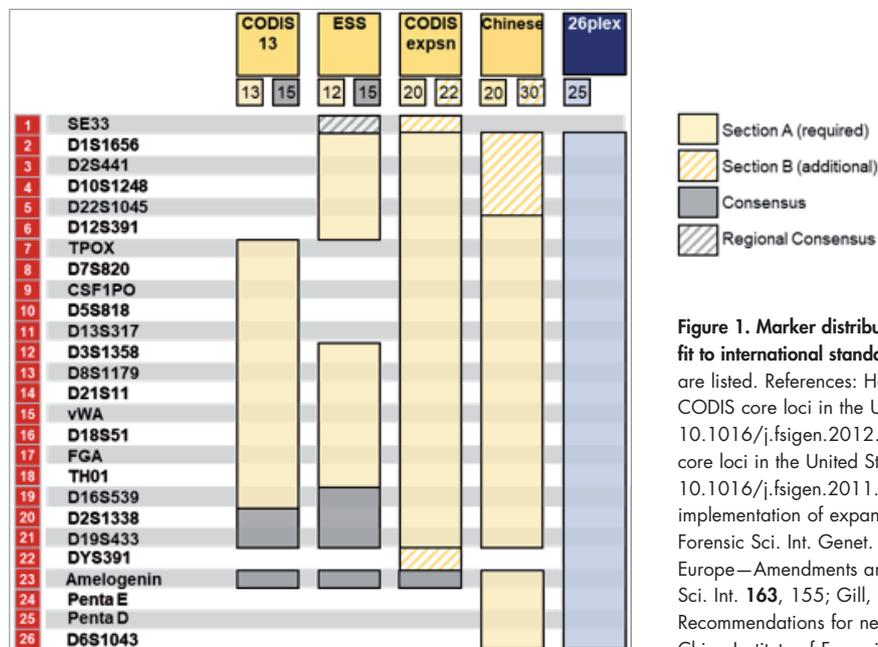


## Investigator<sup>®</sup> 26plex QS Kit

Advanced STR solution for all Chinese National database loci and CODIS-required markers, with an innovative Quality Sensor

The Investigator 26plex QS Kit is a multiplex STR kit for the co-amplification of all Chinese National database loci and CODIS required markers, as well as *DYS391* and *Amelogenin*. This comprehensive set of loci provides full compatibility with current forensic databases worldwide. With 25 loci, the Investigator 26plex QS Kit offers very high discrimination power and delivers more information for forensic genetic applications and paternity testing.

- 6 dye STR kit with Chinese, CODIS and European standard markers in one reaction
- Very high discrimination power provided by the 25 loci (PI  $3.7 \times 10^{29}$ )
- Integrated Quality Sensor to support decision making
- Optimized FRM 3.0 chemistry for enhanced robustness towards PCR inhibitors and stability
- Reduced allelic overlap and unambiguous results
- High flexibility and free choice of DNA Size Standard



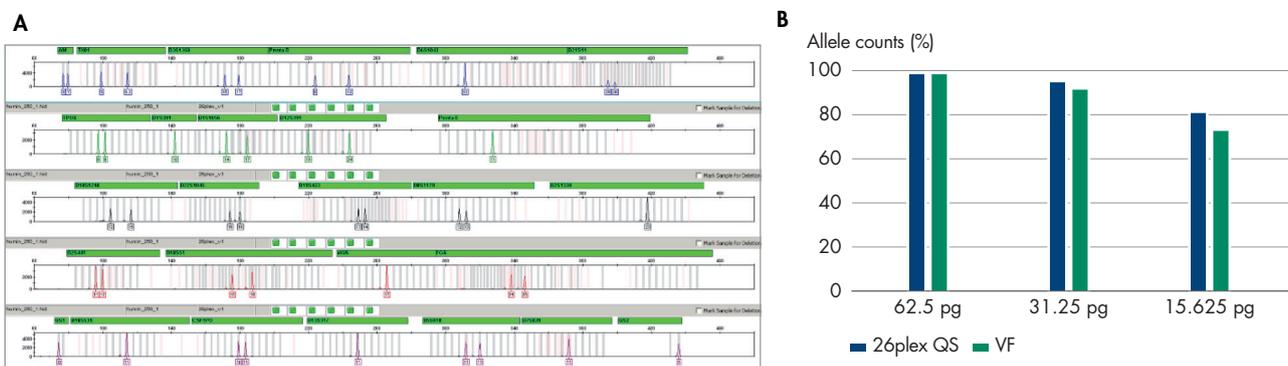
**Figure 1. Marker distribution of most important autosomal STR loci and their fit to international standards.** Please note that not all Chinese Section B loci are listed. References: Hares, D.R. (2012) Addendum to expanding the CODIS core loci in the United States. *Forensic Sci. Int. Genet.* **6**, doi: 10.1016/j.fsigen.2012.01.003; Hares, D.R. (2012) Expanding the CODIS core loci in the United States. *Forensic Sci. Int. Genet.* **6**, e52–e54, doi: 10.1016/j.fsigen.2011.04.012; Hares, D.R. (2015) Selection and implementation of expanded CODIS core loci in the United States. *Forensic Sci. Int. Genet.* **17**, 33; Gill, P. et al. (2006) New multiplexes for Europe—Amendments and clarification of strategic development. *Forensic Sci. Int.* **163**, 155; Gill, P. et al. (2006) The evolution of DNA databases—Recommendations for new European STR loci. *Forensic Sci. Int.* **156**, 242; China Institute of Forensic Science, Ministry of Public Security.

