Select the right evidence.

Gain immediate criminal intelligence.

Accelerate investigations.

- Toby Hampshire, Global Product Manager, LGC

Science
for a safer world

Accelerate your investigational search

Forensic intelligence made easy

The ParaDNA® System has been designed for non-expert users to analyze items recovered from a scene, to provide immediate answers to questions such as:

- Is there DNA present?
- Is any DNA from a victim, suspect or person of interest?
- Does any DNA match another profile held on (or off) the system?
- Are bodily fluids present, and if so, which ones?
- Is any identified DNA male or female in origin?

To inform the decision-making process with actionable intelligence from fast and simple tests.

- **Simple, one-step sample preparation**
- **Straightforward instrument operation**
- **Automatic data interpretation with optional expert, in-depth review**

Three Suspects Charged with Multiple Offences Following a Burglary Investigation

A ParaDNA Case Study from Osceola County Sheriff's Office

Email: heather.white@osceola.org, paul.rendell@lgcgroup.com

Setting the Scene

A gas station burglary was under investigation by Osceola County Sheriff's Office when reports of a second burglary were received by a City Police Department. The MO for both crimes was similar. Detectives en route to the city burglary spotted a vehicle matching an eyewitness description and subsequently detained the 3 male occupants.
DNA evidence was gathered from the interior of the vehicle, the gas station and also from the premises of an ice cream parlour where a 3rd burglary had recently occurred. Under court order, all 3 suspects provided buccal swabs.

Evaluating the Evidence

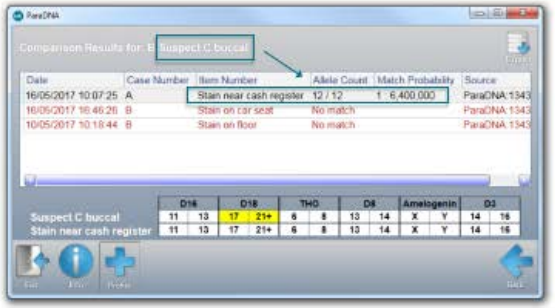
Stain on seat of suspect's vehicle

Stain on floor of gas station

Reddish-brown stains were identified on the seat of the suspect's car and on the floor of the gas station. Each stain was sampled with a wet, sterile cotton swab and then subsampled using the ParaDNA Sample Collector.

Both the stain on the car seat and the stain from the gas station floor were strong matches with the buccal from Suspect A.

Suspect B did not match any of the stains that were analysed with the ParaDNA system.



Suspect C was found to be a strong match with a reddish-brown stain near the cash register of the ice cream parlour.

Case Outcome

All 3 suspects were charged with Burglary of a Structure (FSS 810.02(4A)), Criminal Mischief of more than $1000 (FSS 806.13 (1B3)) and Possession of Burglary Tools (FSS 810.06).
Suspect B confessed to the charges.
Cellular phone information and witness testimony strengthened the case further. Additional charges were filed by the City Police Department in relation to the 2nd burglary, which occurred within their jurisdiction.

Impact of Using ParaDNA

- Direct link established between suspects and crime scenes within the County Sheriff's jurisdiction
- DNA samples selected for State lab processing with confidence and a clear expectation of the outcome
- Investigation time significantly reduced, allowing all 3 cases to be closed quickly
- Interagency cooperation encouraged between the County Sheriff's Office and the City PD

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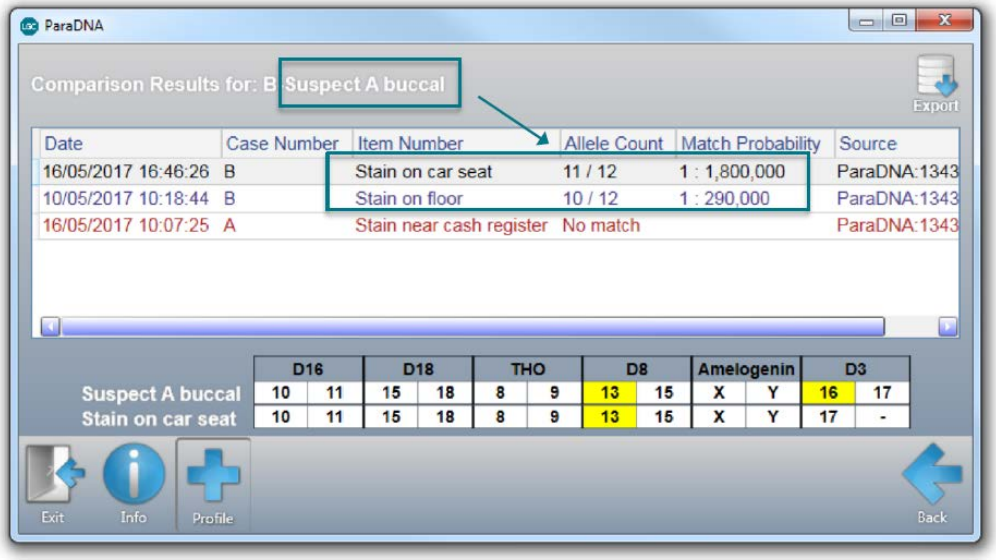

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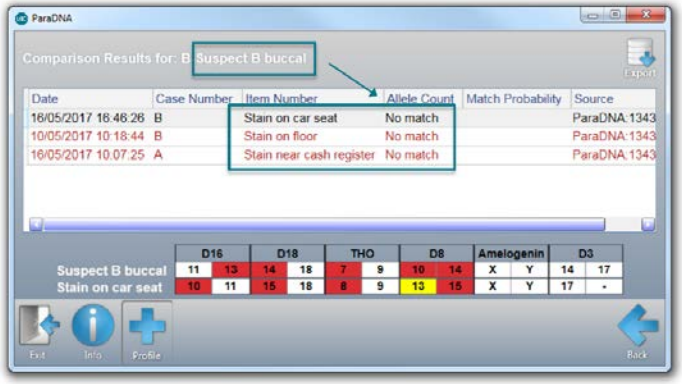

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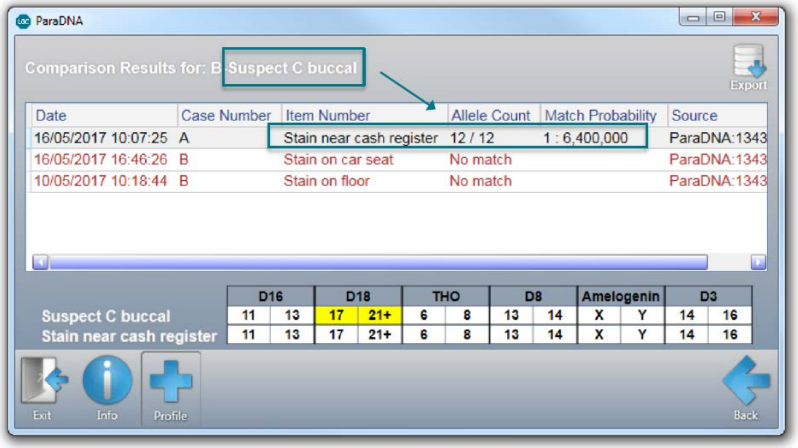

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The ParaDNA System

The ParaDNA System consists of four seamlessly connected components:

1	2	3	4
SAMPLE COLLECTION	TESTS	INSTRUMENTS	SOFTWARE

Screening and Field Portable Instruments

Screening, Intelligence and Body Fluid Tests

Reaction Plates

Box of Sample Collectors

Single Packaged Sample Collector

Sample Collector Nibs

Forensic Intelligence Made Easy

No extractions required. Directly sample items with the patented ParaDNA Sample Collector, insert collector into test plate, add test to the instrument and run it. A simple process, with immediate results.

