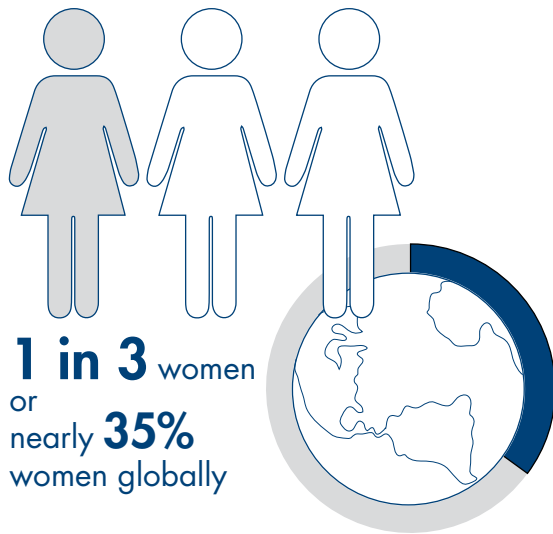




Integrated Solutions

For sexual assault analysis



Burden of sexual assault cases

Sexual assaults are a serious public safety concern and represent a significant percentage of cases examined by crime laboratories and forensic scientists ($\geq 50\%$). A UN report from 2015* has it that 1 in 3 women or nearly 35% women globally experience sexual assault at some point in their lives.

*<https://unstats.un.org/unsd/gender/chapter6/chapter6.html>

DNA evidence in sexual assault analysis

DNA evidence has become an increasingly powerful tool in sexual assault investigations for the accurate identification of a perpetrator, but can also be challenging, given the complex nature of sexual assault evidence. Samples can be collected from semen, vaginal fluid, blood, saliva, sweat, urine and skin tissue, may consist of mixtures of body fluids from the victim and suspect, and often contain small quantities of highly degraded DNA, or inhibitors.

Most forensic laboratories conduct DNA analysis of sexual assault evidence according to a standard workflow. Following the identification of body fluids, separation of sperm from female cellular material and subsequent DNA extraction and purification, samples are quantified to determine the amount of total human DNA. This is typically done using a human-specific, real-time PCR assay. An optimal amount of human DNA is then PCR-amplified using a standard autosomal STR system, and the amplified DNA is detected by electrophoresis.

QIAGEN® brings automated solutions to enhance workflow efficiencies and inspire confidence in your evidence with validated quantification kits.



Automate differential separation of sexual assault samples to accelerate your analysis



Simplify isolation of challenging samples for best possible yield and quality of DNA



Obtain detailed and accurate information on the male DNA in your samples



Perform rapid and reliable downstream analysis with the Investigator® assays

Standardized and reliable sexual assault sample processing for the forensic laboratory

While DNA evidence has the power to identify assailants, effective lysis and careful separation of the sperm and epithelial fractions are essential to achieving the best possible results in downstream STR analysis. Our specially designed differential wash protocols rise to meet this challenge, helping you to achieve success with even the most difficult samples.

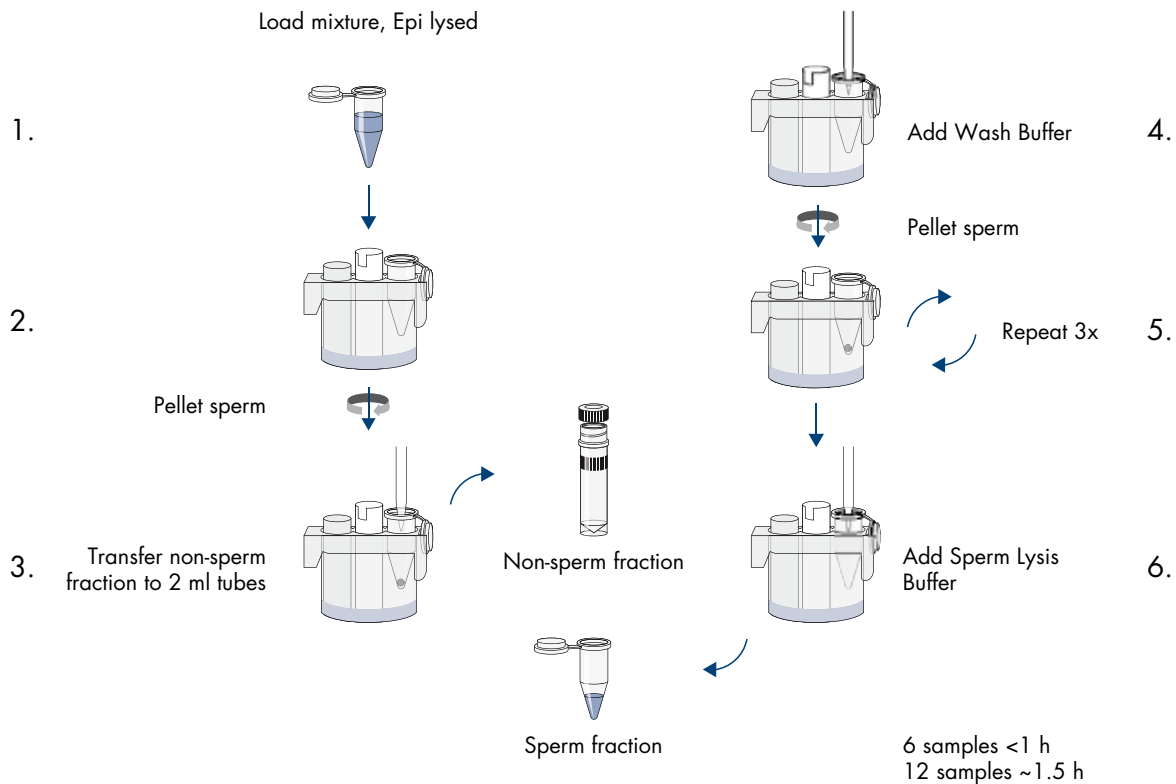
Furthermore, even with the most successful differential lysis and purification, if the quantity and quality of the male DNA are insufficient, conventional analysis could still be unsuccessful. The Investigator Quantiplex® Pro RGQ Kit offers unparalleled insight into the male DNA in every sexual assault sample, enabling well-informed decisions for downstream analysis.

