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**NATIONAL STANDARD OF THE
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**Forensic sciences-Specifications for next generation
sequencing-based DNA examination**

法庭科学 DNA二代测序检验规范

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

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Forensic Science DNA Next Generation Sequencing Test Specifications

1 Scope

This document specifies the general requirements for forensic human DNA genetic marker targeted sequencing testing using next-generation sequencing technology and Basic requirements for testing equipment and reagents, testing procedures, data analysis, and genetic parameter calculation.

This document is intended for laboratories and product manufacturers engaged in forensic human genetic marker testing for human biological samples and specimens.

Genetic markers such as STR, SNP, InDel and mitochondrial DNA are analyzed by second-generation sequencing.

2 Normative references

GB/T 27025

GB/T 43633

GB/T 43635

3.1 Terms and Definitions

The following terms and definitions apply to this document.

3.1.1 DNA sequencing

Determination of the nucleotide sequence of DNA molecules, that is, determination of adenine (A), guanine (G), cytosine (C) and guanine (G) that make up nucleic acid molecules.

(C) and thymine (T) arrangement order.

3.1.2

Different from traditional Sanger (dideoxy chain termination method) sequencing, this technology can sequence a large number of nucleic acid molecules in parallel at one time.

3.1.3 Targeted sequencing

Sequencing of known and novel variants within a specific set of genes or genomic regions.

3.1.4

The sequence at one end of the single-stranded library DNA specifically binds to the oligonucleotide fixed on the chip surface. When the other end of the ligated fragment bends,

it binds to the chip.

Another complementary oligonucleotide fixed on the surface of the chip "forms a bridge" and the amplification reaction is carried out using the library DNA as a template.

3.1.5

The aqueous phase system used for PCR amplification is mixed with the oil phase system to form a large amount of oil-in-water microemulsion independent PCR amplification space.

A reaction in which a large number of amplified products from the same source are amplified.