75 min

Sample item e.g. swab

Remove foil lid from test and discard

Insert collector into test plate.

Place sealed test onto instrument and run

Direct Sampling

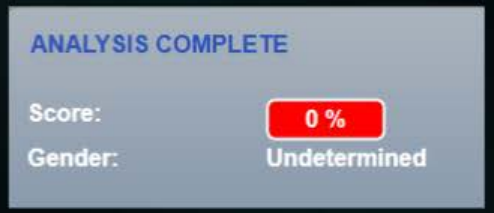
Indirect Sampling

NB: After sampling store evidence appropriately for further laboratory analysis

Running a sample

Why use the ParaDNA Screening System?

Screening



Purpose

Rapidly triage swabs and stains to identify and focus on the most probative samples

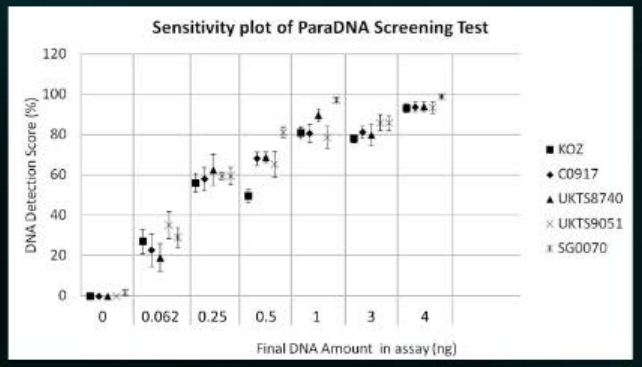
- Exclude samples with no detectable human DNA
- Prioritise remaining swabs
- Determine if male DNA is present
- 75 mins per run

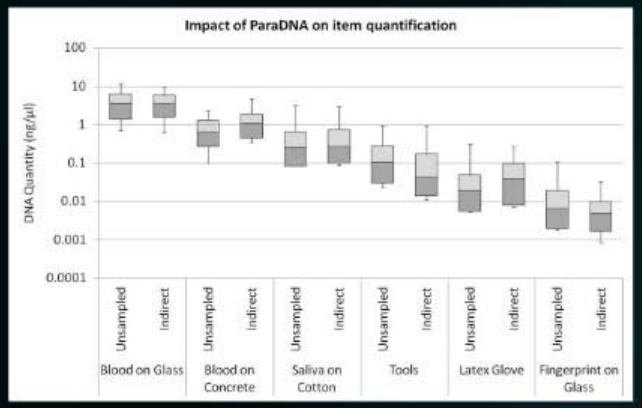
Benefits

- Tackle backlog issues
- Improve success rates at no additional cost
- Simple operating procedure, minimal hands-on time

Why use the ParaDNA Screening System?

Screening - Technical Highlights





How sensitive is the test?

- Sensitivity measured using 5 different extracted DNA samples
- Good correlation down to 62.5pg

What's the impact on the downstream lab process?

- Swabs divided into 2 sets. Half sampled with ParaDNA
- Quant performed with Promega Plexor HY kit
- No statistically significant difference

Saliva (50µl, spiked swab)	% DNA Recovered
Neat	1.7
Neat	0.8
1:16	4.5
1:16	4.7
1:100	0
1:100	1.9

Sample Collector lifts small proportion of available DNA

Developmental Validation of the ParaDNA® Screening System - A presumptive test for the detection of DNA on forensic evidence items. **https://www.ncbi.nlm.nih.gov/pubmed/24670380**

Yorkshire and the Humber Scientific Services

Projected savings over a 5-year period

ParaDNA savings			
	Number of samples	Cost of Test	Total
ParaDNA screening Test	6254	£ 30.51	£ 190,798
STR analysis testing	6254	£ 99	£ 619,146
STR analysis testing with paraDNA screening	1929	£ 99	£ 381,769
Cost Savings/year	-	-	£ 237,377
Cost Savings per 5 years	-	-	£ 1,186,885
Instruments	4		
Instrument life	5		
Instrument cost	£ 90,000		
Service contract cost	£ 91,980		
Working days	220		
Hours/day	3		
Salary/hour	£20		
Salaries	£ 52,800		
Cost/test (overhead)	£ 7.51	@	6254
Cost/test (overhead + test)	£ 30.51	@	
			Cost/test (£)
Samples/instrument/day	7.1		

Why use the ParaDNA Intelligence System?

Intelligence

Purpose

Rapidly triage swabs and stains to identify the most probative samples and generate early, actionable intelligence

- Generates a 5 STR profile plus Amelogenin
- Provides a % score just like the Screening Test
- Direct PCR - no sample prep required
- 75 minutes per run

NEW!

Benefits

Directly compare profiles to

- Aid interpretation of blood patterns
- Identify multiple stains from the same donor
- Identify and eliminate victim DNA
- Include or exclude suspects based on reference samples
- Link crime scenes and identify repeat offenders*

* compatible with existing CODIS profile data

Why use the ParaDNA Intelligence System?

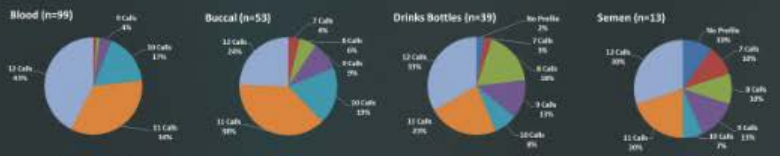
Intelligence - Technical Highlights

Accuracy and Discrimination

3133 cellular samples in training data, including
- very rare genotype samples
- casework samples
- validation data
- pilot data

99.3% accuracy

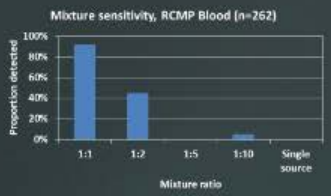
Mock Case Type Samples*



* Data taken from LGC, FIU and UCF Dev Val

Touch samples less likely to generate a profile in the instrument software.

Mixture Detection

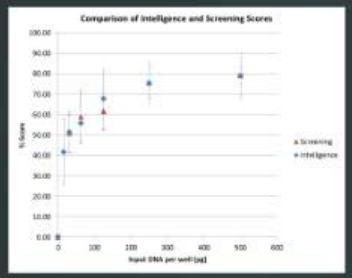


Mixture Ratio	Detection Rate
1:1	92%
1:2	45%

Rule
If 2 or more STRs show *any* evidence of multiple contributors, flag as a possible mixture

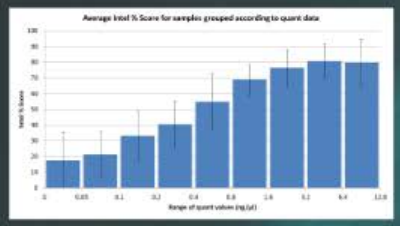
Technical Highlights - % Score

NEW!



