

Investigator[®] Argus X-12 QS Kit

Advanced X-chromosomal analysis with a unique Quality Sensor

The Investigator Argus X-12 QS Kit amplifies 12 X-chromosomal STR markers that enable informative kinship and paternity testing. The kit also includes an autosomal alignment marker and Amelogenin, as well as a unique performance control called the Quality Sensor (QS). Besides kinship and paternity testing, the kit is also highly suitable for forensic stain analysis, such as female traces on a male background. The 12 X-chromosomal STR markers are clustered into four linkage groups (three markers per group; Table 1), and thus, each set of three markers is handled as a haplotype for genotyping.

The features of the Investigator Argus X-12 QS Kit include:

- Co-amplification of 12 X-chromosomal and D21S11 as an autosomal alignment marker, to minimize the risk of sample mix-up
- An integrated Quality Sensor for better decision making and data interpretation
- Faster results using FRM 2.0 PCR chemistry that allows for a PCR speed of approximately 80 minutes
- High sensitivity and inhibitor resistance

For more information on the Investigator Argus X-12 QS Kit technical specifications and dyes, see Tables 2–3.

Table 1. Linkage groups

Linkage group	
1 (Xp22)	DXS8378 – DXS10135 – DXS10148
2 (Xp11)	DXS7132 – DXS10074 – DXS10079
3 (Xp26)	HPRTB – DXS10101 – DXS10103
4 (Xp28)	DXS7423 – DXS10134 – DXS10146

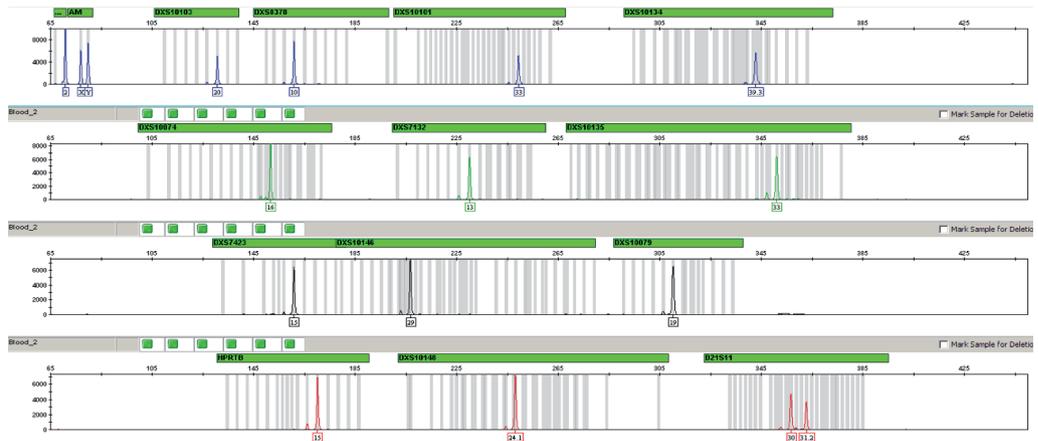


Figure 1. Electropherogram of the Investigator Argus X-12 QS Kit. Analysis was performed on an Applied Biosystems® 3500 Genetic Analyzer using 500 pg DNA extracted from 10 µl blood using the EZ1® DNA Investigator Kit. Allele assignment was performed using the GeneMapper® ID-X Software and the Investigator Argus X-12 QS Template File.

A Quality Sensor as an internal performance control

The unique Quality Sensor is amplified together with the DNA in your sample, to provide you with additional, valuable data for your quality control and performance checks. With the QS, you will always know if you are dealing with:

- Successful PCR amplification
- Absence of DNA
- Failed PCR amplification

Without QS you never know if your PCR run failed, or if there was no DNA present in your sample. The usual course of action would be to repeat the PCR. With the QS, you will always know if repeating the PCR will yield better results, since it enables you to determine whether there was DNA present in your sample, thus allowing you to get the most out of your precious DNA samples (Figure 2–3).

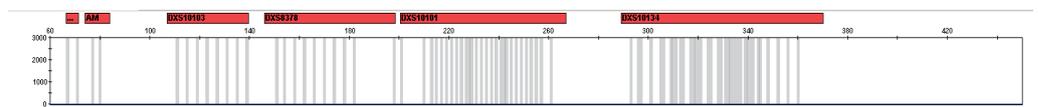


Figure 2. Failed PCR amplification. Absence of QS and sample amplicon peaks across the profile. The PCR run needs to be repeated.

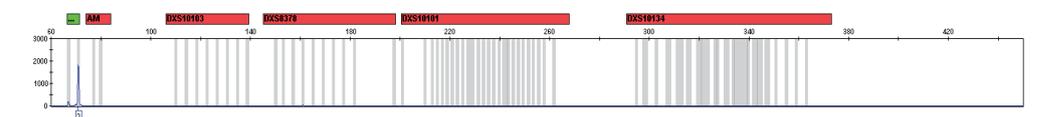


Figure 3. Absence of DNA in your sample. A peak is observed for QS, but no sample peaks appear across the profile. Repeating the PCR is not necessary.

