


# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

 <p><b>2045</b></p> <p>Accredited to <b>ISO/IEC 17025:2017</b></p>	<p><b>Orchid Cellmark Ltd (trading as Cellmark)</b></p> <p>Issue No: 079 Issue date: 13 September 2019</p>	
	<p>Unit 16 Blacklands Way Abingdon Business Park Abingdon Oxfordshire OX14 1DY</p>	<p>Contact: Mr Peter Harper Tel: +44 (0)1235 528609 Fax: +44 (0)1235 554428 E-Mail: pharper@cellmark.co.uk Website: www.cellmarkforensics.co.uk Website: www.cellmark.co.uk</p>
<p>Testing performed by the Organisation at the locations specified below</p>		

### Locations covered by the organisation and their relevant activities

#### Laboratory locations:

Location details	Activity	Location code
<p><b>Address</b> Unit 16 Blacklands Way Abingdon Business Park Abingdon Oxfordshire OX14 1DY</p> <p><b>Local contact</b> Mr Peter Harper  Tel: +44 (0)1235 528609 Fax: +44 (0)1235 554428 E-Mail: pharper@cellmark.co.uk Website: www.cellmark.co.uk</p>	<p>Forensic Testing; Paternity and Relationship testing; Forensic and Veterinary, Forensic Analysis</p>	A
<p><b>Address</b> Unit 1 Buckshaw Link Ordnance Road Buckshaw Village Chorley Lancashire PR7 7EL</p> <p><b>Local contact</b> Mr Peter Harper  Tel: +44(0)1235 528609 Fax: +44(0)1235 554428 E-Mail: pharper@cellmark.co.uk Website: www.cellmark.co.uk</p>	<p>Forensic Analysis</p>	B
<p><b>Address</b> The Arrow Centre, Annesley Road, Hucknall, Nottinghamshire NG15 8AY</p> <p><b>Local contact</b> Mr Peter Harper  Tel: +44(0)1235 528609 Fax: +44(0)1235 554428 E-Mail: pharper@cellmark.co.uk Website: www.cellmark.co.uk</p>	<p>Forensic Analysis</p>	C



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DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	<u>Forensic Testing</u>	The organisation has demonstrated adherence to the relevant requirements of the Forensic Science Regulators Code of Practice and Conduct in relation to their Forensic Activities	A, B, C
BODY FLUIDS and TISSUES	<u>Forensic Analysis</u>		
Blood	DNA Profiling: Short Tandem Repeat (STR) DNA profiling for forensic analysis of:	Documented In-House Methods using manual/automated extraction	A
- Whole	- Low Template DNA (elevated cycle number (SGM Plus) and post PCR enhancement SGM Plus and NGM SElect))	- Thermofisher Automate Express (FSP0124)	
- Stains	- Crime Scene Samples meeting the requirements of the Custodian for the Purpose of Supply to the National DNA Database	- Qiagen (EZ1) (FSP0050)	
- FTA cards	- Subject Samples (PACE and Volunteer) meeting the requirements of the Custodian for the Purpose of Supply to the National DNA Database	- Chelex (FSP0038)	
Semen	- Elimination Database samples (VED/SED and PED)	- FTA purification (STR0187/FSP0156)	
- Whole	- Environmental Monitoring Samples	- DNA IQ (STR0119)	
- Azoospermic		Documented In-House Methods using manual quantification	
Saliva		- Pico Green	
- Whole		- Oli Green (QC0005/STR0161)	
- Stains		Real Time Quantification using Quantiplex HYres Dual RT-PCR (FSP0054)	
- FTA Cards		Documented In-House Methods (FSP0156/STR0159) using manual amplification (PCR) and the following chemistry:	
- Swabs (buccal cells)		- SGM Plus	
Hair		- NGM SElect	
Cellular Material		Documented In-House Methods (FSP0028/STR0162/STR0183) using Electrophoresis	
		- Applied Biosystems 3130xl Genetic Analyser©	
		- Applied Biosystems 3500xl Genetic Analyser© for crime scene samples only	