Scores standardised at 500pg per well.
Good agreement at other input levels.

Compared with Qiagen Quantiplex HYres quant data for **237** RCMP samples



Microvariants

	Canada	USA	UK
Measured STR	Microvariant Population in Canadian Databases	Microvariant Population in US CODIS Databases	Microvariant Population in UK National Database*
	N= 1629	N= 6224	N= 1.4 million
D3S1358	0.06%	0.03%	0.03%
D8S1179	-	-	-
D16S539	-	-	0.01%
D18S51	0.12%	0.34%	0.17%
TH01	-	0.02%	0.10%
Total	0.18%	0.39%	0.31%

Microvariants occur **rarely**
Most prevalent in D18 and D3
100% within African population in Canada
82% within African American population in US
86% within African/Caribbean population in UK

Imported profiles containing microvariants will be considered a match for adjacent alleles during a ParaDNA search i.e. they will **not** be falsely excluded

Why use the ParaDNA Intelligence System?

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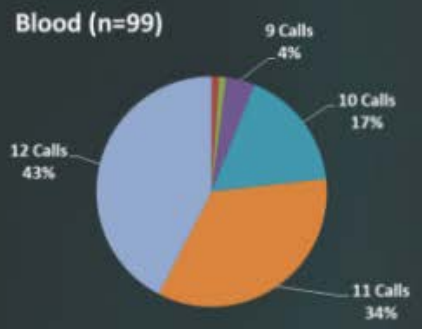
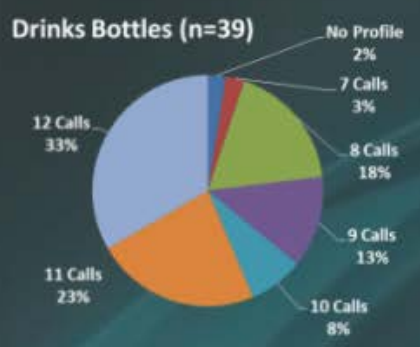
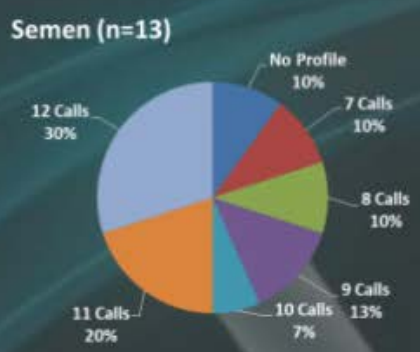
99.3% accuracy

Mock Case Type Samples*







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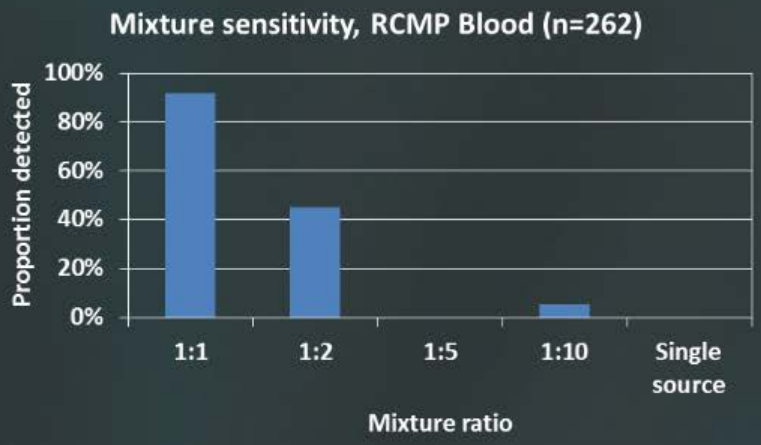


D16		D18		THO		D8		Amelogenin		D3		Score
11	11	13	18	-	-	14	-	X	Y	-	-	91 %
Possible mixture detected												

Mixture Ratio	Detection Rate
1:1	92%
1:2	45%

Rule

If 2 or more STRs show *any* evidence of multiple contributors, flag as a possible mixture

Why use the ParaDNA Positive Control?

Screening Positive Control

- Same formulation as the Screening Test
- Each well is preloaded with 1ng of extracted DNA
- End-to-end instrument performance check
- 12 month shelf life
- Store alongside other tests
- Run periodically and after moving instruments

Certificate of Analysis

PRODUCT INFORMATION

Product Name: ParaDNA Screening Positive Control v2.0 4 pack
Part Number: PARA-090

Lot Number: 52669
Expiry Date: 16 May 2017

Storage Conditions: -20℃

QC SPECIFICATION

Category:	Specification:	Result:
Gender Identification	The correct gender call is observed in 100% of QC samples tested.	Pass
Performance	Mean % DNA Score (80.0% < Score < 93.3%).	Pass
Statistical Analysis	Standard Deviation of % DNA Score (3.5% < Std Dev < 9.3%)	Pass

QA Release Date: 18 Nov 2016

Why use the ParaDNA Body Fluid ID System?

$1.4 million development program

90min

Body Fluid ID

Purpose

Simultaneously test for the presence of 6 different body fluids in less than 90 minutes

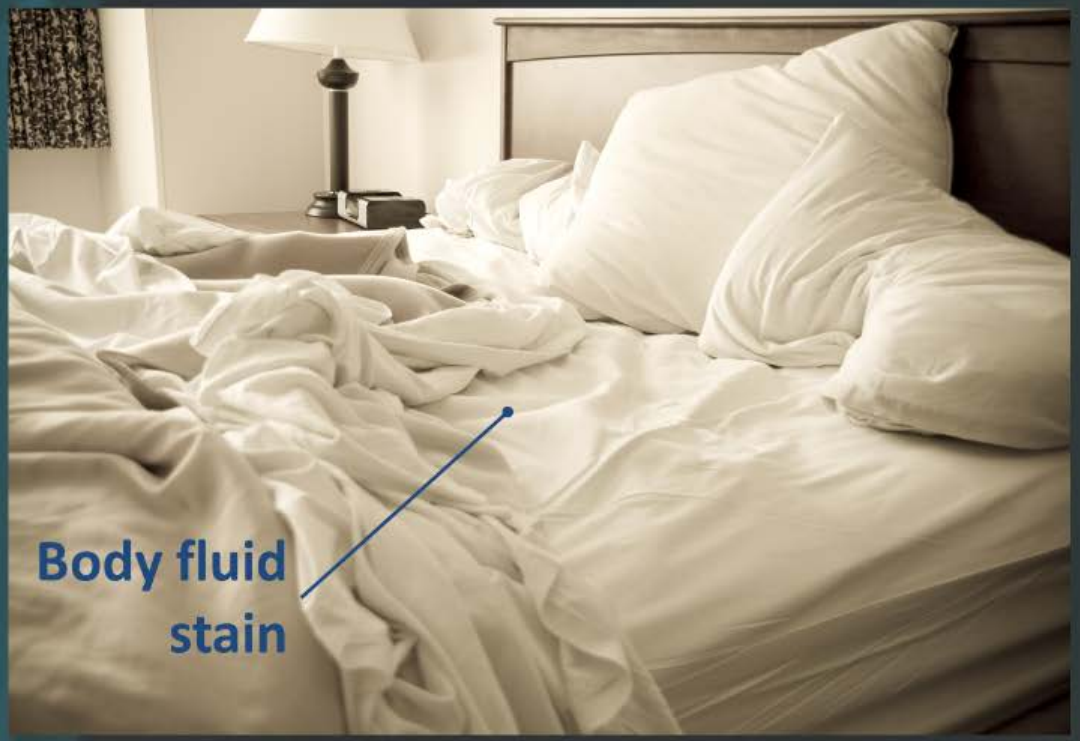
mRNA Marker	Body Fluid Type
SEMG1	Seminal Fluid
PRM2	Sperm Cells
CYP2B7P1	Vaginal Fluid
ALAS2	Blood
HTN3	Saliva
MMP10	Menstrual Blood

