Ingenomics™ AutoProfiler STR Kit

1. Product Introduction

Ingenomics™ AutoProfiler STR Kit evaluates 27 STRs, Amelogenin & IQC (Internal Quality Control). Ingenomics™ AutoProfiler STR Kit is used for forensic analysis, kinship testing and scientific research and other aspects of human genetic identification.

The detected genetic loci are compatible with conventional databases, including the latest CODIS locus and D6S1043 with high polymorphism in the, and two Y-indels are Rs2032678 and Rs771783753.

This product is ISO18385 certified forensic grade. According to the scope of this certification the components include the amplification reagents, while the Size Standard, Matrix Standards, and Allelic Ladder post-amplification analysis reagents are beyond this standard.

2. Reagent Storage

- After receiving the kit, if it is not used immediately, please store it at -20°C for a long-time storage.
- After the kit is opened for first use, store the kit components at 4°C and avoid repeated freezing- thawing; if the kit, post first use, is not further intended to be used for a long period, please store the Master Mix and the enzyme components at -20°C.
- Please store the post-amplification components of the kit at 4°C, avoid repeated freezing and thawing, and avoid contact with the pre-amplification kit components to prevent contamination.

3. Genetic Analyzer

For applications with the Applied Biosystems® 3500/3500XL Genetic Analyzers, ensure/we recommend preheating the oven to 60°C. Use the following parameters when setting up the instrument protocols. Please refer to the instrument user manual for more details.

Table 1. Genetic Analyzer settings

Genetic Analyzer	Run module	Dye set	Injection voltage, time	
ABI®3500/3500XL	HID36_POP4	ING6	3 kV	10sec*
ABI®3130/3130XL	HIDFragmentAnalysis36_POP4	ING6	3 kV	10sec*
ABI®3730/3730XL	Fragment Analysis	ING6	3 kV	10sec*

*The injection time can be modified according to the height of the peak. The proposed modification range is （2- 24sec）， to increase or decrease the height of the observed peak.

4. PCR Amplification System

Please always vortex the fully thawed Master Mix and Primer Mix for 10 seconds before preparing the reaction components, then centrifuge briefly.

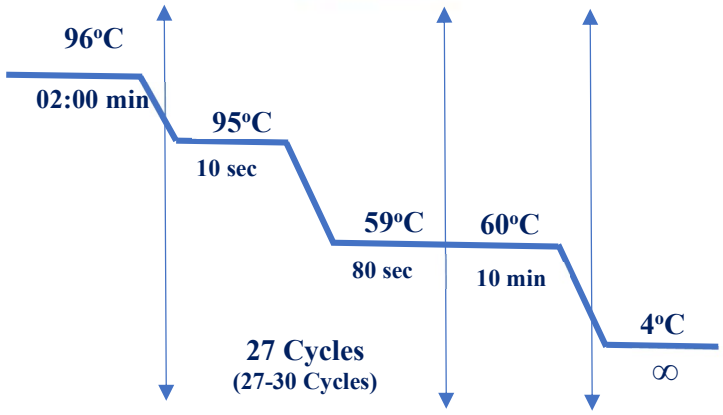
Table 2. Ingenomics™ AutoProfiler autosomal STR Kit standard Amplification System

Reactive components	10μL volume	25μL volume	Final concentration
Ingenomics™ AutoProfiler 3.3×Master Mix D	2.5μL	7.5μL	1×
Ingenomics™ AutoProfiler 10× Primer Mix	1μL	2.5μL	1×
Reactive components DNA（0.25-1ng）	1-6.5μL	1-16.25μL	—
Add ddH2O to the final volume of the reaction	Up to 10μL	Up to 25μL	—

NOTE: (1) If the PCR Amplification mixture is not thoroughly mixed, it may result in a decrease inAmplification yield or an imbalance between sites. (2) Determine the number of Amplification reactions, including positive and negative controls. Add 1~2reaction systems to eliminate pipetting errors.

5. Amplification Procedure

Figure 1. Thermal Cycler PCR Reaction Program Setup (As set on ABI-9700)



AutoProfiler PCR Conditions

Note: (1) Prolonged storage of amplified samples at 4 °C or higher may degrade the product.

(2) The number of amplification cycles and the final extension time depends on the specific sample. It is recommended to use 28 cycles and the final extension for 60 min.