## Investigator 26plex QS – for crucial casework sample analysis

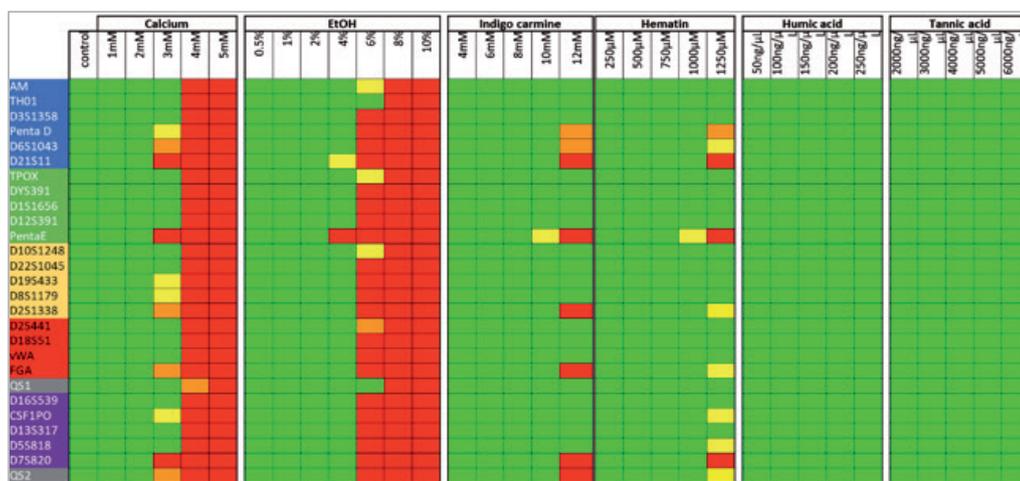
Small DNA traces can be challenging for casework sample analysis. Often, these traces are present with inhibitors or as a mixture with other DNAs. In such situations, the high sensitivity, inhibitor tolerance and clean baseline provided by the Investigator 26plex QS Kit is crucial for your success. Besides the sensitivity and robustness expect from this kits, the Quality Sensor indicates how best to proceed. This allows you to reduce cost and increase process efficiency. Let the QS redefine the way you think about casework sample analysis.

The benefits of the kit include:

- Quality Sensor for better decision making and data interpretation
- Highest sensitivity and inhibitor tolerance bring highest pass rate for the most challenging samples
- Robust gender typing for all populations, even with degraded or inhibited samples



**Figure 2. A Electropherogram of control DNA 9948.** The sample was amplified in the presence of 250 ng/μl humic acid. Humic acid did not interfere with amplification, and a high-quality profile was obtained. The Quality Sensor fragments QS1 (lowest panel on the left) and QS2 (lowest panel on the right) were not adversely affected, indicating a successful run. **B Comparison study.** Sensitivity of the Investigator 26plex QS Kit was compared to VeriFiler® Plus (VP) in the presence of low amounts of DNA. The Investigator 26plex QS Kit outperforms other methods based on STR allele recovery rates. PCR was performed under standard handbook conditions.



**Figure 3. Investigator 26plex QS Kit inhibitor tolerance.** The assay was tested with 6 inhibitors (calcium, ethanol, indigo carmine, hematin, humic acid and tannic acid). Control DNA sample of 500 pg was used and PCR was performed under standard handbook conditions. 50 RFU was used as the threshold for allele calling. **Green:** Consistently full profile. **Yellow:** 75% of expected PCR products detected. **Orange:** 50% of expected PCR products detected. **Red:** Less than 50% of expected PCR products detected.

## Convenience always matters: Compensate issues with high amount of DNA input and benefit from higher stability

Reference samples or even casework samples that haven't been quantified prior to STR analysis might contain high DNA concentrations. Such high DNA amounts can trigger split peak generation and make it much more difficult to analyze the DNA profiles. That's why we have developed the new FRM 3.0. Not only does it compensate for the issues with split peaks due to DNA overloading, but it also provides an improved stability of the master mix. Furthermore, the Investigator 26plex QS Kit can be used with a specially designed size standard with fewer fragments. This counters the issue frequently observed, whereby pull-up peaks interfere with the DNA size standard and complicate sizing of alleles. With fewer fragments in the size standard, there is less chance to "hit" a true fragment, increasing your chance of an issue-free run. Furthermore, an increase in the fluorescence signal also minimizes the risk for failed size standard analysis. So, you have the option:

