Ingenomics™ X Profiler STR Kit

1. Product Introduction

Ingenomics™ X Profiler STR Kit,19 X-STR loci and 1 sex locus are detected by multiplex amplification technology using 5-color fluorescent labeling, which is used for human genetic identification such as forensic analysis, kinship detection and scientific research.

The detected genetic loci contain DXS6795, DXS6803, DXS6807, DXS9907, DXS7423, GATA172D05 , DXS101, DXS9902, DXS7133, DXS6810, GATA31E08, DXS6800, DXS981, DXS10162, DXS6809, GATA165B12, DXS10079, DXS10135, HPRTB and Amelogenin.

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, we recommend preheating the oven to 60°C before use. Use the following parameters when setting up the instrument program. Please refer to the instrument user manual for more details.

Table 1 Ingenomics™ X Profiler STR Kit genetic analyzer parameter settings:

Genetic Analyzer	run module	dye group	Injection voltage, time
ABI®3500/3500XL	HID36_POP4	ING5	3 kV 10sec*
ABI®3130/3130XL	HID Fragment Analysis 36_POP4	ING5	3 kV 10sec*
ABI PRISM®3100/3100-Avant	HID Fragment Analysis 36_POP4	ING5	3 kV 10sec*
ABI 310	GS STR POP4(1ml) E5	ING5	1.5 kV 5sec*

* The injection time can be modified according to the height of the peak, and the recommended

modification range is (2-24 seconds) to increase or decrease the observed signal value.

4. PCR amplification system

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

Table 2. Ingenomics™ X Profiler STR Kit amplification system

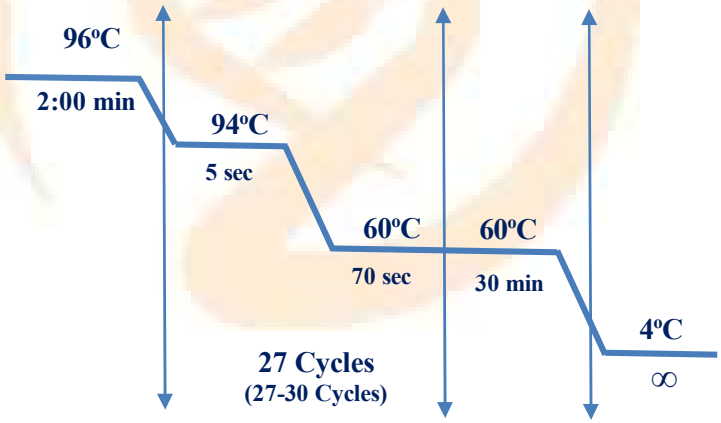
Reactive components	25 μL System addition amount
IngenomicsTM X Profiler 2.5× Buffer B	10 μL
IngenomicsTM X Profiler 19X-D 5× Primer Mix	5 μL
IngenomicsTM X Profiler Taq DNA Polymerase Ⅱ	0.5 μL
Template DNA	1 ng
Add dIH2O to the final volume of the reaction	25 μL

NOTE: (1) If the PCR amplification mixture is not thoroughly mixed, it may result in a decrease of amplification yield or an imbalance between loci.

(2) When determining the number of amplification reactions, positive and negative controls should be included. Add 1-2 additional reactions to eliminate pipetting errors. This step causes loss of a small amount of reagent but ensures that all samples have sufficient PCR reaction system, and also ensures that each reaction tube contains the same PCR reaction system.

5. Amplification Procedure

Figure 1. Thermal Cycler PCR Reaction Program Setup (ABI 9700)



X Profiler PCR Conditions

NOTE: (1) The number of PCR amplification cycles can be adjusted to 27-30 cycles according to the actual situation.

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

6. Electrophoresis Detection

1. Standard sample loading system:

2.

Component	Volume (μL)
Formamide	8.8~8.5
Size standard ING550	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 the sensitivity of the sequencer, the recommended amount is 1 μL.

3. Vortex formamide and Ingenomics™ Size Standard ING550 mixture for 10-15 seconds.
4. Pipet 10μl of mixture into each well.
5. 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	100 reactions
Amplification Component Kit	Ingenomics™ X Profiler 5× Primer Mix	500μL*1
	Control DNA (2ng/μL)	25μL*1
	Nuclease-Free Water	1800μL * 1
Taq enzyme kit	Ingenomics™ X Profiler 2 × Master Mix V	1250μL*1
Detection component kit	Ingenomics™ X Profiler Allelic Ladder	40μL*1
	Ingenomics™ X Profiler Size Standard ING550	150μL * 1
	5-Dye Matrix Standards	25μL*1

Supplementary Table 2 Ingenomics™ X Profiler Genetic Information

Locus	Fluorescent Label	9947A Genotype
DXS6795	FAM	12/13
DXS6803	FAM	11.3/12
DXS6807	FAM	12/14
DXS9907	FAM	12/13
DXS7423	FAM	14/15
AMEL	HEX	X
GATA172D05	HEX	10
DXS101	HEX	24/26
DXS9902	HEX	11
DXS7133	HEX	9/10
DXS6810	HEX	18/19
GATA31E08	TAINGA	11
DXS6800	TAINGA	18/19
DXS981	TAINGA	13.3/14.3
DXS10162	TAINGA	19
DXS6809	TAINGA	31/34
GATA165B12	ROX	9/11
DXS10079	ROX	20/23
DXS10135	ROX	21.1/27
HPRTB	ROX	14