

FORENSIC DNA REAGENT KITS

Company Introduction

Jiangsu Superbio Biomedical (Nanjing) Co., Ltd. (hereinafter referred to as Superbio) was registered and established in February 2016, and has been focusing on the independent R&D and production of forensic DNA testing reagents and supporting products. Based on the deep integration of biological DNA technology and criminal investigation and forensic technology, Superbio focuses on providing a complete set of DNA detection solutions. The company is market-oriented in the application of DNA polymorphism detection and analysis, focusing on the integration of related technologies and commercial resources, providing systematic solutions through research, development, production, sales and service, offering a series of products that can be applied to forensic DNA detection and analysis, public security, criminal investigation, forensic identification, scientific research and other fields.

Superbio's self-owned brand "Yesu" DNA detection kits have provided products, services and solutions for many DNA laboratories in various fields (public security, criminal investigation, judicial institutions, scientific research institutions, biological companies, blood centers, etc.), and its service projects include the autosomal and Y chromosome library building for millions of individuals. The products have been exported to Russia, Spain, Turkey, Macedonia, Egypt, Saudi Arabia, Vietnam, Greece, India and other overseas countries, and have won unanimous recognition and praise from customers.

**Customer-centric,
Researcher oriented
Persist in learning, innovation
and long-term cultivation**



Catalog of Forensic DNA Reagent Kits

Category	Product Name	Specification
Field (Case) Test Kit	A27Plex Fluorescence Detection Kit (Case Edition)	100Tests/Kit
	A33Plex Fluorescence Detection Kit (Case Edition)	100Tests/Kit
	Y41SE Fluorescence Detection Kit (Case Edition)	100Tests/Kit
Autosome Test Kit	21Plex Fluorescence Detection Kit	200Tests/Kit
	A27Plex Fluorescence Detection Kit	200Tests/Kit
	A33Plex Fluorescence Detection Kit	100Tests/Kit
	NC22Plex Fluorescence Detection Kit	100Tests/Kit
Y-chromosome Test Kit	Y41SE Fluorescence Detection Kit	100Tests/Kit
	Y44SE Fluorescence Detection Kit	100Tests/Kit
	Y62Plex Fluorescence Detection Kit (World's first · 8-color fluorescence)	100Tests/Kit
	Y-COM Fluorescence Detection Kit	50Tests/Kit
X-chromosome Test Kit	X18Plex Fluorescence Detection Kit	50Tests/Kit

All products have passed the inspection and trial of the Criminal Technique Product Quality Supervision & Test Center Ministry of Public Security.

A variety of products have obtained the Certificate for China Public Security Product Certification, and have been entered into the DNA Database Directory of the national public security organs.

01

Field (Case) Test Kit

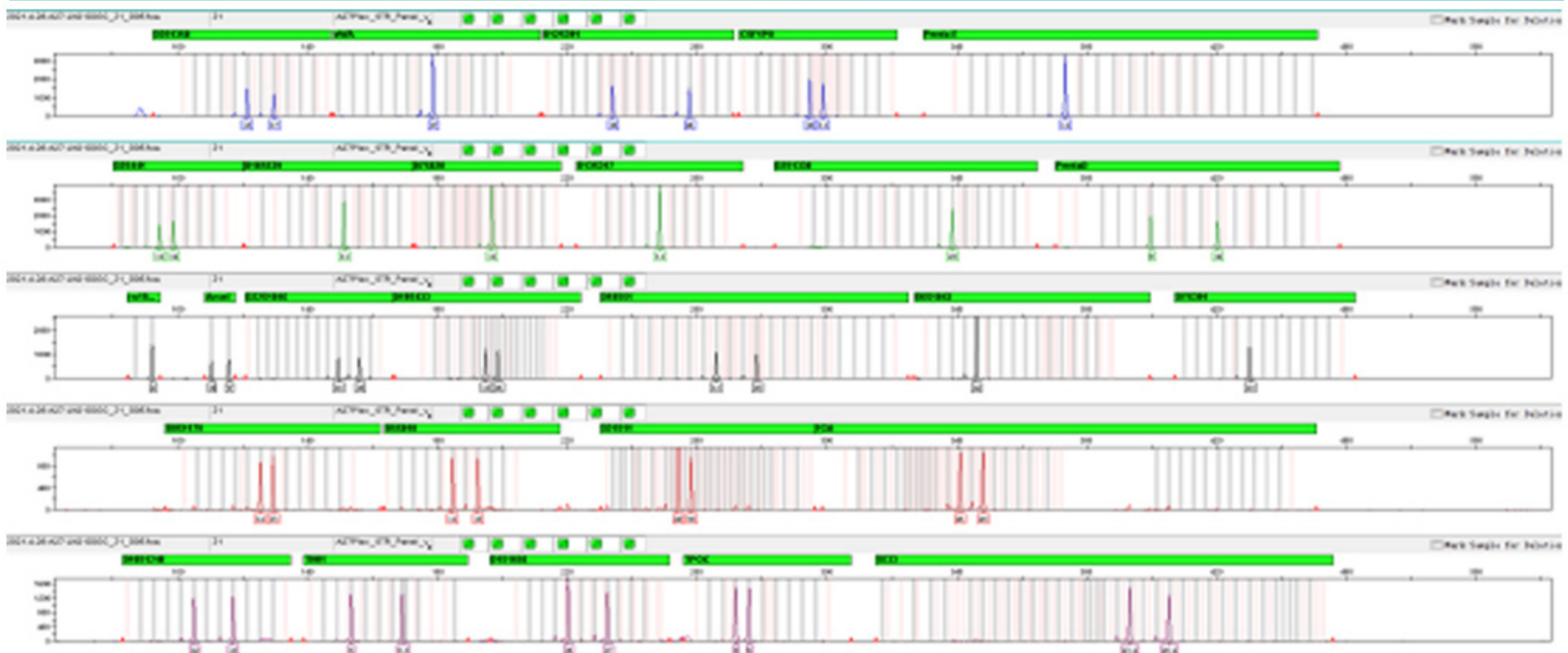
A27Plex (Case Edition) A33Plex (Case Edition)
Y41SE (Case Edition)

A27Plex Fluorescence Detection Kit (Case Edition)



The optimization of high-performance PCR amplification system **brings higher sensitivity and stronger anti-inhibition ability, allowing the minimum detection limit to reach 40 pg**, which greatly improves the detection rate of inhibitor-containing samples. In this way, as much genetic information as possible can be obtained from challenging case samples (including touched, degraded and inhibitor-containing samples), **which is more suitable for the genetic analysis of field biological evidence and degraded samples.**

Example of Test Results on Honor 1816 Forensic DNA Analyzer



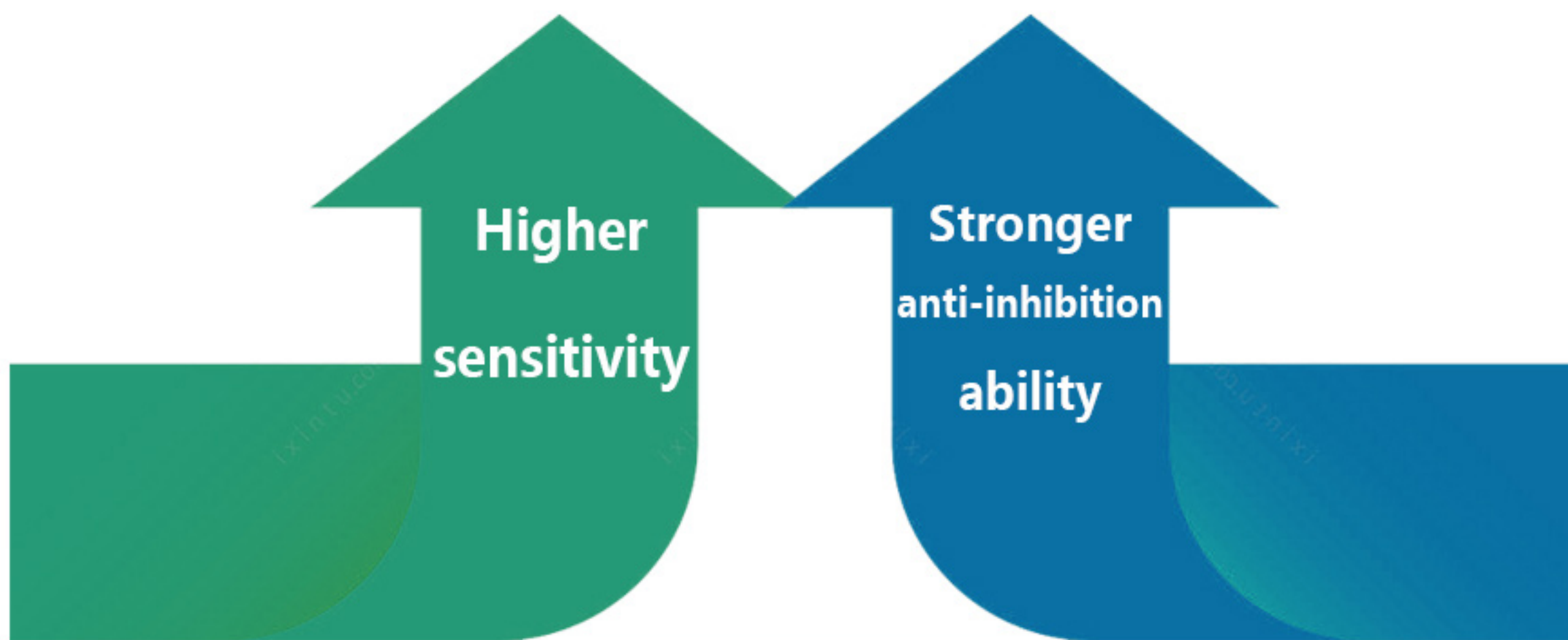
A33Plex Fluorescence Detection Kit (Case Edition)

