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NATIONAL METROLOGY TECHNICAL SPECIFICATION OF THE

PEOPLE'S REPUBLIC OF CHINA

JJF 1817-2020

Calibration Specification for Nucleic Acids Analyzers

核酸分析仪校准规范

(English Translation)

Implemented on: April 17, 2020

Issued by: State Administration for Market Regulation

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Introduction

The preparation of this specification is based on the test of the main technical parameters of the nucleic acid analyzer, based on JJF 1071-2010 the provisions of "National Rules for the Preparation of Metrology Calibration", JJF 1059.1-2012 "Measurement Uncertainty Evaluation and Expression" Make it.

This specification is the first release.

Calibration Specification for Nucleic Acid Analyzer

1 Scope

This specification is applicable to nucleic acid analyzers that analyze the length and concentration of nucleic acid fragments based on the principle of gel electrophoresis Calibration, the length range of applicable nucleic acid fragments is (100 ~ 1000) bp, for nuclear the calibration of the acid analyzer can be performed with reference to this specification. This specification does not apply to plate electrophoresis and genetic analyzers calibration.

2 Reference documents this specification refers to the following documents.

JJF 1265-2010 Biometric Terms and Definitions for dated reference documents, only the dated version applies to this specification; for those without date references the latest version (including all amendments) is applicable to this specification.

3 Terms and units of measurement

3.1 Fragment length

Represents the size of a nucleic acid fragment in units of nucleotides (nt) or base pairs (bp).

3.2 basepair (bp) basepair Paired bases between two strands in nucleic acids. Such as adenine-thymine (AT) pair, adenine-uracil (A-U), guanine-cytosine (GC) pair, guanine-uracil (GU) pair, etc. The number of base pairs characterizes DNA or the length of double-stranded RNA.

[JJF 1265-2010,4.41]

4 Overview

The nucleic acid analyzer (hereinafter referred to as the analyzer) is based on the principle of gel electrophoresis technology and converts double-stranded nucleic acids of different sizes.

The fragments are separated.In the presence of fluorescent dyes, the fluorescent dyes are embedded in the double-stranded nucleic acid to emit fluorescence.

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Signal detection and analysis equipment can be qualitative and quantitative according to the electrophoresis time and fluorescence signal value of each nucleic acid fragment analysis. The analyzer is usually composed of a sampler, capillary/microchip, fluorescence detection optical components, microcircuit control components, Computer and application software, can be used for single and multiple PCR fragments, restriction enzyme digested DNA, etc.

Analysis of fragment length and concentration.

5 Metrological characteristics

5.1 Indication error Fragment length indication error and fragment concentration indication error.

5.2 Repeatability

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