6. Electrophoresis Detection

(1) Standard sample loading system:

Component	Volume (μL)
Formamide	8.8~8.5
Size standard ING600	0.2~0.5
PCR product	0.5~1.5*

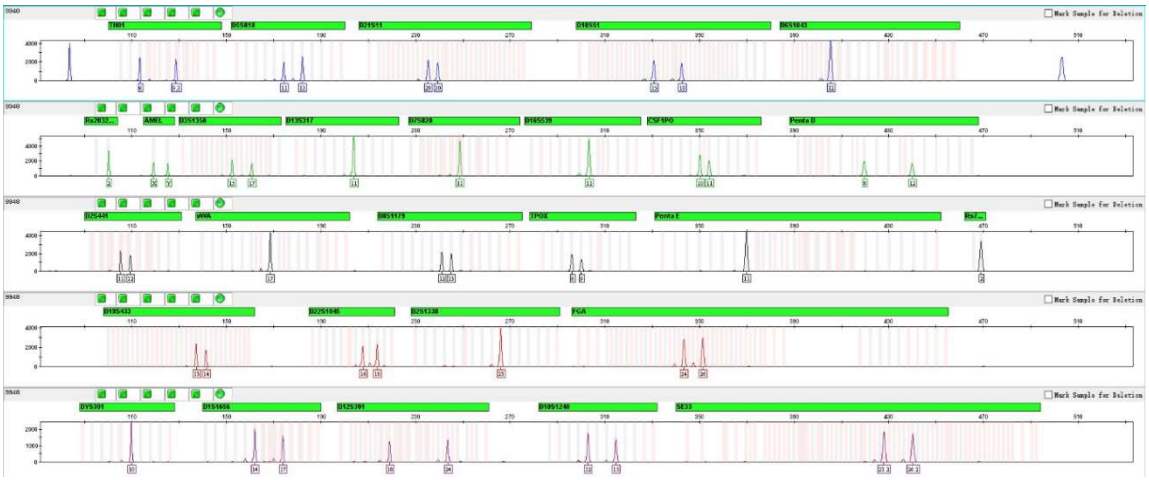
*Appropriately increase or decrease the amount of PCR product according to the product concentration and thesensitivity of the sequencer, the recommended amount is 1 μL.

1. Vortex formamide and Ingenomics™ Size Standard QD600 mixture for 10–15 seconds.
2. Pipette 10μl of mixture into each well.
3. Add 1μl of amplified sample (or 1μl of Allelic Ladder) to each well. Cover wells with appropriate septa.

Supplementary Table 1. Kit Components Table

Reagent test kit	Component name	200 reactions
Amplification Component Kit	Ingenomics™ AutoProfiler 10× Primer Mix	250μL*2
	Control DNA (2ng/μL)	25μL*1
	Nuclease-Free Water	1800μL * 2
Taq enzyme kit	Ingenomics™ AutoProfiler 3.3 × Master Mix V	750μL*2
Detection component kit	Ingenomics™ AutoProfiler Allelic Ladder	40μL*1
	Ingenomics™ AutoProfiler Size Standard ING600	75μL *2
	6-Dye Matrix Standards	25μL*1

9948 DNA Control (1 ng) amplified with the IngenomicsTM AutoProfiler STR Kit and analyzed on an Applied Biosystems® 3500 Genetic Analyzer.



Locus	Fluorescent Label	9948 Genotype
TH01	FAM	6/9.3
D5S818	FAM	11/13
D21S11	FAM	29/30
D18S51	FAM	15/18
D6S1043	FAM	12
Rs2032678	HEX	2
Amel	HEX	X/Y
D3S1358	HEX	15/17
D13S317	HEX	11
D7S820	HEX	11
D16S539	HEX	11
CSF1PO	HEX	10/11
Penta D	HEX	8/12
D2S441	TAINGA	11/12
vWA	TAINGA	17
D8S1179	TAINGA	12/13
TPOX	TAINGA	8/9
Penta E	TAINGA	11
Rs771783753	TAINGA	2
D19S433	ROX	13/14
D22S1045	ROX	16/18
D2S1338	ROX	23
FGA	ROX	24/26
DYS391	PUR	10
D1S1656	PUR	14/17
D12S391	PUR	18/24
D10S1248	PUR	12/15
SE33	PUR	23.2/26.2