33
Autosome STRs

1
Y-chromosome STR

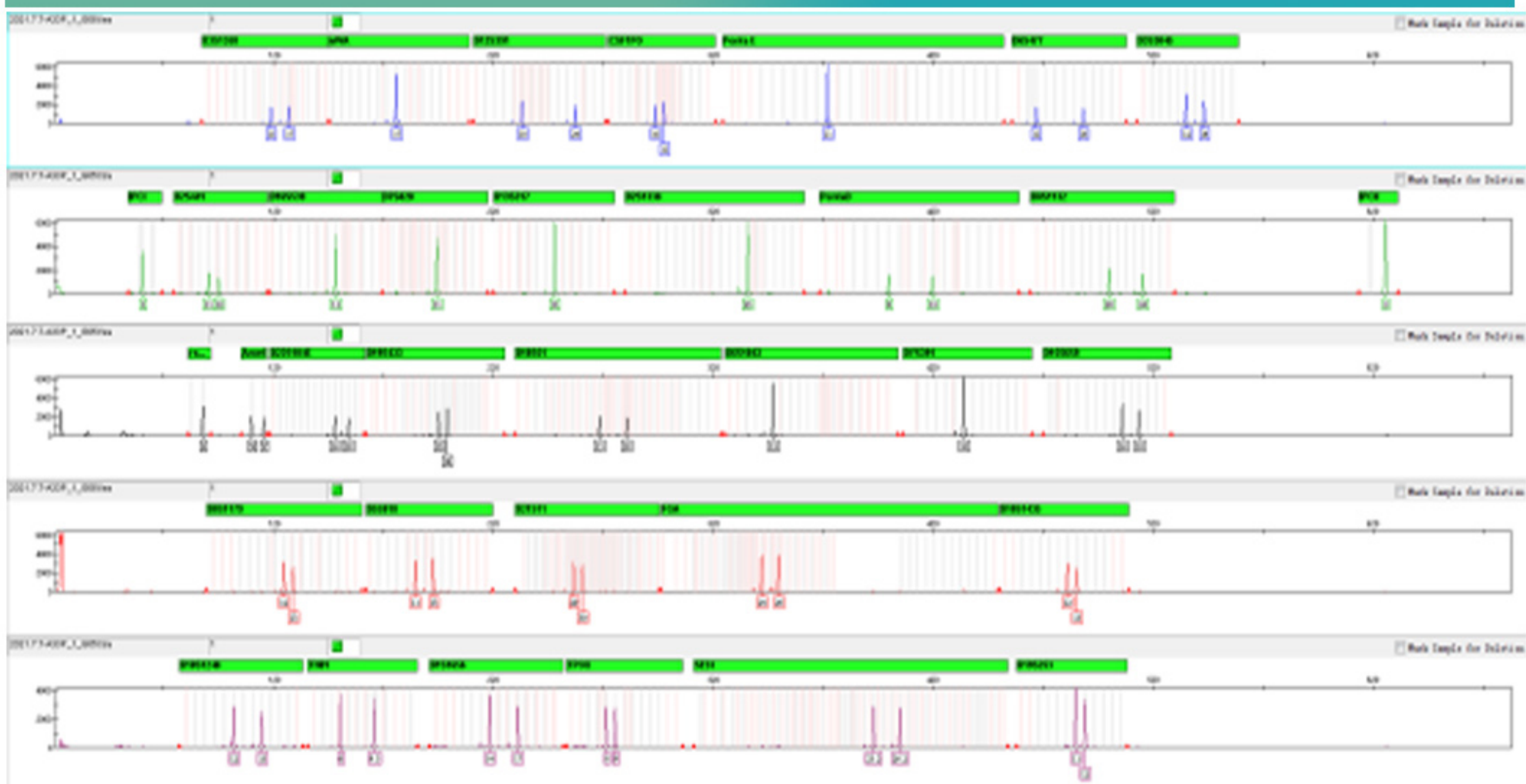
1
Y-chromosome Indel

1
Sex locus

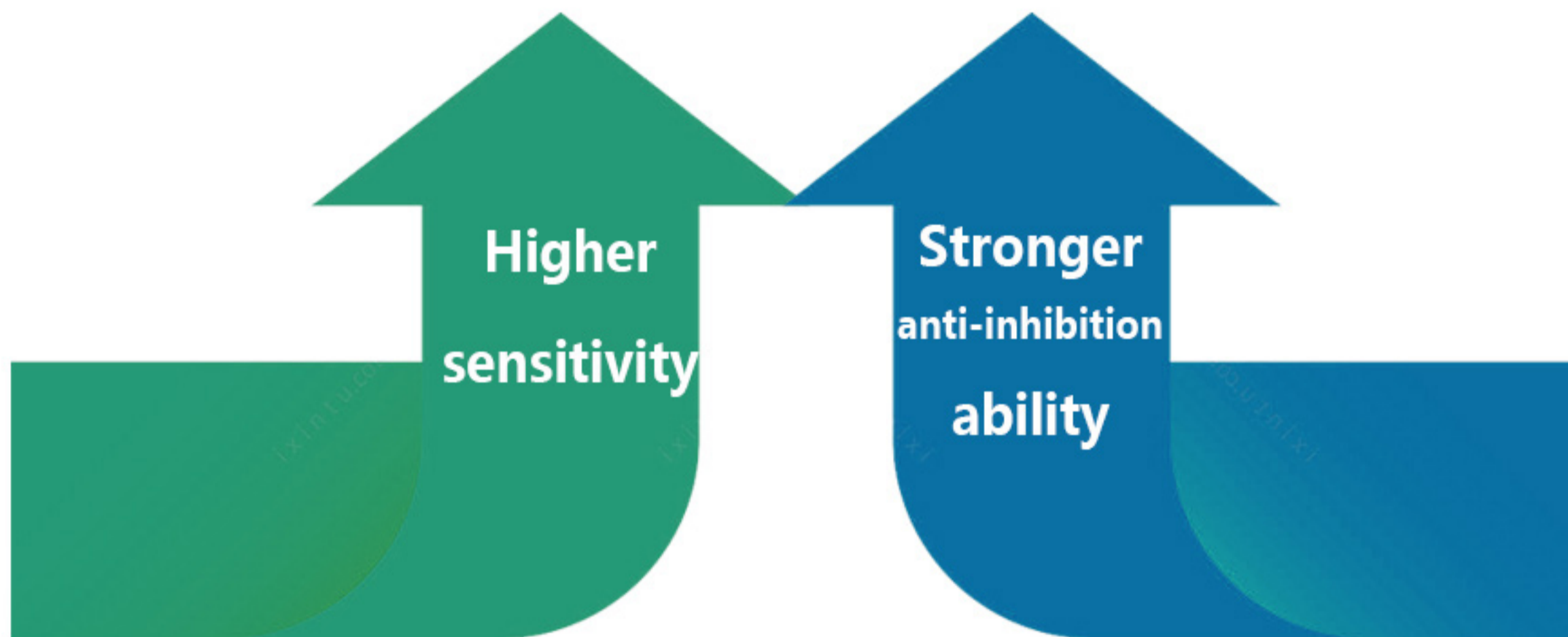


The optimization of high-performance PCR amplification system **brings higher sensitivity and stronger anti-inhibition ability, allowing the minimum detection limit to reach 40 pg**, which greatly improves the detection rate of inhibitor-containing samples. In this way, as much genetic information as possible can be obtained from challenging case samples (including touched, degraded and inhibitor-containing samples), **which is more suitable for the genetic analysis of field biological evidence and degraded samples.**