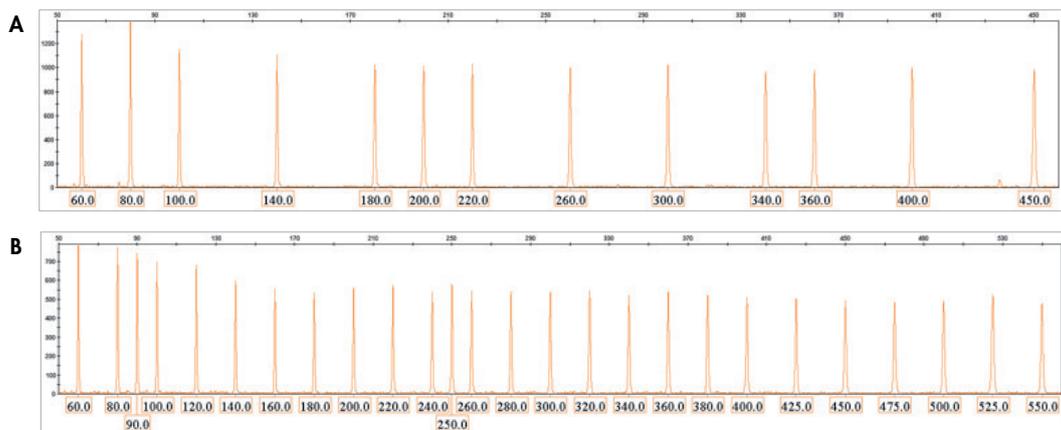
- DNA Size Standard 450 (BTO), cat. no. 386045 with 13 fragments, higher fluorescence adjusted for better compensation of high concentration of DNA input whenever no quantification was done or when you expect a high level of DNA in the sample (Figure 4A)

- DNA Size Standard 24plex (BTO), cat. no. 386035 with 26 fragments and standard fluorescence, dedicated for typical applications (casework or reference samples) in human ID and forensics (Figure 4B)

Only the Investigator 26plex QS Kit is able to handle a wide dynamic range of DNA input without losing sensitivity in critical casework sample analysis of low template DNA and without issues from DNA overloaded samples that were not quantified prior to STR analysis! The recommended amount of DNA under standard conditions is 0.5 ng. Internal validations demonstrated robust and balanced results with 0.2 to 2 ng DNA, and reliable results with <0.1 ng DNA.

**Table 1. Technical specifications of Investigator 26plex QS Kit**

Category	Details
Volume per amplification reaction	25 µl
Matrix	BT6
Fluorescence labels	6-FAM, BTG, BTY, BTR2, BTO, BTP
Genetic analyzers	Applied Biosystems 3500/3500xL Genetic Analyzers
Software for analysis	Applied Biosystems GeneMapper ID, GeneMapper ID-X, or Genotyper Software



**Figure 4. A DNA Size Standard 450 (BTO) with 13 fragments. B DNA Size Standard 24plex (BTO) with 26 fragments.**

**Table 2. Investigator 26plex QS Kit dyes and corresponding markers**

Dye	Marker						
6-FAM	Amelogenin	TH01	D3S1358	Penta D	D6S1043	D21S11	
BTG	TPOX	DYS391	D1S1656	D12S391	Penta E		
BTY	D10S1248	D22S1045	D19S433	D8S1179	D2S1338		
BTR2	D2S441	D18S51	vWA	FGA			
BTP	QS1	D16S539	CSF1PO	D13S317	D5S818	D7S820	QS2

## Ordering Information

Product	Contents	Cat. no.
Investigator 26plex QS Kit (100)	Primer Mix, Fast Reaction Mix 3.0 including <i>Taq</i> DNA Polymerase, Control DNA, allelic ladder 26plex, and nuclease-free water	382615
Investigator 26plex QS Kit (400)	Primer Mix, Fast Reaction Mix 3.0 including <i>Taq</i> DNA Polymerase, Control DNA, allelic ladder 26plex, and nuclease-free water	382617
Matrix Standard BT6 (50)	Matrix standard 6-FAM, BTG, BTY, BTR2, BTP and BTO	386224
DNA Size Standard 450 (BTO) (100)	DNA Size Standard 450 (BTO) for 100 reactions; 13 fragments, higher fluorescence and adjusted for high concentration of DNA input	386045
DNA Size Standard 24plex (BTO) (100)	DNA Size Standard 24plex (BTO) for 100 reactions	386035

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at [www.qiagen.com](http://www.qiagen.com) or can be requested from QIAGEN Technical Services or your local distributor.

Investigator 26plex QS Kit is manufactured in alignment with the ISO 18385 standard.

Learn more at [www.qiagen.com/26plex](http://www.qiagen.com/26plex).

Trademarks: QIAGEN®, Sample to Insight®, Investigator® (QIAGEN Group); VeriFiler® (Thermo Fisher Scientific). Registered names, trademarks, etc. used in this document, even when not specifically marked as such, may still be protected by law.

© 2019 QIAGEN, all rights reserved. PROM-15040-001

Ordering [www.qiagen.com/shop](http://www.qiagen.com/shop) | Technical Support [support.qiagen.com](mailto:support.qiagen.com) | Website [www.qiagen.com](http://www.qiagen.com)