Align your X-chromosomal profile with an autosomal profile

In order to further streamline your workflow, in addition to the X-chromosomal STR markers, the Investigator Argus X-12 QS Kit also contains the highly discriminative autosomal marker D21S11. This marker enables alignment of the Investigator Argus X-12 QS Kit profile with any other STR profile from the expanded CODIS or ESS standard set of markers to minimize the risk of a sample mix-up (Figure 4).

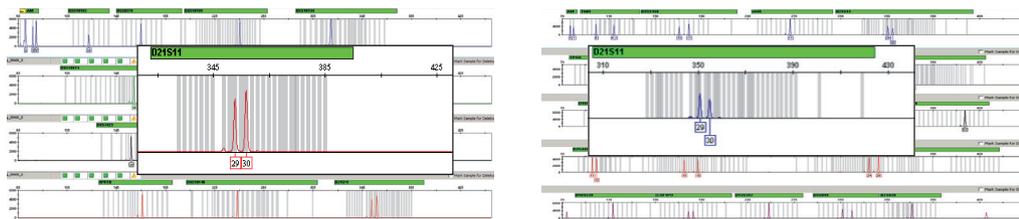


Figure 4. Alignment of D21S11. Sample profiles from the Investigator Argus X-12 QS Kit (left) and the Investigator 24plex QS Kit (right), with highlighted D21S11 amplicons.

Latest QIAGEN PCR chemistry for fast and robust PCR success

The novel Fast Reaction Mix 2.0 is based on proven QIAGEN Multiplex PCR Technology, which has been further optimized to increase speed, and provides the highest success rates, even for the most challenging samples.

The optimized features include:

- Convenient manual and automated pipetting
- Even higher convenience and stability
- PCR speed of ~80 minutes for faster results
- Higher inhibitor tolerance for high-quality profiles from challenging samples

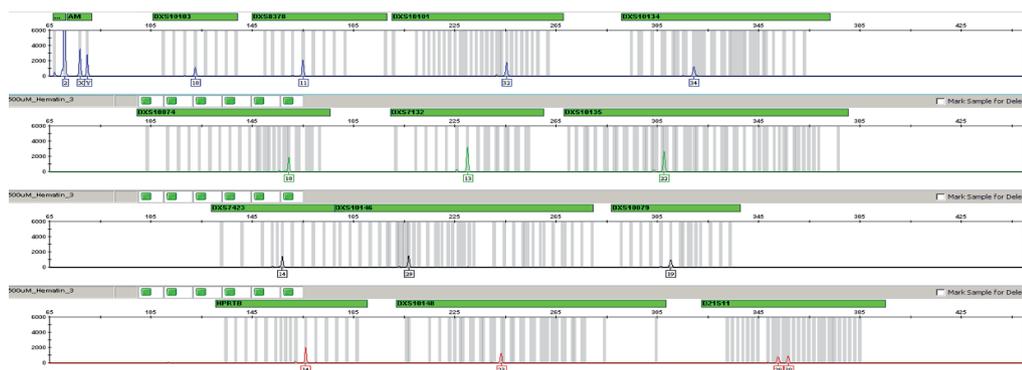


Figure 5. Inhibitor resistance. A full profile of 500 pg control DNA 9948 was obtained even in the presence of 500 µM hematin. Analysis was performed on an Applied Biosystems 3500 Genetic Analyzer and allele assignment was performed using the GeneMapper *ID-X* Software and the Investigator Argus X-12 QS Kit Template File.

Table 2. Technical specifications

Volume per PCR reaction	25 µl
Matrix	BT5
Fluorescence labels	6-FAM™, BTG, BTY, BTR, BTO
Genetic analyzers	ABI PRISM® 3100/3100-Avant, Applied Biosystems 3130/3130xl, or Applied Biosystems 3500/3500xl Genetic Analyzers

Table 3. Dyes

Dye	Markers					
6-FAM	QS1	Amelogenin	DXS10103	DXS8378	DXS10101	DXS10134
BTG	DXS10074	DXS7132	DXS10135			
BTY	DXS7423	DXS10146	DXS10079			
BTR	DXSHPTB	DXS10148	D21S11			

Ordering Information

Product	Contents	Cat. no.
Investigator Argus X-12 QS Kit (25)	Primer Mix, Fast Reaction Mix 2.0 including <i>Taq</i> DNA Polymerase, Control DNA, Allelic Ladder Argus X-12 QS, DNA Size Standard 550 (BTO) and Nuclease-Free Water	383223
Investigator Argus X-12 QS Kit (100)	Primer Mix, Fast Reaction Mix 2.0 including <i>Taq</i> DNA Polymerase, Control DNA, Allelic Ladder Argus X-12 QS, DNA Size Standard 550 (BTO) and Nuclease-Free Water	383225
Matrix Standard BT5 single cap. (5 x 25)	Matrix Standard 6-FAM, BTG, BTY, BTR and BTO	386113
Matrix Standard BT5 multi cap. (25)	Matrix Standard 6-FAM, BTG, BTY, BTR and BTO	386123
Matrix Standard BT5 multi cap. (50)	Matrix Standard 6-FAM, BTG, BTY, BTR and BTO	386125

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Once you've tried it, you'll always insist on Quality Sensor! Visit www.qiagen.com/Investigator.

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