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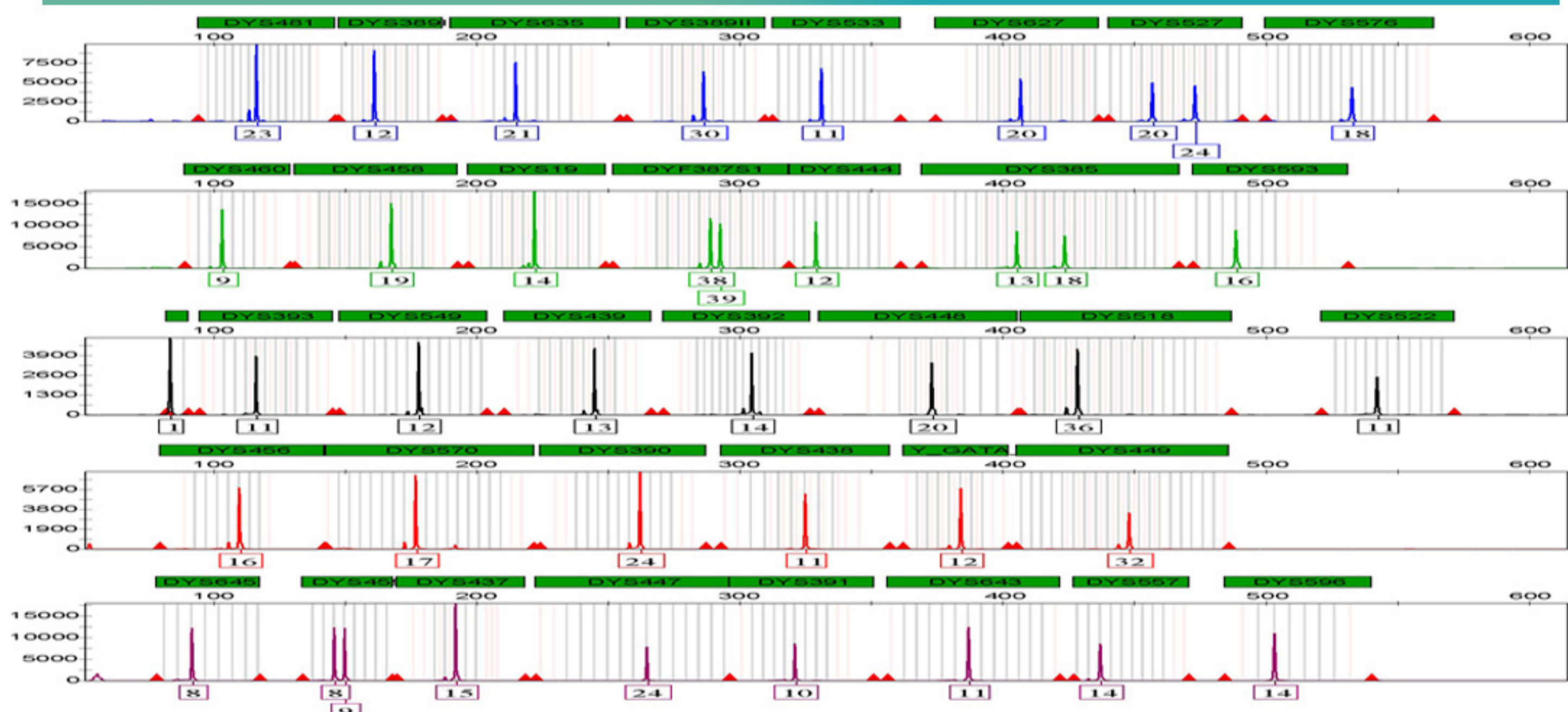


Y41SE Fluorescence Detection Kit (Case Edition)



The optimization of high-performance PCR amplification system **brings higher sensitivity and stronger anti-inhibition ability, allowing the minimum detection limit to reach 40 pg**, which greatly improves the detection rate of inhibitor-containing samples. In this way, as much genetic information as possible can be obtained from challenging case samples (including touched, degraded and inhibitor-containing samples), **which is more suitable for the genetic analysis of field biological evidence and degraded samples.**

Example of Test Results on Honor 1816 Forensic DNA Analyzer



02 Autosome Test Kit

21Plex A27Plex A33Plex NC22Plex

21Plex Fluorescence Detection Kit

21

Autosome STRs

13

CODIS loci

7

Non-consensus

2

Low Stutters

1

Sex locus

High sensitivity, high individual identification rate and high non-parent exclusion rate

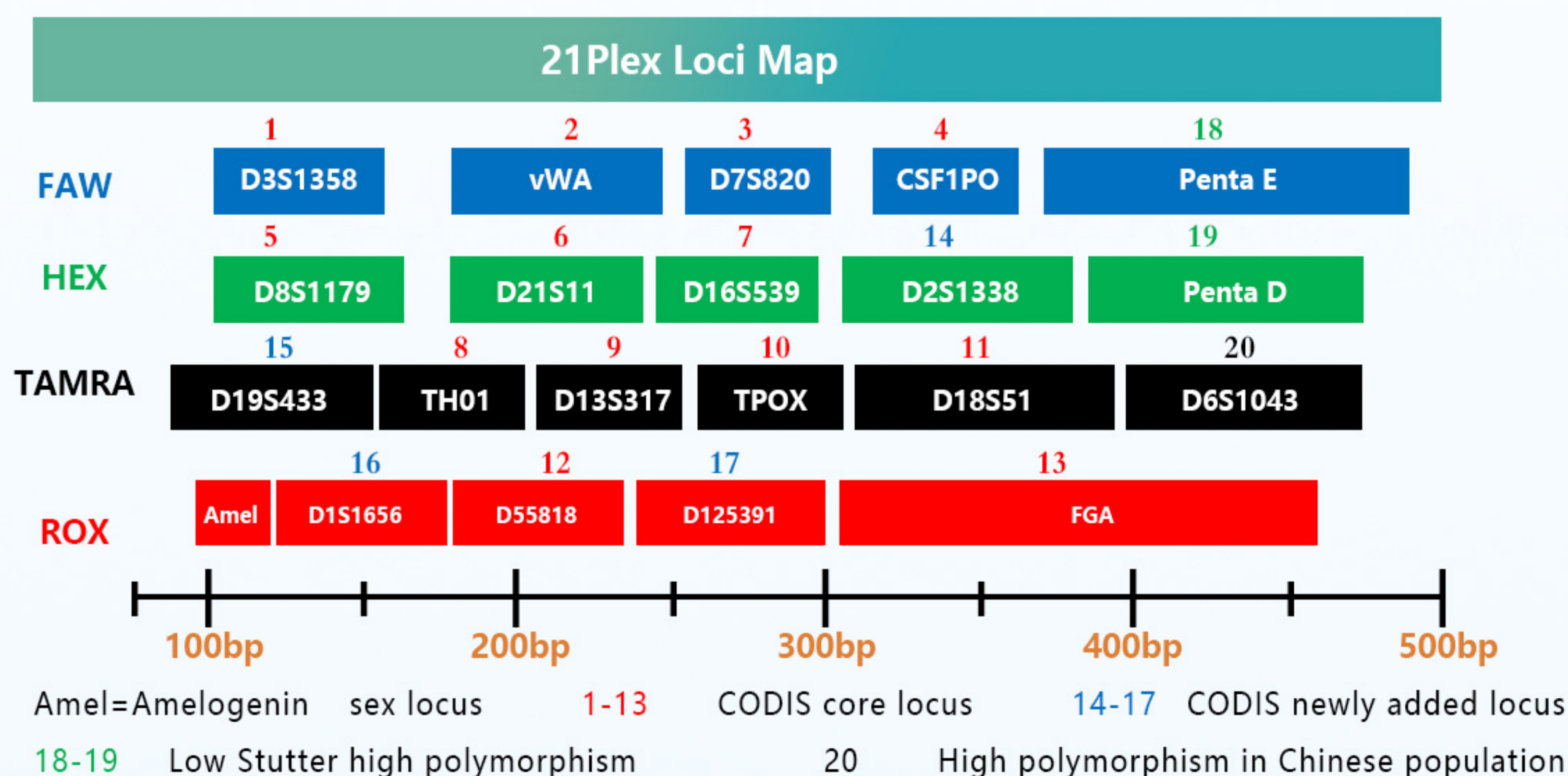
Higher sensitivity (0.125ng), higher accuracy and better color balance, and covers all STR loci of current mainstream kits, with extremely high non-parent exclusion rate and individual identification rate.

Preferential amplification of core loci

The kit amplifies 20 STR loci and 1 sex locus at one time, of which 13 core loci are placed before 300bp to ensure that the core loci are preferentially amplified.

Good compatibility

The kit is suitable for the direct amplification of various samples, such as blood stains, sperm spots, saliva, hair, nails, cartilage and other human tissues, etc. It is also suitable for various DNA extraction methods, such as Chelex-100 method, silica bead method, magnetic bead method, phenol chloroform method, etc.



A27Plex Fluorescence Detection Kit

24

Autosome STRs

1

Y-chromosome STR

1

Y-chromosome Indel

1

Sex locus



Advanced technology

By using 6-color fluorescence detection technology, the composite amplification and detection of 24 autosomal STRs, 1 sex locus, 1 Y-chromosome STR and 1 Y-chromosome Indel in the same tube has been realized, which greatly improves the polymorphism information content and individual recognition rates.