Benefits

- Option of testing stains, swabs or extracted mRNA
- Simple operating procedure, minimal hands-on time
- More convenient than time consuming confirmatory tests e.g. sperm microscopy
- More specific than presumptive tests
  - False positives from AP semen test with vaginal fluid
  - False postives from amylase saliva test with other body fluids

Why use the ParaDNA Body Fluid ID System?

Sexual Assault

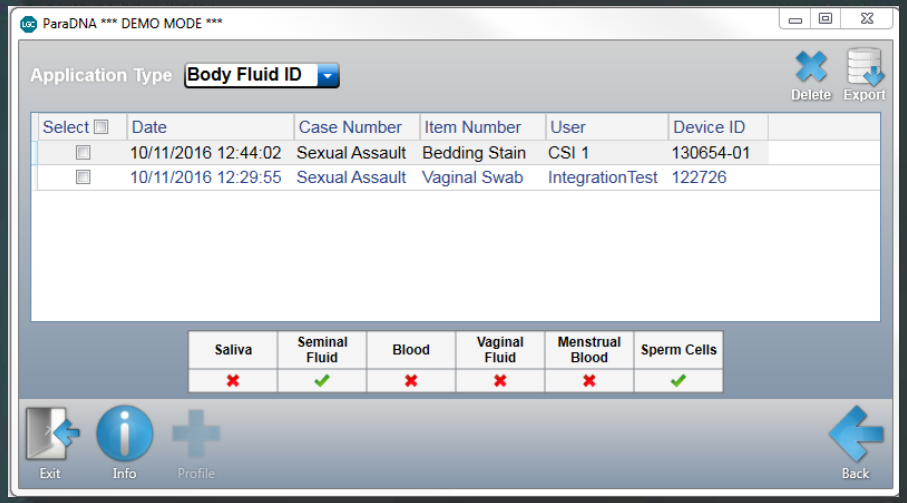


Victim swabs taken.

Bedding recovered from scene.

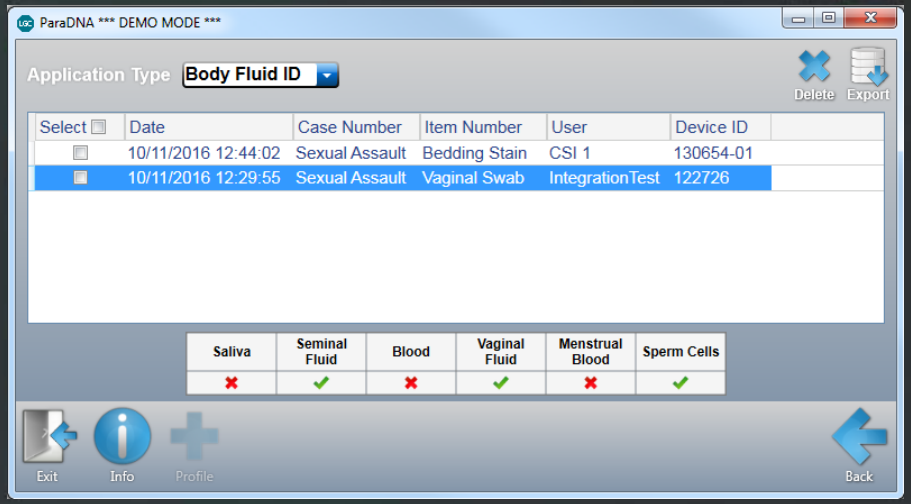
Why use the ParaDNA System?

Sexual Assault



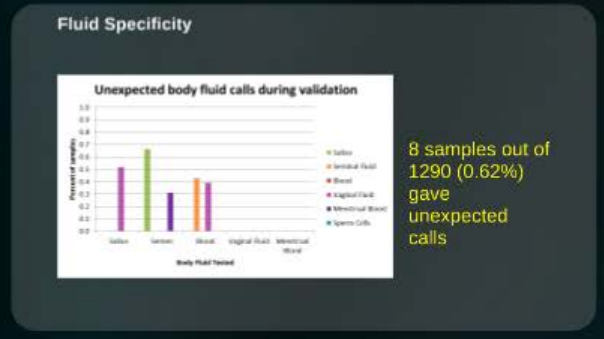
Confirmation that bedding stain is semen

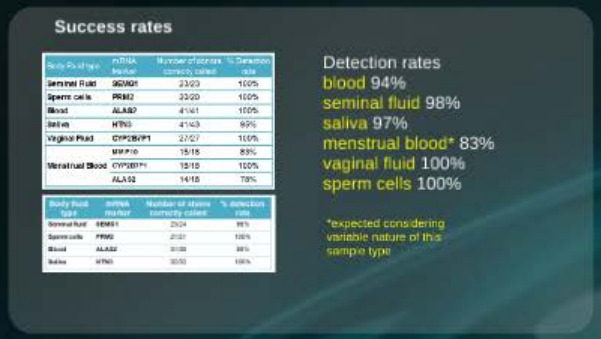
Vaginal swab suggests intercourse has taken place

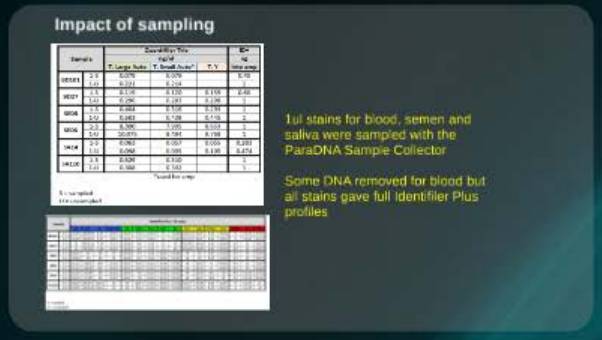


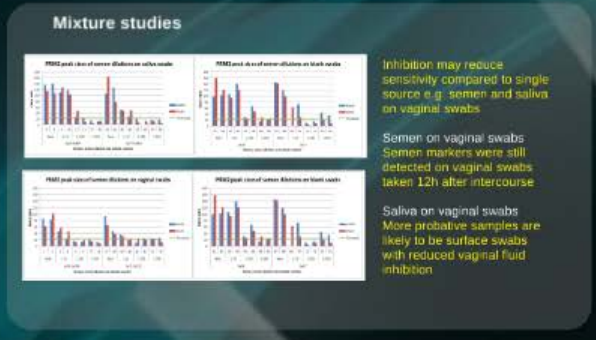
ParaDNA Body Fluid ID – LGC Validation

Run in accordance with SWGDAM









Time since intercourse study

- Half the vaginal swabs taken 8-12 hours post-intercourse gave positive calls for semen
- At 8-12 hours post-intercourse two out of five penile swabs gave positive vaginal fluid calls with one donor positive for vaginal fluid calls at 36 hours (taken after washing)

ParaDNA Body Fluid ID - Highlights

ParaDNA® Body Fluid ID Test
Developmental Validation

S. Blackman[1], B. Stafford-Allen[1], M. Panasiuk[1], E. Hanson[2], L. Dodd[1], J. Ballantyne[2], and S. Wells[1]

[1]LGC, Queens Road, Teddington, TW11 0LY, UK.
[2]University of Central Florida, Orlando, Florida 32816, USA.

