1. Record Nr. UNINA9910823859903321

Titolo	Dried blood spots : applications and techniques / / edited by Wenkui Li, Mike S. Lee
Pubbl/distr/stampa	Hoboken, New Jersey : , : Wiley, , 2014 ©2014
ISBN	1-118-89089-2 1-118-89083-3 1-118-89090-6
Descrizione fisica	1 online resource (377 p.)
Collana	Wiley Series on Pharmaceutical Science and Biotechnology : Practices, Applications and Methods
Disciplina	616.07/561
Soggetti	Blood - Collection and preservation Phlebotomy Forensic hematology Forensic serology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Dried Blood Spots; Contents; Preface; Contributors; PART I History, Applications, and Healthcare; 1 Overview of the History and Applications of Dried Blood Samples; 1.1 History; 1.2 Historical Applications; 1.3 Overall Advantages and Disadvantages of Dried-Blood Spot Sampling; 1.3.1 Advantages; 1.3.2 Disadvantages; 1.4 Conclusion; References; 2 Dried Blood Spot Cards; 2.1 Introduction; 2.2 Filter Paper; 2.3 Filter Paper Sources; 2.4 Guidelines and Printing; 2.5 Printing Adaptations; 2.6 Further Innovations in Manufacturing; 2.7 Filter Paper Cards Construction 2.8 Wraparound Cover and Cassette Construction 2.9 Filter Paper Pre-Treatment; 2.10 The Future of the Filter Paper Card; References; 3 Dried Blood Spot Sample Collection, Storage, and Transportation; 3.1 Introduction; 3.2 General Procedures and Precautions for DBS Sample Collection; 3.2.1 Reagents and Materials; 3.2.2 Biosafety and Infection Control; 3.2.3 Specimen Collection; 3.2.4 DBS Prepared by Other

Collection Methods; 3.2.5 Labeling of DBS; 3.2.6 Drying; 3.3 Sample Storage and Transportation; 3.3.1 Packaging and Storage; 3.3.2 Transportation
3.4 Common Errors in Sample Collection, Storage, and Shipment 3.5 Conclusions; Disclaimer; References; 4 Dried Blood Spot Specimens for Polymerase Chain Reaction in Molecular Diagnostics and Public Health Surveillance; 4.1 Introduction; 4.2 Pioneering DBS Nucleic Acid Extraction Methods for PCR; 4.3 Direct PCR Amplification of Targeted Genomic DNA from DBS; 4.4 Expansion of DBS-PCR from Newborn Screening to Diagnosis of Infectious and other Diseases; 4.5 Application of DBS-PCR in Sequencing-Based Molecular Epidemiology Analyses
4.6 Application of DBS-PCR for HIV Drug Resistance Surveillance and Monitoring in Resource-Limited Settings4.7 Quantitation of Infectious Agent Particles with DBS-PCR; 4.8 Conclusions; References; 5 Application of Enzyme Immunoassay Methods Using Dried Blood Spot Specimens; 5.1 Introduction; 5.2 Overview of Basic ELISA Systems; 5.2.1 Antibody Detection; 5.2.2 Variation of ELISA Method for Antibody Detection; 5.2.3 Variations of ELISA for Antigen Detection; 5.3 Applications of ELISA Methods Using DBS; 5.4 Optimization and ELISA Methods Validation Using DBS Specimens; 5.4.1 DBS Elution Protocol 5.4.2 Defining Cutoff Values5.5 Factors Influencing the Performance of DBS-based ELISA Methods; 5.5.1 DBS Preparation; 5.5.2 Anticoagulant; 5.5.3 Punching; 5.5.4 Cross-Contamination; 5.6 Conclusions; Disclaimer; References; 6 Applications of Dried Blood Spots in Newborn and Metabolic Screening; 6.1 Introduction; 6.1.1 History and Chronology in the Use of DBS in NBS; 6.1.2 Chapter Organization and Perspectives; 6.2 Fundamentals of Dried Blood Spots; 6.2.1 A Class II Medical Device; 6.2.2 Liquid versus Dried Blood Specimens; 6.2.3 Interaction of Paper with Biological Matrix and Substrates
6.2.4 Sample Collection and DBS

Sommario/riassunto

This book covers the fundamentals, experimental procedures, and applications of dried blood spot (DBS) sampling in combination with various qualitative and quantitative analytical techniques. This includes sample collection, storage, transportation, and sample preparation for various analysis. Experimental examples in newborn screening, toxicokinetics and pharmacokinetics, and forensics are also given. Finally, the book provides an overview of trends in quantitative and qualitative analysis of DBS samples as well as future perspectives. This provides a valuable working guide to researchers,