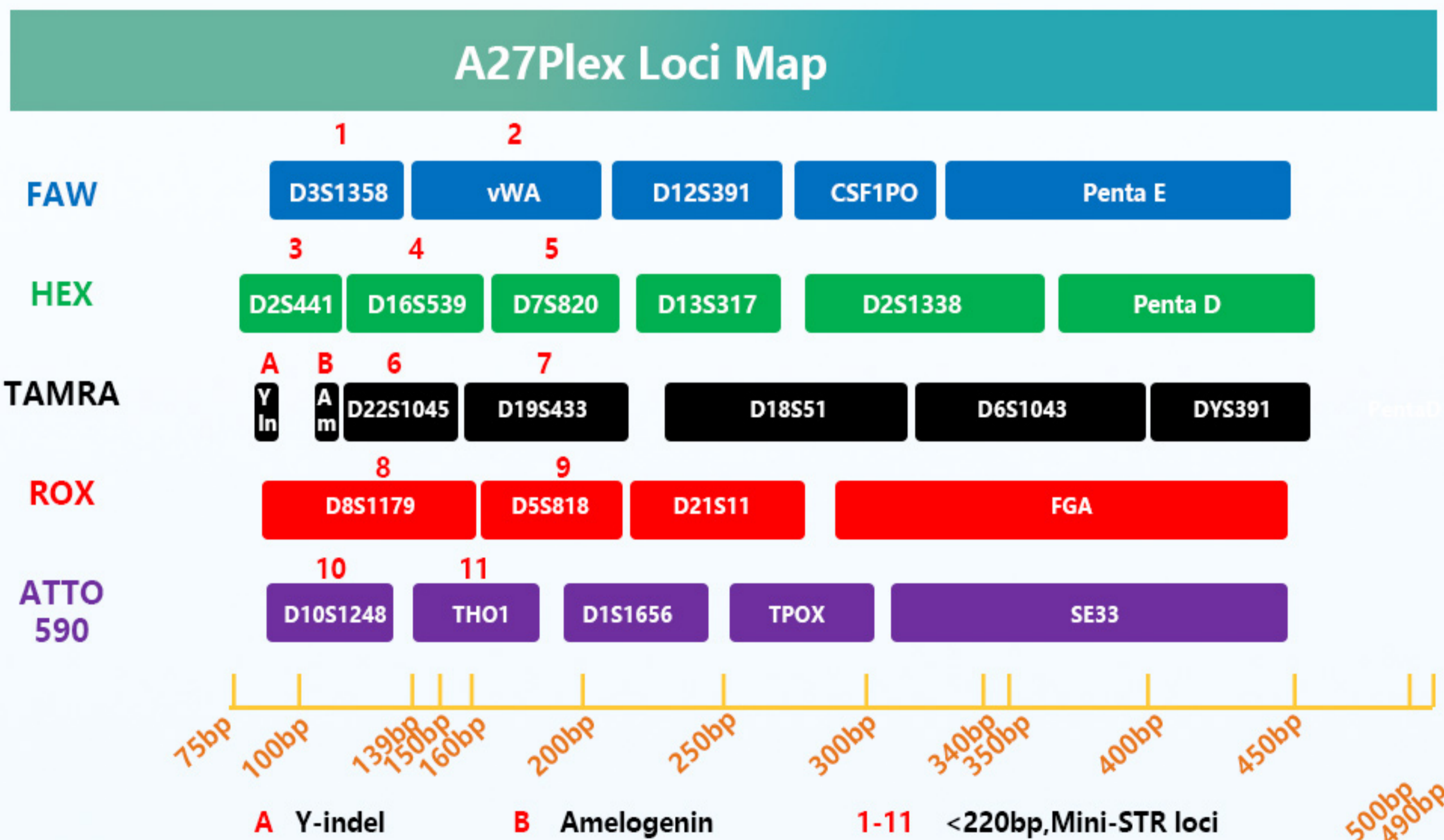
Better compatibility and higher accuracy

The detection targets of the kit contain 20 low mutating STR loci (mutation rate less than 1%) and 7 rapidly mutating loci (mutation rate higher than 1%).



Strong individual recognition

The detection object contains 11 autosomal mini-STRs (amplification length is less than 220bp). When amplifying degraded samples, more loci can be typed. It is suitable for male family investigation and has strong individual recognition power.



A33Plex Fluorescence Detection Kit

30

Autosome STRs

1

Y-chromosome

1

Y-chromosome Indel

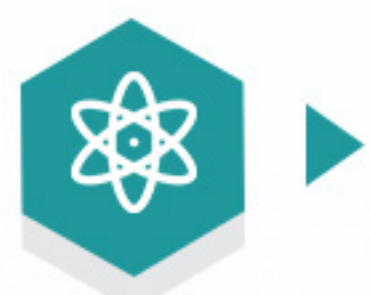
1

Sex locus



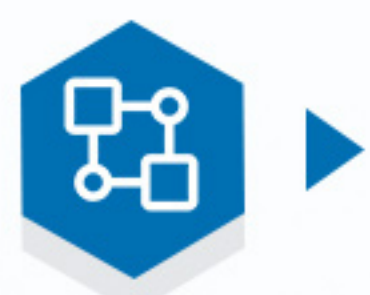
Stronger individual recognition power

The kit is specially designed for domestic autosomal cases, which expands allele typing based on Chinese population data, and selects highly polymorphic loci suitable for Chinese population inheritance. It includes D8S1132, D6S477, D19S253, D3S3045, D15S659, D10S1435 and other anti-trafficking loci, as well as SE33, Penta D, Penta E, FGA, D6S1043 and other highly polymorphic loci.



Better compatibility and higher sensitivity

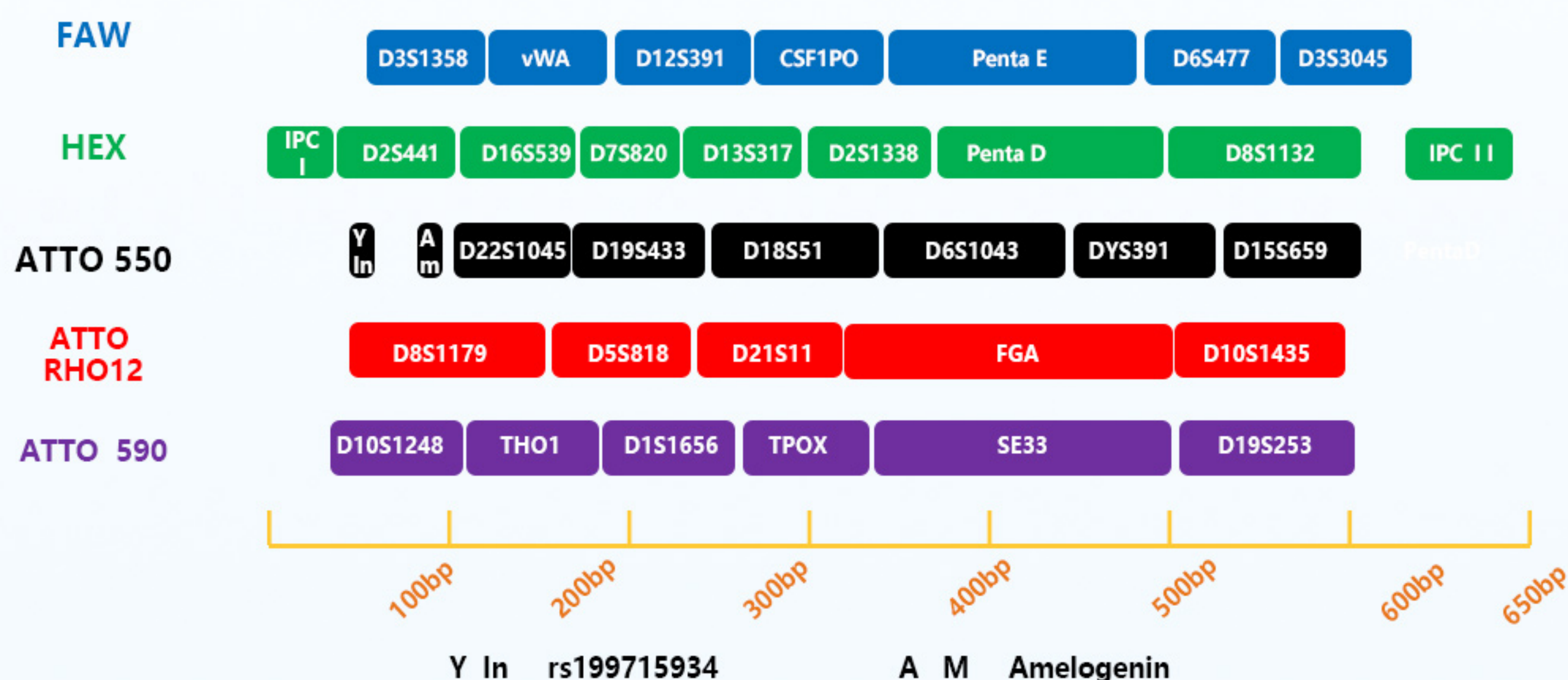
Due to the use of FRET primers, the sensitivity is higher. The addition of internal positive control (IPC) can be used for rapid evaluation of sample quality. It is compatible with the direct amplification of most samples and the amplification of extracted DNA.



