

1. Record Nr.	UNINA9910828752503321
Autore	Kirby Lorne T. <1938->
Titolo	DNA fingerprinting : an introduction / / Lorne T. Kirby
Pubbl/distr/stampa	New York, : W.H. Freeman, 1992
ISBN	0-19-756122-5 1-280-47118-2 9786610471188 1-60256-264-4
Edizione	[1st ed.]
Descrizione fisica	1 online resource (382 pages)
Disciplina	614/.1
Soggetti	DNA fingerprinting Forensic genetics - Technique
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Originally published: New York : Stockton Press, c1990.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- CONTENTS -- 1. INTRODUCTION -- DEFINITION -- HISTORY -- A CASE FOR DNA -- APPLICATIONS -- REFERENCES -- 2. GENETIC PRINCIPLES -- DNA STRUCTURE -- Nuclear DNA -- Organelle DNA -- DNA FUNCTION -- REPRODUCTION -- LINKAGE -- PEDIGREE ANALYSIS -- MUTATION -- RESTRICTION ENDONUCLEASES -- CONCEPT OF POLYMORPHISM -- RECOMBINANT DNA -- BASE SEQUENCE DETERMINATION -- OLIGONUCLEOTIDE SYNTHESIS -- REPETITIVE SEQUENCE ORGANIZATION -- NOMENCLATURE OF ARBITRARY DNA SEGMENTS -- REFERENCES -- 3. LABORATORY ORGANIZATION -- LABORATORY SECTIONS -- Office -- Specimen Documentation -- Specimen Processing -- General Preparation -- Vector Handling -- Amplification by PCR -- Hybridization and Radioisotope Handling -- Darkroom -- Result Interpretation -- Tissue Culture -- Wash-up Area -- EQUIPMENT SUMMARY -- OPERATION -- Personnel -- Work Flow -- Safety -- REFERENCES -- 4. SPECIMENS -- COLLECTION -- STORAGE AND TRANSPORT -- DNA EXTRACTION -- Principles -- Automated System -- Manual System Organic Solvent Extraction -- Manual System Nonorganic Solvent Extraction -- DIALYSIS -- RNAASE TREATMENT -- QUANTITATION -- DNA CONCENTRATION -- QUALITY DETERMINATION -- EFFECTS OF ENVIRONMENTAL FACTORS INCLUDING

CONTAMINATING DNA ON DNA PROFILES -- ANALYSIS REAGENTS -- REFERENCES -- 5. DNA AMPLIFICATION -- POLYMERASE CHAIN REACTION -- Amplified Fragment Length Polymorphisms (AMP-FLPs) -- Advantages of PCR -- Pitfalls in PCR -- A PCR Protocol -- PROBE AMPLIFICATION -- TISSUE CULTURE -- REFERENCES -- 6. ANALYSIS TECHNIQUES -- RESTRICTION ENZYME CLEAVAGE -- GEL-BLOT ORGANIZATION -- Forensic -- Parentage -- Size Markers -- ELECTROPHORESIS -- Equipment -- Reagents -- Procedure -- PHOTOGRAPHY -- DNA RECOVERY -- MEMBRANE TRANSFER -- Southern Blots -- Dot-(Slot-) Blots -- RADIOISOTOPE PROBE LABELING -- NONRADIOISOTOPE PROBE LABELING -- HYBRIDIZATION -- Principles -- Procedures.

PCR Products -- PRINT DETECTION -- BLOT STRIPPING AND REPROBING -- DATA PROCESSING -- Allele Fragment Size Determination -- Digital Analysis -- The FBI System -- Interpretation of Profile Matches -- PROFILE REPORT -- DNA PROFILE DATA BASES -- POTENTIAL PITFALLS -- TROUBLESHOOTING GUIDE -- ANALYSIS COST -- ANALYSIS REAGENTS -- REFERENCES -- 7. PROBES, ALLELE MUTATIONS, AND RESTRICTION ENZYMES -- PROBES -- Polymorphism -- Tandem Repeat Single-Locus vs. Multilocus Probes -- Oligonucleotide Probes -- Amplification and Stability -- Availability -- Probes Used in Forensic Analysis -- MUTATIONS -- Allele Formation -- Genotype Analysis -- RESTRICTION ENZYMES -- Recognition Site Features -- Fragment Resolution -- Sensitivity to Inhibitors and Stability -- Price and Availability -- The Enzymes Selected for Forensic Analysis -- REFERENCES -- 8. PROBABILITY AND STATISTICAL ANALYSIS -- STATISTICAL METHODOLOGY -- Random Sampling -- Data Presentation -- Summary Statistics -- Statistical Inference -- Hypothesis testing -- PROBABILITY -- Probability of Combined Events: Addition and Multiplication Rules -- Bayes' Theorem and Revision of Probabilities -- Random Variables and Distributions -- Genetic Applications of Probability -- REFERENCES -- 9. QUALITY CONTROL -- DNA TEST SYSTEM STANDARDS -- CORRECT SPECIMEN -- DNA QUALITY -- DNA CONTAMINATION -- ANALYSIS CONTROL -- SHEWHART SYSTEM -- RESULT INTERPRETATION -- REFERENCES -- 10. LEGAL AND ETHICAL CONSIDERATIONS -- THE IMPACT OF DNA TYPING -- THE LEGAL STANDARDS FOR ADMISSIBILITY OF DNA TYPING -- The Frye Test -- Ascertaining General Acceptance -- Proper Application of the Technique -- The Relevancy Test of Admissibility -- Another Approach -- Legislated Admissibility of DNA Typing -- DNA Data Banking -- LEGAL FOUNDATION FOR GENERAL ADMISSIBILITY -- Obtaining Known and Unknown Biological Samples -- Chain of Custody.

Proper Laboratory Procedures -- PROCEDURAL AND ETHICAL CONCERNs -- Procedural Safeguards -- Ethical Concerns -- CONCLUSION -- NOTES -- 11. CASE APPLICATIONS -- FORENSIC -- Cases -- PARENTAGE -- Cases -- MEDICAL -- Applications -- ANIMAL SCIENCES -- Cases -- WILDLIFE POACHING -- The Smoking Gun -- PLANT SCIENCES -- FUTURE -- REFERENCES -- APPENDIX I: GUIDELINES FOR A QUALITY ASSURANCE PROGRAM FOR DNA RESTRICTION FRAGMENT LENGTH POLYMORPHISM ANALYSIS -- APPENDIX II: THE COMBINED DNA INDEX SYSTEM (CODIS): A THEORETICAL MODEL -- APPENDIX III: SUPPLIERS OF DNA ANALYSIS EQUIPMENT, PRODUCTS, OR SERVICES -- GLOSSARY -- A -- B -- C -- D -- E -- F -- G -- H -- I -- L -- M -- N -- O -- P -- Q -- R -- S -- T -- U -- V -- W -- X -- Y -- Z -- ABBREVIATIONS AND SYMBOLS -- NAME INDEX -- A -- B -- C -- D -- E -- F -- G -- H -- I -- J -- K -- L -- M -- N -- O -- P -- Q -- R -- S -- T -- U -- V -- W -- X -- Y -- Z -- SUBJECT INDEX -- A -- B --

C -- D -- E -- F -- G -- H -- I -- J -- K -- L -- M -- N -- O -- P -- Q  
-- R -- S -- T -- U -- V -- W -- Y -- Z.

---