in drug metabolism and points to the early successes in correlating the alterations in drug metabolism with variations in the genes responsible for production of the metabolic enzymes.