Rapid amplification

It is applicable to the anti-trafficking DNA database. It contains 12 mini STRs (loci with amplification length less than 220bp), and more information can be obtained from degraded DNA samples. The theoretical amplification time is about 70 minutes, which can obtain evidence faster.

A33Plex Loci Map



NC22Plex Fluorescence Detection Kit

The kit is a 5-color fluorescence detection platform which can be used to conduct multiplex amplification to detect 20 supplementary loci, 1 CODIS locus and 1 sex locus Amelogenin.

20 Loci **1** CODIS locus **1** Sex locus



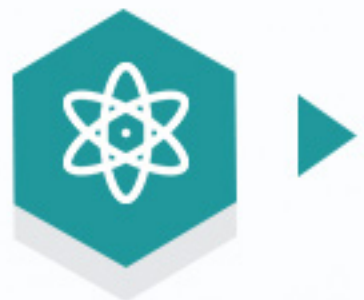
Fast speed

The kit has ultra-high resolution, sensitivity and anti inhibitor ability. The amplification time is less than 1.5 hours.



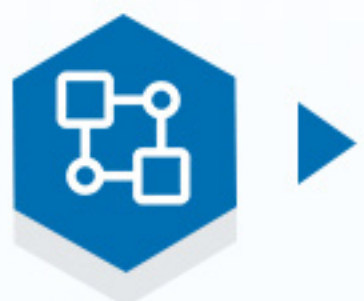
More tested loci

When combined with the A27plex Fluorescence Detection Kit produced by our company, the number of detected loci can reach as many as 44.



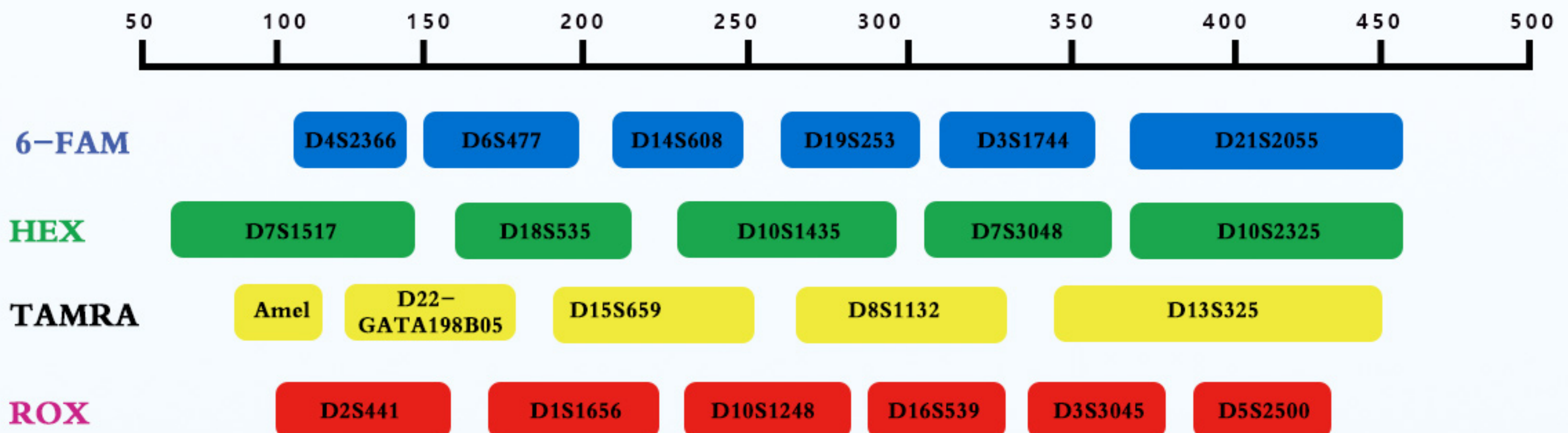
Good compatibility

The kit features good compatibility of test materials, allowing the direct amplification of various test materials and amplification of extracted DNA.



Wide application scope

The kit can be used for forensic analysis, kinship test, scientific research and other human genetic identification purposes.



NC22Plex Loci Map

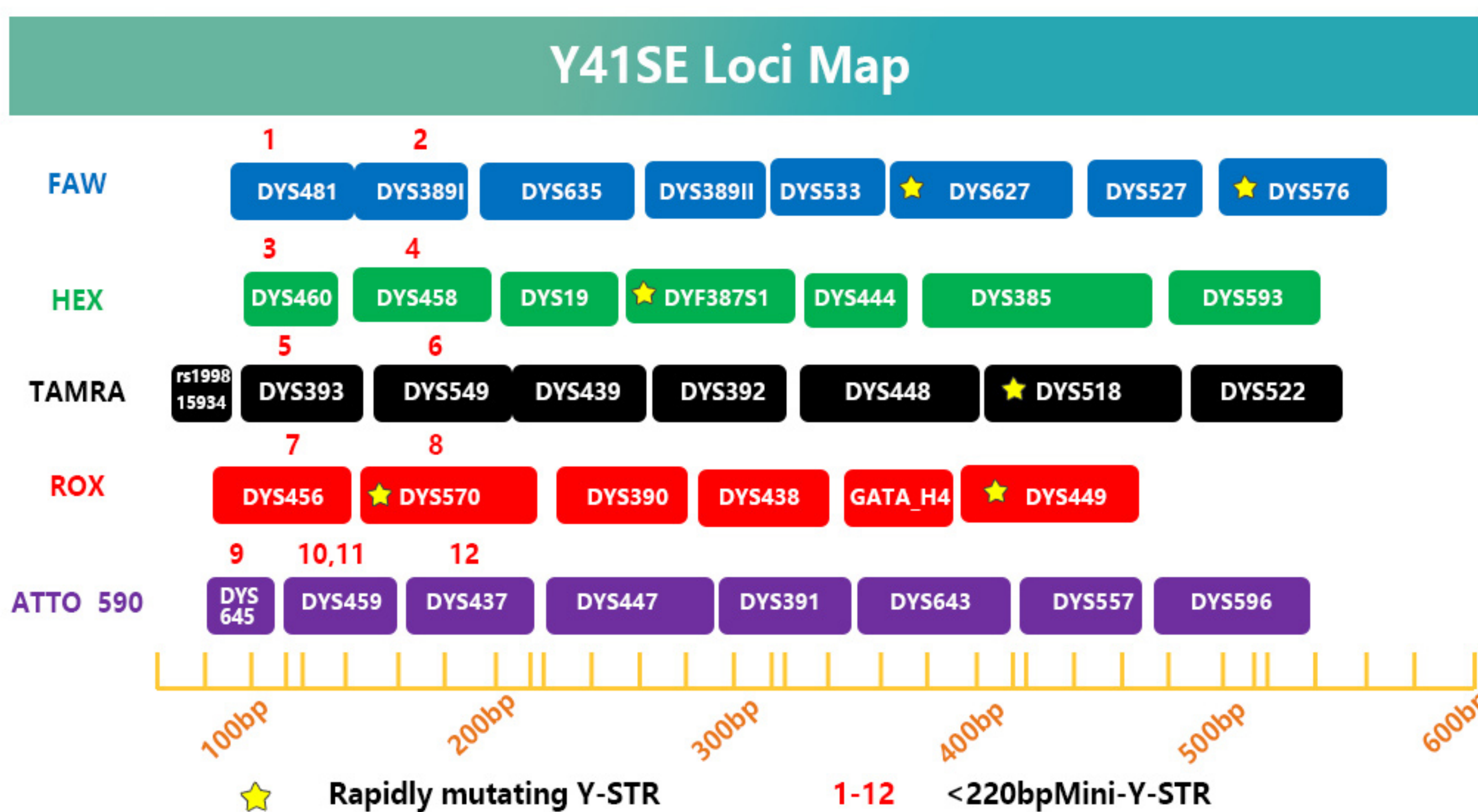
03

Y-chromosome Test Kit

Y41SE Y44SE Y62Plex Y-COM

Y41SE Fluorescence Detection Kit

The kit is a 6-color fluorescence detection platform which simultaneously amplifies 40 Y-chromosome STR loci, including 33 low mutating STR loci (mutation rate less than 1%) and 7 rapidly mutating loci (mutation rate more than 1%), and an ultra-low mutating Y-chromosome STRs.



• Efficient and fast

By using high-efficiency DNA polymerase, the PCR reaction time is as short as 70 minutes, which greatly improves the detection efficiency.



• Good compatibility

The kit is compatible with the direct amplification of most test materials and the amplification of extracted DNA.



• Wide application scope

The kit can fully meet the needs of case investigation, DNA library building, anti-abducting and trafficking, and kinship identification.

