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2.6 Biological Complexity and the Role of Medicine in the Future of the Genome2.7 Conclusion; 2.8 References; 3 Turning SNPs into Useful Markers of Drug Response; Abstract; 3.1 Introduction; 3.2 Two Approaches for Employing SNPs in Pharmacogenomics; 3.2.1 Candidate Gene Studies; 3.2.2 Whole Genome Linkage Disequilibrium Mapping Studies; 3.2.3 Comparison of Candidate Gene and Whole Genome LD Mapping; 3.3 How Many SNPs are Needed and What Kind are Useful for Pharmacogenomic Studies; 3.3.1 Location; 3.3.2 Frequency; 3.3.3 Haplotype Analysis
3.3.4 Number of SNPs Required for Whole Genome LD Mapping Studies3.4 Study Designs for Pharmacogenomic Analysis; 3.4.1 Challenges Unique to Pharmacogenomics; 3.4.2 Clinical Trials, Case-Control and Cohort Studies; 3.5 Analytical Issues is Pharmacogenomic Studies; 3.5.1 Effect of LD on Sample Size; 3.5.2 Multiple Hypothesis Testing; 3.5.3 Gene-Drug Interaction; 3.6 Development of Pharmacogenomic Markers; 3.7 Conclusion; 3.8 References; 4 Association Studies in Pharmacogenomics; Abstract; 4.1 Introduction; 4.2 Variability and ADR in Drug Response: Contribution of Genetic Factors
4.3 Multiple Inherited Genetic Factors Influence the Outcome of Drug Treatments4.3.1 Background; 4.3.2 Liver Metabolism Enzymes; 4.3.3 Transporters; 4.3.4 Plasma Binding Proteins; 4.3.5 Drug Targets; 4.4 Association Studies in Pharmacogenomics; 4.4.1 The Principles of Association Studies; 4.4.2 Study Design; 4.4.3 Direct Approach: A Hypothesis-Driven Strategy; 4.4.4 Indirect Approach: A Hypothesis-Generating Strategy; 4.5 SNP Assembly into Maps; 4.6 Strategies for Pharmacogenomic Association Studies; 4.6.1 Candidate Genes; 4.6.2 Genome-Wide Scan
4.7 Expected Benefits of Pharmacogenomics in Drug R & D

Sommario/riassunto

This is the very first comprehensive coverage of pharmacogenomics - a new discipline that will revolutionize health care.Pharmacogenomics leads to the understanding of the key genetic differences between individuals and will permit the individual tailoring of pharmacological treatments. Improved therapeutics can reach new levels by being able to differentiate between individuals according to their susceptibility to disease processes or adverse effects of medication. Pharmacogenomics also contributes to the discovery of new targets for drug development. Outstanding experts in the field p