QIAGEN's workflow, which includes solutions designed to meet every laboratory's need and capable of running any throughput, as well as a quantification assay designed specifically for sexual assault samples, can help the forensic laboratory to standardize sexual assault processing and enable the achievement of consistent high-quality results.

Automated differential wash and lysis protocols for the QIAcube®

To reduce hands-on time and standardize labor intensive separation and wash steps, QIAGEN has developed an automated differential separation and wash protocol for sexual assault samples. These protocols provide differential fraction separation and sperm pellet lysis of up to 6 samples

in approximately 1 hour or up to 12 samples in approximately 90 minutes. Designed to run on the QIAcube, the protocol is directly compatible with QIAGEN's EZ1®, QIASymphony® or QIAamp® DNA Investigator Kit chemistry for downstream DNA purification.



QIAGEN's differential wash protocols for the QIAcube have clear benefits including:

- Increased efficiency due to reduced hands-on time
- Standardized sample processing to reduce run-to-run variability
- High process safety as a consequence of reagent volume and plastic checks
- Installation, IQ/OQ documentation and validation support* to ensure continued high-quality performance

Want to learn more? Then visit www.qiagen.com/diffwash.

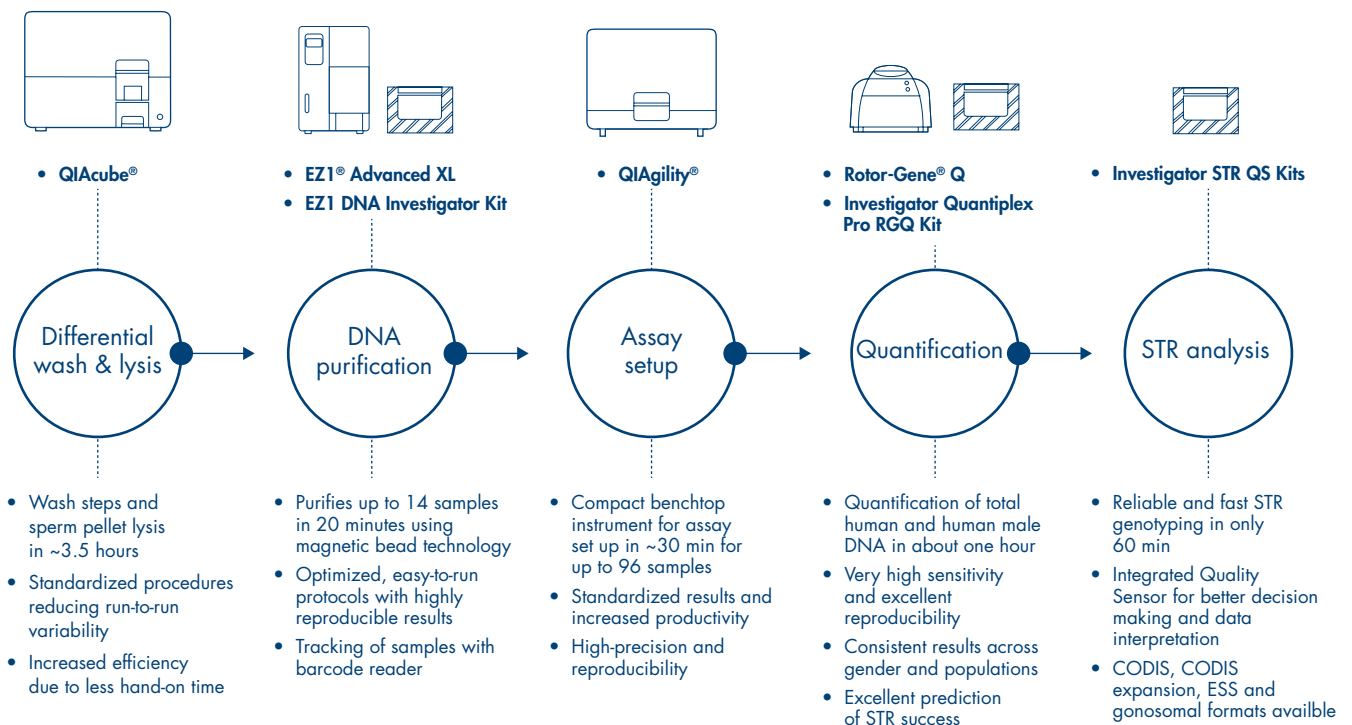
* Validation services offered in certain areas; please contact your QIAGEN representative for availability.