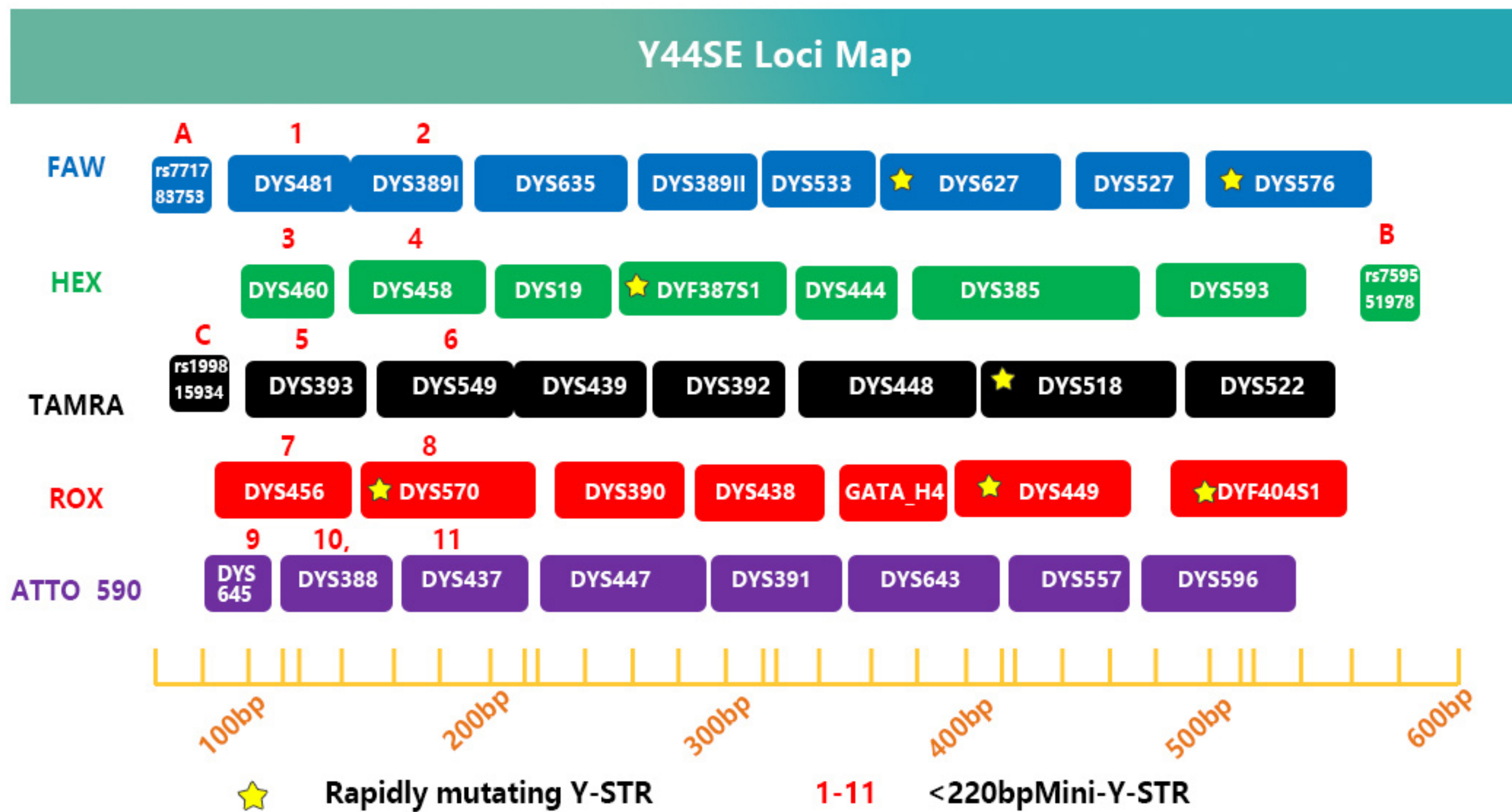


• Strong individual recognition power

Due to its strong individual recognition power, the kit can be used for Y-STR library building, which is suitable for male family screening. The test targets include all 35 loci that are required and preferred in the Y library building standard.

Y44SE Fluorescence Detection Kit

The kit is a 6-color fluorescence detection platform which simultaneously amplifies 44 Y-chromosome STR loci, including 32 low mutating STR loci (mutation rate less than 1%) and 9 rapidly mutating loci (mutation rate more than 1%), and 3 ultra-low mutating Y-indels.



6-color fluorescence

The kit is a 6-color fluorescence detection platform which simultaneously amplifies 44 Y-chromosome STR loci.



Strong individual recognition

Due to its strong individual recognition power, the kit can be used for Y-STR library building, which is suitable for male family screening. The test targets include all 35 loci that are required and preferred in the Y library building standard.



Good compatibility

The kit is compatible with the direct amplification of most test materials and the amplification of extracted DNA.



Efficient and fast

By using high-efficiency DNA polymerase, the PCR reaction time is as short as 60 minutes, which greatly improves the detection efficiency.



Support extraction-free direct amplification

The blood spots or saliva spots with filter paper or FTA card as the carrier can be directly amplified without template extraction and purification. It is also suitable for the extracted DNA template and has a very high sample detection rate.

Y62Plex Fluorescence Detection Kit

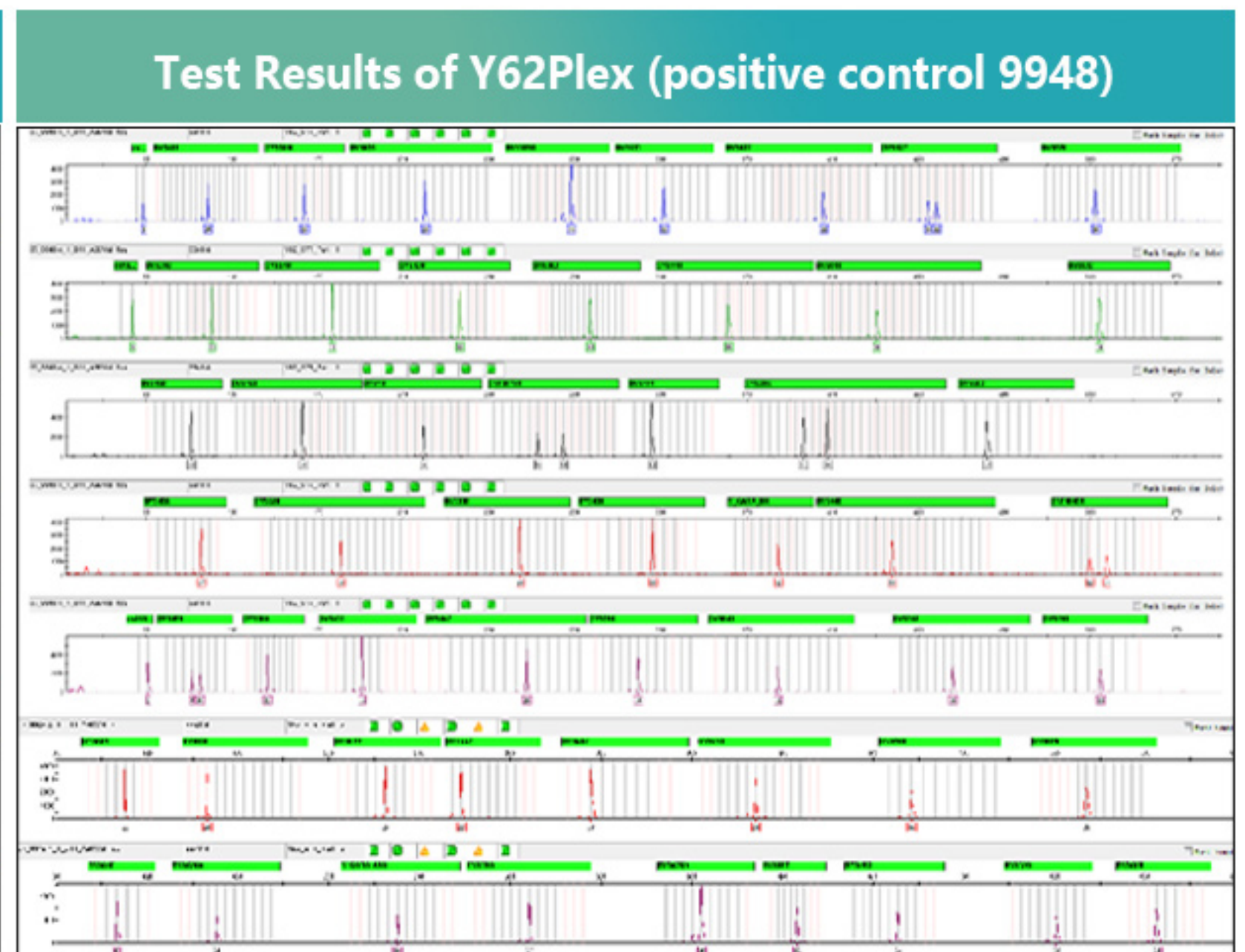
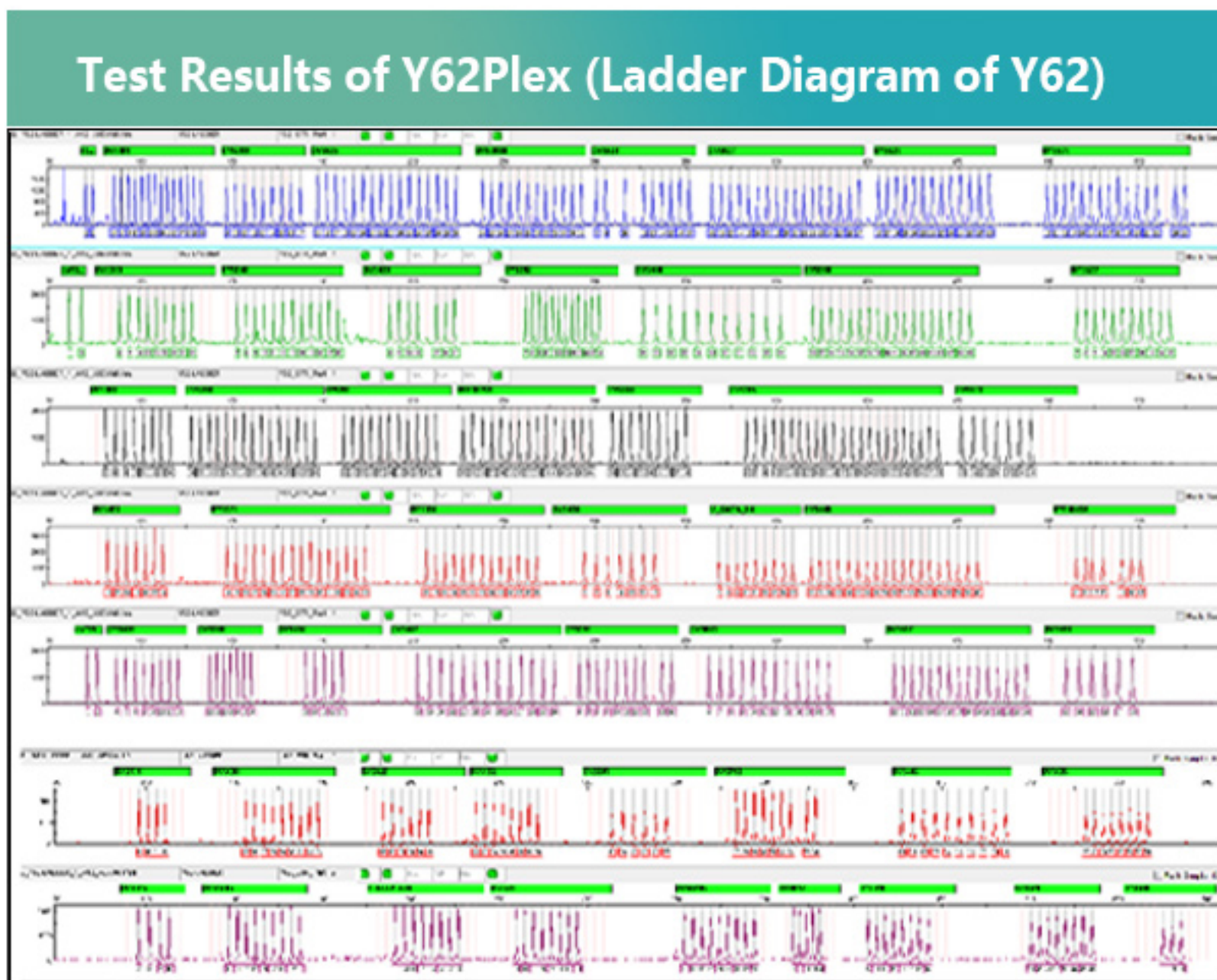
Based on the world's first 8-color FRET technology, 62 loci can be amplified simultaneously.