Introduction

Biological fluids provide vital evidence in a criminal investigation; identification of the type of biological fluid is important since the nature and source of the material can be critical to the investigation. Rapidly identifying biological material prior to submission to a laboratory, may also provide a mechanism to ensure investigators are sending the most appropriate samples for DNA extraction and profiling. Current body fluid identification methods are lengthy, multi-stage, laboratory-based processes that do not permit the identification of all body fluids in one test, with most only offering a presumptive result.

LGC have developed and validated the ParaDNA® Body Fluid Identification System to provide objective results for the identification of vaginal fluid, seminal fluid, sperm cells, saliva, blood and menstrual blood in a single test. The one-step, easy-to-use, rapid, confirmatory test can operate on existing ParaDNA instruments (Screening and Field Portable) with no requirement for laboratory based extraction techniques. In approximately 90min, the accompanying ParaDNA Software provides automatic calls in a simple on screen display or PDF format report.

This poster details the developmental validation, based on SWGDAM guidelines, to demonstrate that in less than 90 minutes, the test can automatically determine the presence of specific body fluid mRNA markers in single-source and mixed samples on multiple substrate types. Results can either be used to support confirmation of source from previously obtained STR DNA profiling results or to improve success rates by making better informed evidential submissions.

Validation

Success Rates

For each body fluid assessed, up to 45 donors were asked to provide self-prepared swabs. In addition, a sub-set of donors also produced multiple 5µl stains on cotton of blood, semen and saliva.

Sensitivity

Two approaches were taken:

- Serial dilutions of purified total RNA, extracted from each fluid type were added directly to tests
  - Purified RNA sensitivity testing gave positive results down to 50-100pg total RNA per well for each fluid
- Liquid blood, saliva, or semen (neat or diluted) were used to create a range of dried stain sizes on cotton before sampling with the ParaDNA Sample Collector.
  - Stain size sensitivity testing gave positive results for all tested fluids (blood, saliva, semen) down to 1µl stains on cotton cloth

Mixtures

Mocked samples were prepared by mixing either neat or diluted fluids in various ratios. In addition, a time-since-intercourse study was performed with a limited number of volunteers providing post-coital swabs.

- Although mocked up mixtures did demonstrate a decrease in sensitivity to diluted semen or saliva when small amounts are added to vaginal swabs, the study also demonstrated examples of seminal fluid and sperm cell detection on vaginal swabs taken 12h post-coitus, and vaginal fluid was detected on penile swabs up to 36h post-coitus, even after showering

The ParaDNA Body Fluid ID Test

The ParaDNA System incorporates a one-step direct RT-PCR to provide automated detection and identification of body fluids, direct from stain, in approx 90min.

Markers were selected based on tissue specific expression identified by Jack Ballantyne's group.

The Body Fluid ID Test was optimised during product development so that robust, specific results are obtained from stains, with no prior purification step.

SAMPLE → LOAD → RESULT

5 min

90 min

Specificity and Robustness

Specificity

Blood and/or saliva from ten primate and 17 other animal sources was tested from stains on swabs, cards or cloth.

Species specificity data showed that the only non-human sample giving positive Body Fluid ID Test results was blood from the black howler monkey.

- Human inter-fluid specificity showed an overall unexpected positive call rate of below 0.65% over the duration of testing approximately 1440 samples

Robustness

The robustness of the ParaDNA Body Fluid ID Test was assessed in a number of studies.

Serology (presumptive pre-testing)

Body fluid stains were subjected to presumptive tests, including aluminium powder, Bluestar®, Hemastix®, acid phosphatase test for semen, Phadebas and Kastle-Meyer, prior to testing with the ParaDNA Body Fluid ID System.

- Pre-exposure to commonly used presumptive tests had little to no effect on subsequent ParaDNA Body Fluid ID Test results

Sample exposure

Body fluid stains were stored under various conditions and varying time periods. Only samples that were left outside and uncovered (Florida) produced reduced positive calls, whereas all other environmental conditions, including very humid conditions, had no measurable effect on call rate.

Substrates

During the processing of over 2000 samples, cotton, denim, condoms, polyester/satin, glass, plastics and wood, and a variety of different swab types were all tested with 10µl dried stains.

Inhibition/washing

Polypropylene was the only substrate to negatively affect test results. In addition, the presence of soil and carpet cleaner was noted to cause inhibition (however, condom lubricant was not found to be inhibitory).

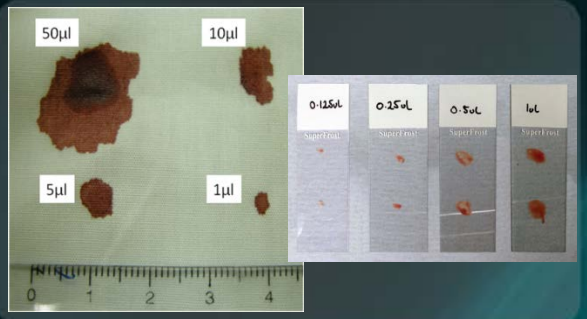
No evidence of body fluids transferring to clean cloth during a wash cycle was detected.

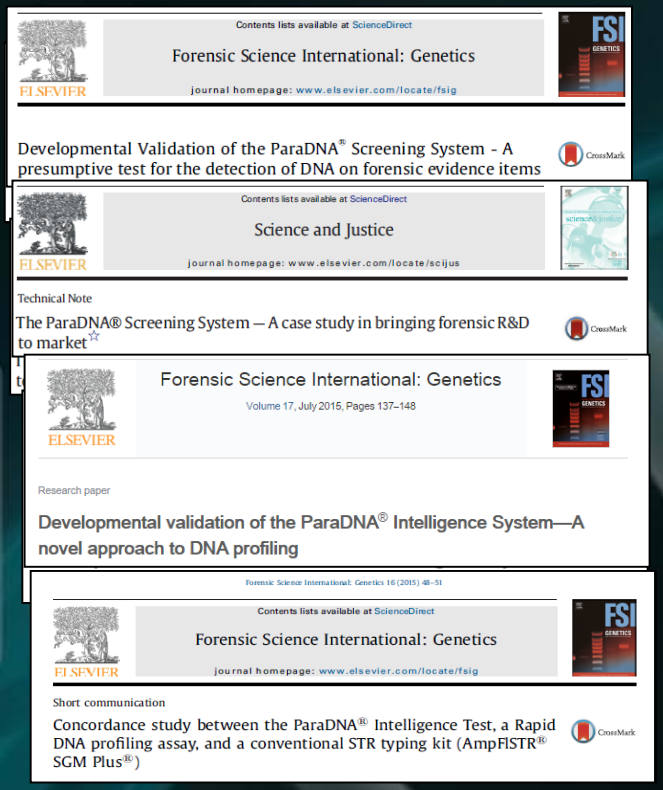
- Sperm cells were mostly detected post wash from semen stains on cotton, seminal fluid was occasionally detected