Quantification designed for sexual assault samples with the Investigator Quantiplex Pro RGQ Kit

In most sexual assault cases, the offender male DNA is often mixed with the DNA from the female victim and is likely to be of lower quality and much lower quantity than the victim's DNA. The Investigator Quantiplex Pro RGQ Kit enables well-informed downstream analysis decisions even for your most challenging samples.

Key features and benefits

- Detect 0.4 pg of male DNA in a background of 400 ng of female DNA
- The only kit available that includes a male DNA degradation marker – measures both quantity and quality of the male DNA
- High-throughput workflow on the Rotor-Gene Q



Learn more about our quantification solutions at www.qiagen.com/quantiplexkits.

We facilitate simpler adoption of these processes by providing dedicated quality services to guarantee confidence in your sexual assault evidence:

- Professional installation and validation services
- Technical support, 24 h a day, 6 days a week
- Production according to ISO 18385
- Certificates of analysis
- Validation according to recommendations of ENFSI and SWGDAM
- Contamination exclusion database service

Ordering Information

Product	Contents	Cat. no.
QIAcube (110 V) HID Diff. Washing Station, cat. no. 9002160, including:	Differential Wash Protocol Pack, QIAcube	9243312
	QIAcube (110 V)	9001292
	Starter Pack, QIAcube	990395
	Installation, QIAcube	9240377
	IQ/OQ Services, QIAcube	9241465
	Guided Validation Support, QIAcube*	9242712
QIAcube (230 V) HID Diff. Washing Station, cat. no. 9002171, including:	Differential Wash Protocol Pack, QIAcube	9243312
	QIAcube (230 V)	9001293
	Starter Pack, QIAcube	990395
	Installation, QIAcube	9240377
	IQ/OQ Services, QIAcube	9241465
	Guided Validation Support, QIAcube*	9242712
EZ1 DNA Investigator Kit (48)	For 48 preps: Reagent Cartridge (DNA Investigator), Disposable Filter-Tips, Disposable Tip-Holders, Sample Tubes (2 ml), Elution Tubes (1.5 ml), Buffer G2, Proteinase K, Carrier RNA	952034
EZ1 Advanced XL, System	Robotic workstation for automated purification of nucleic acids from up to 14 samples using EZ1 Kits: includes installation, training, 1-year warranty on parts and labor	9001874
QIAgility System HEPA/UV (incl. PC)	Robotic workstation for automated PCR setup (with UV light and HEPA filter), notebook computer, and QIAgility Setup Manager Software: includes installation and training, 1-year warranty on parts and labor	9001532
Rotor-Gene Q 5plex HRM System	Real-time PCR cyclers and High Resolution Melt analyzer with 5 channels (green, yellow, orange, red, crimson) plus HRM channel, laptop computer, software, accessories: includes 1-year warranty on parts and labor, installation and training	9001650
Investigator Quantiplex Pro RGQ Kit (200)	Real-time PCR cyclers and High Resolution Melt analyzer with 5 channels (green, yellow, orange, red, crimson) plus HRM channel, laptop computer, software, accessories: includes 1-year warranty on parts and labor, installation and training	387316

* Validation Services offered in certain areas; please contact your QIAGEN representative for availability.

Product	Contents	Cat. no.
Investigator 24plex QS Kit (100)^{†,‡}	Primer Mix, Fast Reaction Mix including Taq DNA Polymerase, Control DNA, allelic ladder 24plex, DNA size standard 24plex (BTO), and nuclease-free water	382415
Investigator ESSplex SE QS Kit (100)[†]	Primer Mix, Fast Reaction Mix including Taq DNA Polymerase, Control DNA, Allelic Ladder ESSplex SE QS, DNA size standard 550 (BTO) and Nuclease-Free Water	381575
Investigator IDplex Plus Kit (100)^{†,‡}	Primer mix, Fast Reaction Mix including HotStarTaq Plus DNA Polymerase, Control DNA, allelic ladder IDplex Plus, DNA size standard 550 (BTO), and nuclease-free water	381625

[†] Other kit sizes available; see www.qiagen.com.

[‡] Not available in all countries.

Have confidence in your evidence with QIAGEN's solutions for sexual assault analysis



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 or can be requested from QIAGEN Technical Services or your local distributor.

Trademarks: QIAGEN®, Sample to Insight®, QIAamp®, QIAcube®, QIAgility®, QIASymphony®, EZ1®, Investigator®, Quantiplex®, Rotor-Gene® (QIAGEN Group).
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