35
Loci

25
Candidate loci

2
Y-chromosome Indel

8-color
fluorescence technology



• 8-color fluorescence

By adopting the mature 8-color fluorescence technology, more loci can be allocated compared with the traditional 5-color fluorescence.



• High resolution

The correct genotyping of 62 loci can be obtained by single tube reaction, and the resolution is higher than that of other similar products in the market.



• Applicable to degraded materials

More loci can be arranged in small fragments (within 300bp or 220bp), which is suitable for some degraded samples.



• High sensitivity

The optimized PCR buffer system makes it more sensitive and more resistant to inhibition, and improves the detection rate of samples containing inhibitors. The minimum detection limit can reach 50pg.

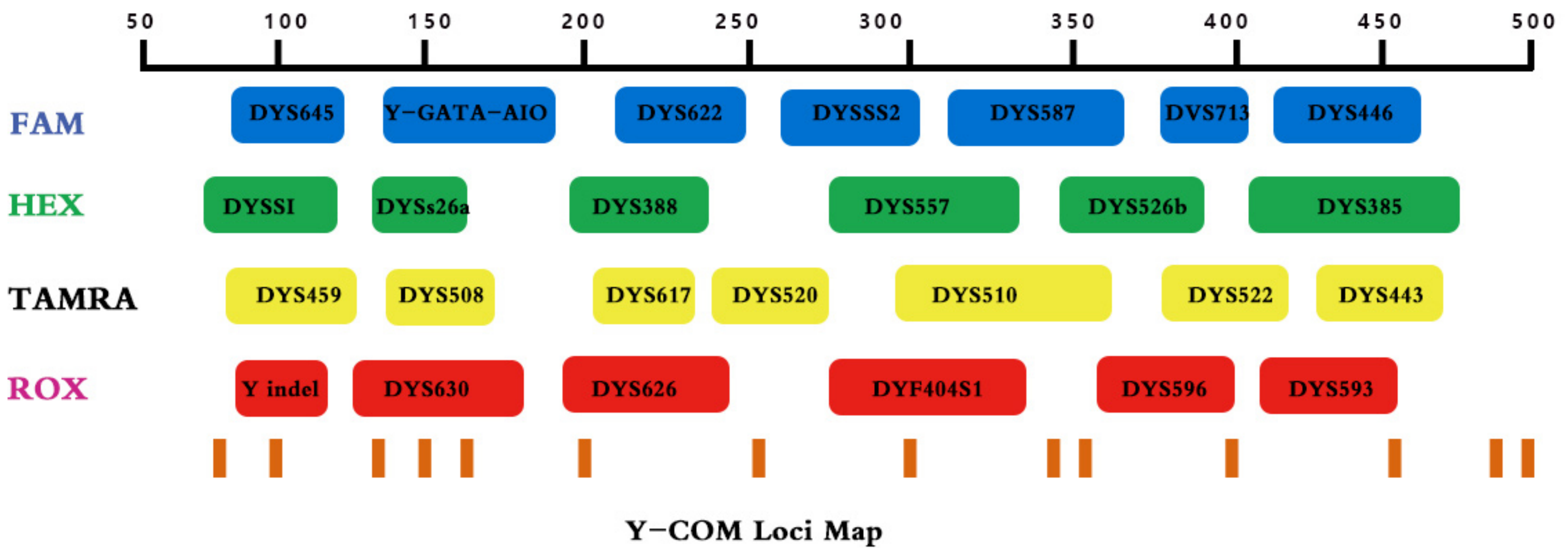


• High individual recognition rate and non-parent exclusion

It has higher cumulative individual identification and non-paternal exclusion rate. It can be used alone or in combination with other commercial kits to provide rapid and high-resolution services for public security criminal investigation, judicial identification and paternity testing.

Y-COM Fluorescence Detection Kit

The kit is a 5-color fluorescence detection platform, with multiplex amplification detection of 29 human Y-chromosome STR loci, including 2 core Y-STR loci, 1 indel locus and 26 non core Y-STR loci.



• Wide application scope

Forensic individual identification, paternity testing, DNA genealogy building, family screening, etc.



• Used in conjunction with Y41SE

When combined with Y41SE, 66 Y-STR loci can be detected.



• Good specificity

It contains multiple exclusive genetic markers, with better polymorphism and heterozygosity, higher individual identification rate and non-paternal exclusion rate.



• Support extraction-free direct amplification

The blood spots or saliva spots with filter paper or FTA card as the carrier can be directly amplified without template extraction and purification. It is also suitable for the extracted DNA template and has a very high sample detection rate.