Conclusions

- The validation studies outlined in this poster indicate that the ParaDNA Body Fluid ID System could be used in forensic investigative processes to rapidly confirm the presence of body fluids. The test may be used as either a screening or post-STR profiling confirmatory tool
- The test can reliably detect two body fluids not currently detectable with standard serology: vaginal fluid and menstrual blood
- The system can detect all six body fluids down to some of the smallest forensic stains that labs would normally process (1µl). Sampling does not appear to affect the ability to obtain a DNA profile from the remaining stain (not shown)
- Although the sensitivity of some markers is reduced with certain mixtures, semen on vaginal swabs and vaginal fluid on penile swabs were detected at 12h-36h post-coitus respectively
- The success rates are similar to those obtained with conventional serology tests
- With minimal training, the sampling and analysis process is repeatable by a single user and reproducible between multiple users (not shown)

For more information, contact us at paradna@lgcgroup.com





Contents lists available at ScienceDirect
Forensic Science International: Genetics
journal homepage: www.elsevier.com/locate/fsig

Developmental Validation of the ParaDNA® Screening System - A presumptive test for the detection of DNA on forensic evidence items

Contents lists available at ScienceDirect
Science and Justice
journal homepage: www.elsevier.com/locate/scijus

Technical Note
The ParaDNA® Screening System — A case study in bringing forensic R&D to market☆

Forensic Science International: Genetics
Volume 17, July 2015, Pages 137–148

Research paper
Developmental validation of the ParaDNA® Intelligence System—A novel approach to DNA profiling

Forensic Science International: Genetics 16 (2015) 48–51
Contents lists available at ScienceDirect
Forensic Science International: Genetics
journal homepage: www.elsevier.com/locate/fsig

Short communication
Concordance study between the ParaDNA® Intelligence Test, a Rapid DNA profiling assay, and a conventional STR typing kit (AmpFlSTR® SGM Plus®)

Multiple Arrests After Eight Vehicles Burglarized in Hotel Parking Lot

A ParaDNA Case Study from Osceola County Sheriff's Office

Email: heather.white@osceola.org, paul.rendell@lgcgroup.com

Setting the scene

An Osceola County deputy arrived at the parking lot of a hotel to investigate a series of vehicle burglaries and discovered reddish-brown stains on 3 of the affected vehicles. She proceeded to swab the stains and returned the swabs to the Sheriff's Office for rapid ParaDNA triage.

Acting on local intelligence, detectives approached a group of 3 suspects in connection with the crime. All 3 suspects consented to give buccal swabs. These were quickly analyzed with ParaDNA and the results were compared to the crime stain profiles.

Evaluating the evidence

a.

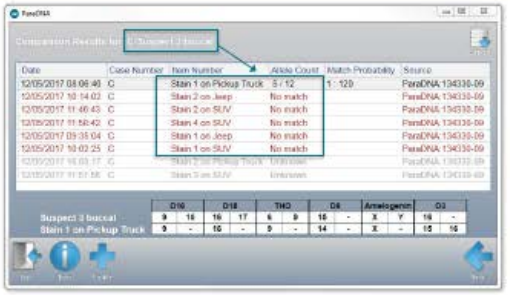
b.

c.

Reddish-brown stains from a. pickup truck b. Jeep and c. SUV

Suspect 1 was an extremely good match with stains recovered from both the SUV and the Jeep.

Suspect 2 did not match any of the crime stain profiles.



Suspect 3 gave a low-confidence match with one poor quality stain and was a clear mismatch with the other stains.

Case outcome

Latent fingerprints added weight to the DNA evidence.

Suspect 1 was arrested and charged with

- Attempted Burglary of a Conveyance (FSS 810.02 (4B))
- Grand Theft 3rd Degree-Firearm (FSS 812.014 (2C5))
- Grand Theft 3rd Degree (FSS 812.014 (2C1))
- Criminal Mischief (FSS 806.13 (1B3)

There was insufficient evidence to arrest Suspect 2.

Suspect 3, a juvenile, was arrested and charged with

- Burglary of a Conveyance (FSS 810.02 (1B1))
- Grand Theft 3rd Degree (FSS 812.014 (2C1))
- Criminal Mischief (FSS 806.13 (1B2)).

He pleaded guilty to 2 of the 3 charges during his interview.

Impact of Using ParaDNA

- Direct link established between Suspect 1 and the crime scene
- Clear indication of which suspects did *not* have DNA evidence linking them to the case
- Duplicate and poor quality samples not submitted to the State lab, helping to reduce the DNA backlog

Stain	Score	Comment
Stain 1 on SUV	90%	Duplicate
Stain 2 on SUV	86%	Duplicate
Stain 3 on SUV	6%	Poor quality
Stain 4 on SUV	98%	Duplicate

Interpretation of stains from SUV

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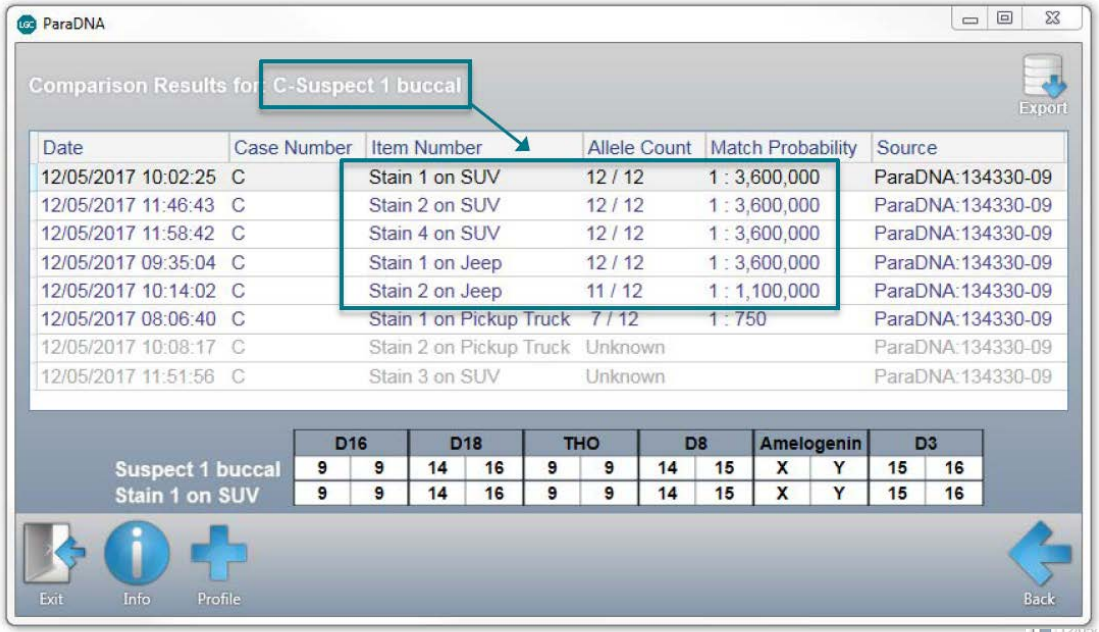