04

X-chromosome Test Kit

X18Plex

X18Plex Fluorescence Detection Kit

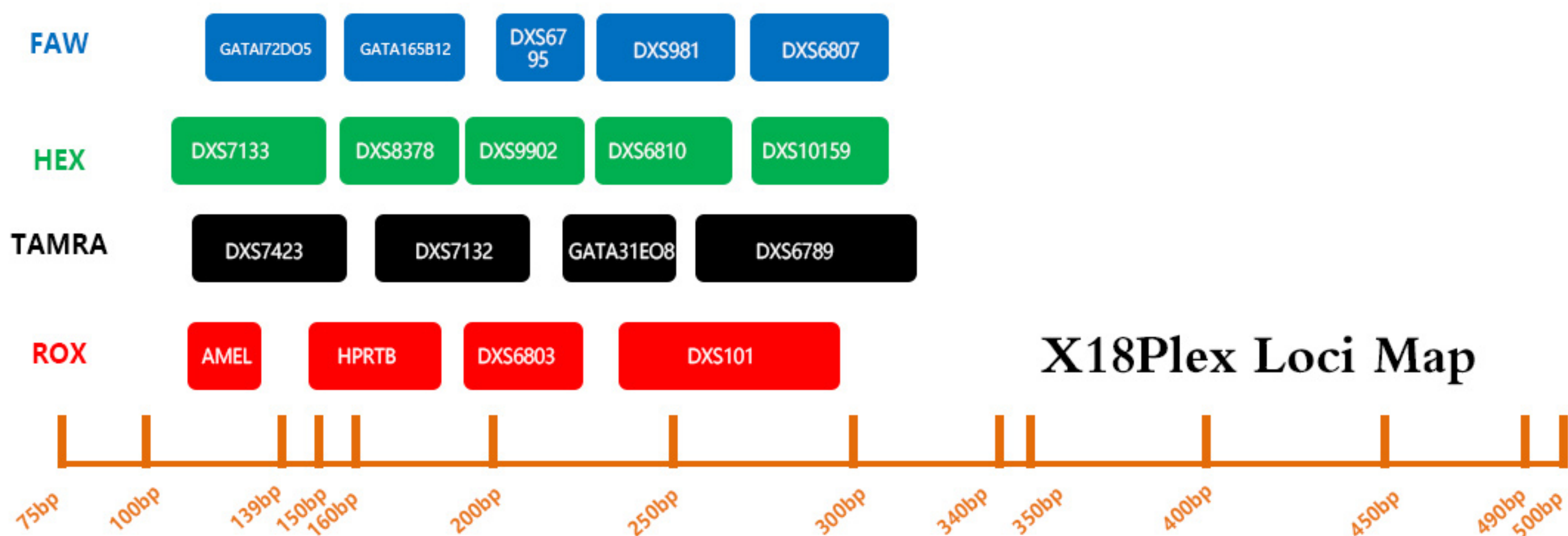
17

X-chromosome

1

Sex locus

- High resolution** The correct genotyping of 18 loci can be obtained by single tube reaction.
- High sensitivity** The optimized PCR buffer system makes it more sensitive and more resistant to inhibition, and improves the detection rate of samples containing inhibitors. The minimum detection limit can reach 125pg.
- Efficient and fast** By using high-efficiency DNA polymerase, the PCR reaction time is as short as 90 minutes, which greatly improves the detection efficiency.
- Extraction-free** The sample does not require DNA extraction, and can be directly used as an amplification template for PCR amplification.
- Good compatibility** The kit is compatible with the direct amplification of most test materials and the amplification of purified DNA.
- Wide application scope** It is applicable to the identification of complex kinship, disputed father daughter relationship, half sister relationship, grandson relationship and other special parental relationship cases. It is an effective supplement to the autosome and Y-chromosome STR kits.



Honor Series Forensic DNA Analyzer

**BREAKING TECHNICAL BARRIERS
CREATING NATIONAL BRAND**

Honor Forensic DNA Analyzers are a series of 1st generation sequencer developed by Superyears with completely independent intellectual property rights. As a type of sequencer developed based on Sanger sequencing principle, Honor supports 6-color and 8-color fluorescence, has selectable 16 and 24 channels, and has a Chinese and English bilingual operation interface, which can be applied to gene sequencing and fragment analysis. Honor Series Forensic DNA Analyzers break down the long-term monopoly of foreign enterprises in this field and provide powerful technical platforms for public security criminal investigation and judicial identification.



Honor1616



Honor1816



Honor1624/1824

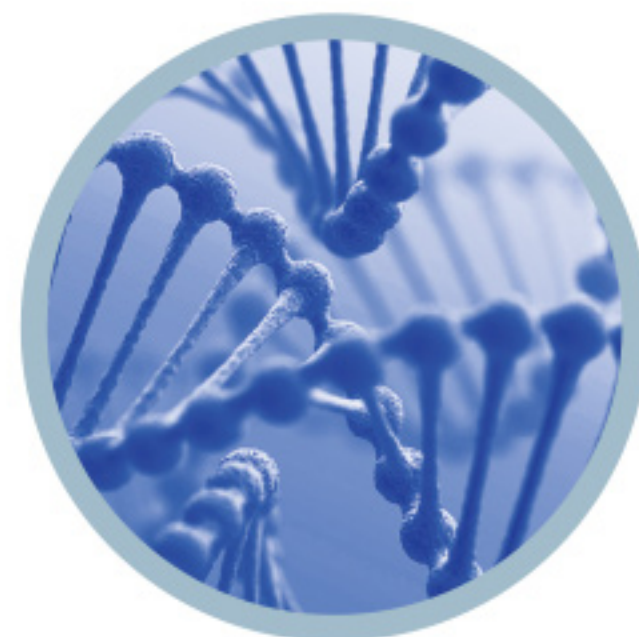
APPLICATION SCENARIO



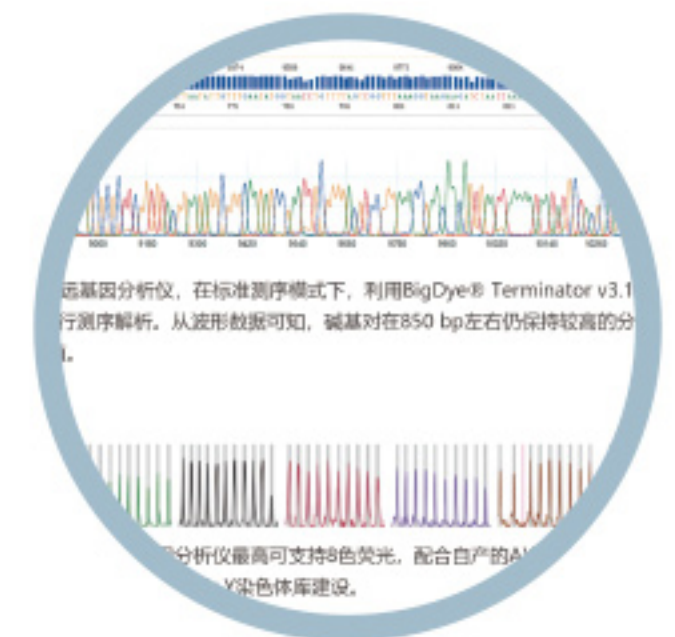
Individual identification and paternity test



DNA library building



Routine case detection in forensic DNA laboratory



Gene sequencing and fragment analysis

PRODUCT FEATURES

Made-in-China

Independent intellectual property rights, 8 invention patents, 17 utility model patents, and 4 software copyrights.

Worry-free after-sales service

Comprehensive technical training, mature after-sales service, customizable instrument R&D, software function customization, etc.

Fully open platform

Compatible with reagents, consumables and detection kits of mainstream manufacturers.

Cost-effective

Cost-effective products, reagents, consumables, and free software upgrade.

Efficient library building

8-color fluorescence technology supports detecting over 70 STR loci, realizing autosomal + Y-chromosome library building at one time.

Basic parameter

Channel: 16/24

Number of dyes: 6/8

Capillary length: 36cm/50cm

Sample loading mode: Fully automated loading, compatible with 96-well plate (* 2) and 8-row tube

polymer injection mode: Fully automated

Laser type: Solid state

Laser wavelength: 505nm

Fluorescent dye wavelength: >520nm

Performance index

Temp accuracy: $\Delta T \leq 0.2^{\circ}\text{C}$

Resolving power: 1bp

Read length: > 800bp

Working environment

Relative humidity: 20% ~ 60% (non condensing)

Atmospheric pressure: 86kpa ~ 106 kPa

Working power supply: 220V AC, 50Hz . **Single phase:** 10A, 2200 VA

Ambient temperature: 20 °C ~ 30 °C, the temperature fluctuation during operation shall not exceed $\pm 2^{\circ}\text{C}$.

Outline dimension

Size (L*W*H): Door closed - 610*532*812mm

Door fully open: 1225*532*812mm

Weight: Approximately 95kg

MARKET COVERAGE

Superbio has provided DNA reagents and services for public security organs in over 30 provinces and cities (districts) such as Jiangsu, Shanghai, Fujian, Sichuan, Inner Mongolia, Gansu and Henan, and has undertaken the building of million-level autosome and Y-chromosome DNA library in the public security system.



QUALITY/SERVICE GUARANTEE



Products have passed ISO9001, ISO13485 and other quality system



Products are independently researched and developed, with dozens of technical invention patents.



Superbio has a series of strict quality assurance process and service guarantee system to provide customers with high quality and timely pre-sales, in-sales and after-sales services.

Science technology serves for public security



Jiangsu Superbio Biomedical (Nanjing) Co., Ltd.

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