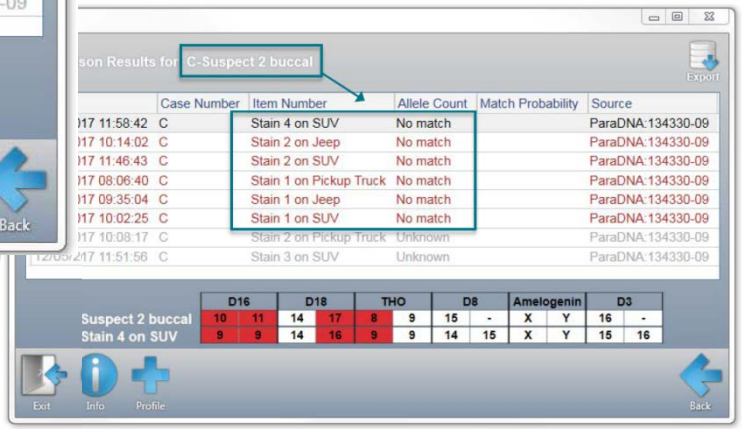

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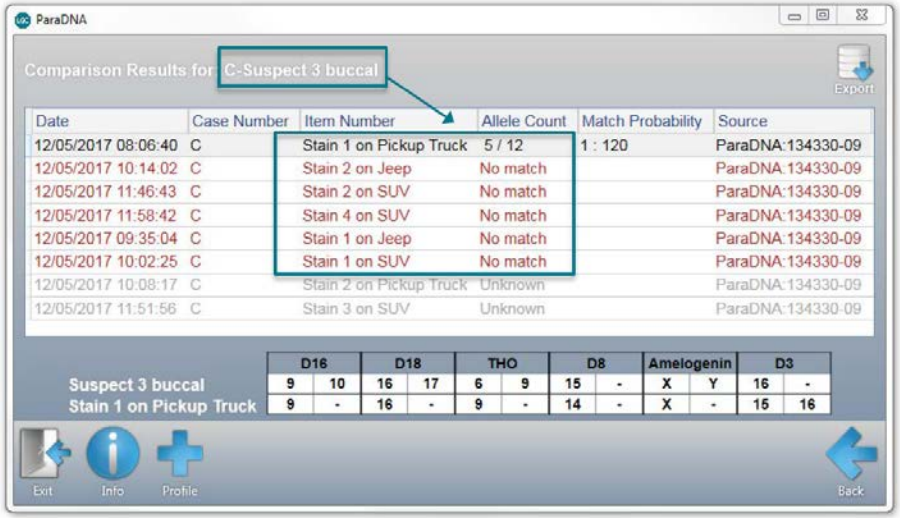

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Interpretation of stains from SUV

Why buy the ParaDNA System now?

Pricing

An investment in the technology gains quicker case outcomes, associated efficiencies and owners should gain back their investment in apx. 12 months

- ParaDNA Screening Instrument
  - Launched at RRP $54,000, now reduced to $40,000
- ParaDNA Field Portable Instrument
  - Launched at RRP $83,500, now reduced to $64,000

- ParaDNA Intelligence Test
  - *Launched at RRP $83*, now reduced to $54 per test
- ParaDNA Screening Test
  - *Launched at RRP $55*, now reduced to $42 per test
- ParaDNA Body Fluid ID Test
  - Launched at RRP of $32 per test

ParaDNA Service & Support

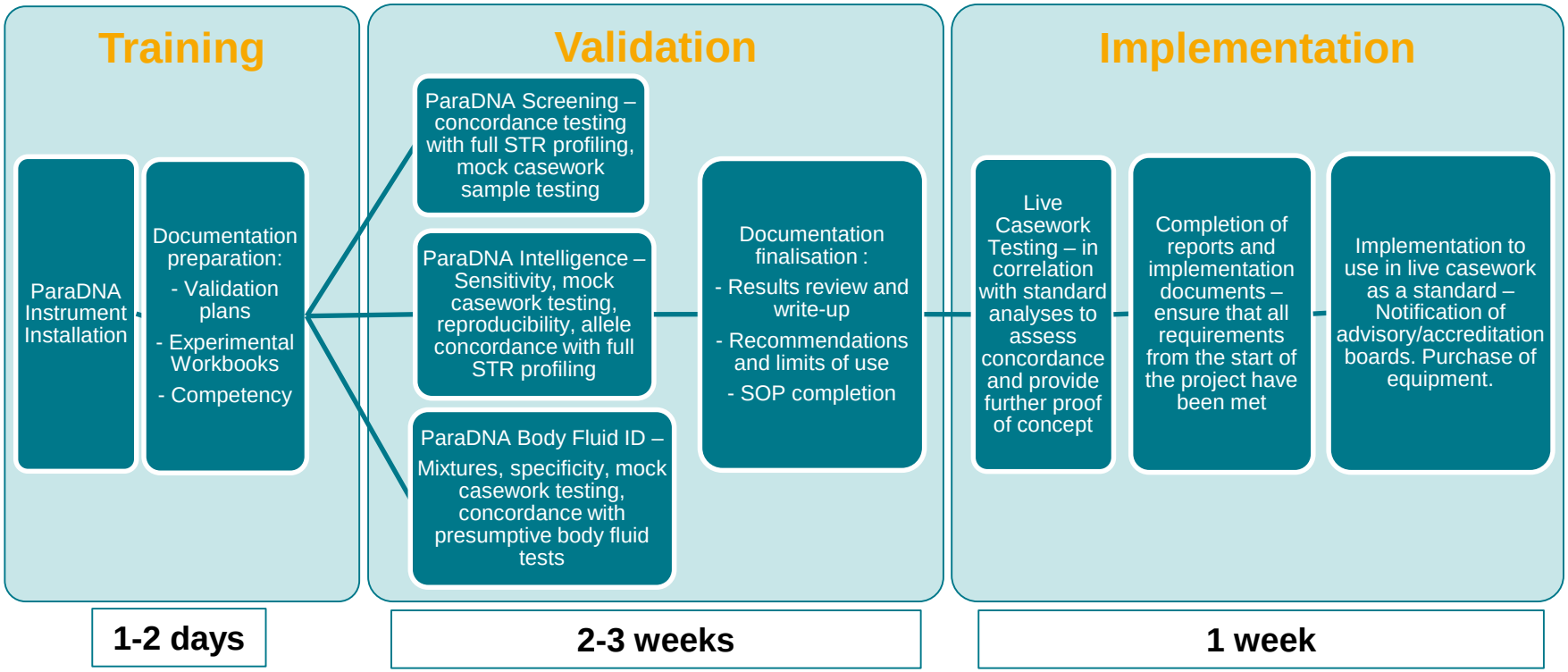
Free Warranty (year 1)

Yearly service contracts apx. $5k p/a

Validate before purchasing?

- Demo instrument
  - A *free* loaned instrument
  - LGC cover cost of shipping/packaging
- Training
  - An assigned Field Application Specialist will support for *free*
- Documentation
  - All required documentation to support customer provided – training documents, process trackers, SOP/WI templates used by others

Implementation Process Flow



Training

- A 2 day training course can cover Screening, Intell. and Body Fluid ID

- Training includes:
  - Introduction and installation
  - Technical overview
  - Sampling and Software
  - Practical sessions
  - Applications & Case Scenarios
  - Troubleshooting
  - Validation experimental and documentation support

Date	**Day 1** 2017	**Day 2** 2017
8:45 - 10:15	1. Introductions 2. Overview of ParaDNA Systems 3. Live setup and demonstration of the system — What's in the box? — Functions & Controls	10. Validation planning discussion — Developmental validation review — Previous validation setup & data — Validation Tools & Setup
10:15 – 10:30	Break	
10:30 – 12:00	1. ParaDNA Sampling — General overview & mock sampling — (Test Specific) 2. First Practical Session — Basic software navigation — Trainees process mock samples	11. Validation Sample Processing
12:00 – 12:45	Lunch	
12:45 – 14:15	1. Practical continued — Process mock samples 1. Further software functionality — Results output — Review & export — Search & compare (Intel only)	12. Validation Sample Processing
14:15 - 14:30	Break	
14:30 - 17:00	1. Practical continued.... — Further processing of mock samples — Review of results 2. Troubleshooting & Maintenance	13. Validation Sample Processing
	Extra Time – when required	

Validation – experimental plans

Screening - 1 week

- 40 casework style mock samples for correlation study
  - Blood (5)
  - Saliva (10)
  - Touch (25)
- Workbook and schedule templates available

Intelligence – 2 weeks

- 60 samples total
- Studies include
  - Sensitivity
  - Reproducibility
  - Casework sample success rates
  - Concordance
  - Case scenario testing
- Workbook and schedule templates available

Validation/Implementation

documentation support

- Full access to reference papers, posters, application notes on ParaDNA Screening or ParaDNA Intelligence
- Validation plan document
- Results review and write up
  - Experimental workbook
- SOP template
- Risk register

Laboratory:			Analyst:		Date:
Instrument serial no.		Chemistry lot no.		Sample Collector lot no.	
1. Sensitivity – all swabs sampled directly following LGC ParaDNA Sampling guidelines for swabs (to make samples pipette volume onto glass slide, allow to dry and then collect using wet cotton swab)					
	Blood on cotton swab (6)	Results		Semen/saliva on cotton swab (6)	Results
Neat 20 µl	2	20Bld 1: ___	20Bld 2: ___	2	20Sal 1: ___ 20Sal 2: ___
Neat 10 µl	2	10Bld 1: ___	10Bld 1: ___	2	10Sal 1: ___ 10Sal 2: ___
50 µl of 1/10 dilution	2	0.1Bld1: ___	0.1Bld1: ___	2	0.1Sal 1: ___ 0.1Sal 2: ___
2. Case type evidence testing – Testing of common casework items					
Samples	Sample mock up details			Sample ID	Results
Blood on fabric (4)	2 x 10ul blood on fabric from 2 donors, to be directly sampled following LGC ParaDNA Sampling guidelines			Bld 1	
				Bld 2	
				Bld 3	
				Bld 4	
Cigarettes from different donors (4)	2 cigarette from 2 donors to be directly sampled following LGC ParaDNA Sampling guidelines			Cig 1	
				Cig 2	
				Cig 3	
				Cig 4	
Clothing (Shirt collars and cuffs) (4)	1 x shirt/suit jacket from 2 donors to be directly sampled following LGC ParaDNA Sampling guidelines			Collar 1	
				Cuff 1	
				Collar 2	
				Cuff 2	
Drinks vessels (4)	2 x drinks vessel (bottle, can etc) from 2 donors to be directly sampled following LGC ParaDNA Sampling guidelines			Bottle 1	
				Bottle 2	
				Bottle 3	
				Bottle 4	
Finger prints (4)	2 x fingerprints from 2 donors on glass slides to be			FP 1	

Suggested DNA Evidence Workflow

Collect evidence at the scene

ParaDNA screening

Forensic DNA processing (traditional STR or Rapid)

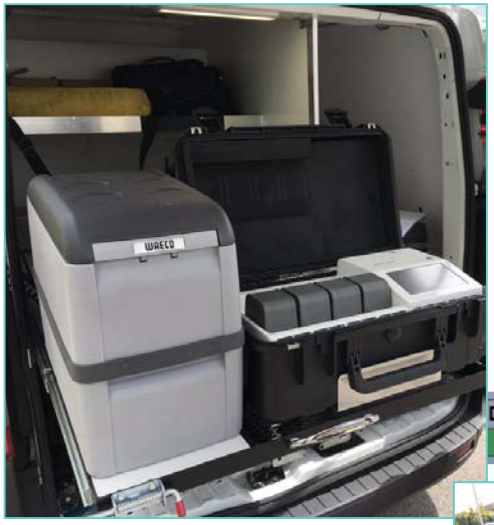
Goal: Recover probative evidence items and assess what may have happened at the scene

Goal: Triage and prioritize samples that are best suitable for DNA analysis, improve submission success rates and gain rapid investigative leads as quickly as possible

Goal: Generate useable DNA profiles for comparisons, database searches and case reporting

ParaDNA Systems augment the current investigative processes. Samples processed can still be sent for full STR analysis.

Home Office funded pilots



D16		D18		THO		D8		Amelogenin		D3		Score	Match Probability
	12	15	18	5	8	9	15	X	Y	18	-	51 %	1 : 2,300,000,000

CSI Kate Whitehead @RSSS_KWhitehead · Jan 29

This is my Wand, a magic wand that is going to process #DNA super quick. #TransformingForensics #CSI #LGC Exciting times :) pic.twitter.com/EF9SBXAvTD

User Case – DNA profiles direct from scenes

Real-life User Example

- CSI's use a USB stick to export data from the ParaDNA instrument and then import to their tablets
  - The tablets are encrypted and have added security measures to protect their data including ParaDNA profiles and crime scene photographs
- The ParaDNA profile data is in an encrypted ParaDNA XML format for extra security
- The XML file is then emailed over a secure connection to be searched on the UK NDNAD

SUMMARY

SUMMARY

Identify missing persons

Sexual assault casework

Disaster Victim Identification and triage

Counter-terror activities

People trafficking

Applications

Military

Use the ParaDNA Intelligence System to maximise your Site Exploitation potential. Identify or eliminate persons of interest in just 75 minutes.

The ParaDNA Intelligence System is an invaluable tool when conducting Identity Intelligence (I2) operations. The on-board search and compare capability can be used to track unknown targets or to establish the identity of a person by leveraging watch-list information.

Screen borders and check-points to look for individuals or identify close familial relationship claims.

Compare individuals with DNA from recovered material.

How to make contact with us

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twitter.com/LGC_ParaDNA

We'd love to hear from you