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Blood <ul style="list-style-type: none"> <li>- Whole</li> <li>- Stains</li> <li>- FTA cards</li> </ul> Semen <ul style="list-style-type: none"> <li>- Whole</li> <li>- Azoospermic</li> </ul> Saliva <ul style="list-style-type: none"> <li>- Whole</li> <li>- Stains</li> <li>- FTA Cards</li> <li>- Swabs (buccal cells)</li> </ul> Hair           Cellular Material           Body Tissue <ul style="list-style-type: none"> <li>- Nail</li> </ul>	DNA Profiling: Short Tandem Repeat (STR)/Y chromosome DNA profiling for forensic analysis of: <ul style="list-style-type: none"> <li>- Crime Scene Samples meeting the requirements of the Custodian for the Purpose of Supply to the National DNA Database</li> <li>- Subject Samples (PACE and Volunteer) meeting the requirements of the Custodian for the Purpose of Supply to the National DNA Database</li> <li>- Elimination Database samples (VED/SED and PED)</li> <li>- Environmental Monitoring Samples</li> </ul>	Documented In-House Methods using manual/automated extraction <ul style="list-style-type: none"> <li>- Qiagen (EZ1) (FSP0050)</li> <li>- Modified organic extraction (FSP0038)</li> <li>- Fast differential semen DNA extraction (FSP0087)</li> <li>- Direct semen extraction (FSP0102)</li> <li>- Alkali Lysis (subject buccal samples only) extraction (FSP0033)</li> </ul> Documented In-House Methods using manual quantification <ul style="list-style-type: none"> <li>- Real Time Quantification using Quantiplex HYres Dual RT-PCR (FSP0119)</li> </ul> Documented In-House Methods (FSP0156/FSP0149) using manual amplification (PCR) and the following chemistry: <ul style="list-style-type: none"> <li>- NGM SElect</li> <li>- PPY 23</li> </ul> Documented In-House Methods (FSP0170) using Electrophoresis Applied Biosystems 3500xl Genetic Analyser©	B



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BODY FLUIDS and TISSUES  Blood - Stains Saliva - Stains - Swabs Hair  Cellular Material	<u>Forensic Analysis</u>  DNA Profiling: Short Tandem Repeat (STR) DNA profiling for forensic analysis of: - Crime Scene Samples meeting the requirements of the Custodian for the Purpose of Supply to the National DNA Database - Environmental Monitoring Samples	Documented In-House Methods using manual/automated extraction Automate Express (FSP0124) Documented In-House Methods using manual quantification - Real Time Quantification using Thermo Fisher 7500  Documented In-House Methods (FSP0156/STR0159) using manual amplification (PCR) and the following chemistry: - NGM SElect  Documented In-House Methods (FSP0028/STR0162/STR0183) using Electrophoresis - Applied Biosystems 3130xl Genetic Analyser© - Applied Biosystems 3500xl Genetic Analyser© for crime scene samples only	C
	<u>Related Opinions and Interpretation</u>  Interpretation of DNA profiles generated internally from crime stains (single source/major-minor mixtures/complex mixtures) and reference samples  Statistical analysis and comparison of DNA profiles generated from crime stains with compatible reference DNA profiles (internally generated or from other accredited laboratories)	Documented In-House methods (STR0147/STR0183/STR0184/STR0194/FRP0122/FSP0133/GM0004/GM0005/FSP0021/FRP0151/FRP0152) - Genetic Characterisation o GMID 3.2.1 o GeneMapper IDX o Expert systems: ▪ Mixtures Analyser ▪ Sequencher ▪ DNA Resolve ▪ ReliCalc ▪ STRMix (v2.5)	A A A, B A A, B A, B A, B



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<p>BODY FLUIDS and TISSUES</p> <p>Blood - FTA cards</p> <p>Saliva - FTA Cards</p>	<p><u>Forensic Analysis</u></p> <p><u>Forensic Testing</u></p> <p>DNA Profiling: Short Tandem Repeat (STR) DNA profiling for forensic analysis of:</p> <p>Subject Samples for input into population databases.</p>	<p>Documented In-House Methods (STR0202) &amp; manufacturer specifications using FTA purification (STR0187/FSP015) and amplification (PCR) using the following chemistry:</p> <ul style="list-style-type: none"> <li>- PowerPlex® Fusion 6C</li> </ul> <p>Documented In-House Methods (STR0203) using Electrophoresis:</p> <ul style="list-style-type: none"> <li>- Applied Biosystems 3500xl Genetic Analyser©</li> </ul> <p>Genetic characterisation using documented in-house methods (STR0204):</p> <ul style="list-style-type: none"> <li>- GeneMapper IDX v1.4</li> </ul>	<p align="center">A</p>



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<p><b>BODY FLUIDS and TISSUES (cont'd)</b></p> <p>Blood</p> <ul style="list-style-type: none"> <li>- Whole</li> <li>- Stains</li> <li>- FTA cards</li> </ul> <p>Semen</p> <ul style="list-style-type: none"> <li>- Whole</li> <li>- Azoospermic</li> </ul> <p>Saliva</p> <ul style="list-style-type: none"> <li>- Whole</li> <li>- Stains</li> <li>- FTA Cards</li> <li>- Swabs (buccal cells)</li> </ul> <p>Faeces</p> <p>Urine</p> <p>Stomach Contents</p> <p>Hair</p> <p>Cellular Material</p> <p>Body Tissue</p> <ul style="list-style-type: none"> <li>- Nail</li> <li>- Muscle</li> <li>- Bone</li> <li>- Teeth</li> <li>- Amniotic Fluid</li> <li>- Products of conception</li> </ul>	<p><u>Forensic Analysis</u> (cont'd)</p> <p>DNA Profiling: Short Tandem Repeat (STR)/Mitochondrial/Y Chromosome DNA profiling for forensic analysis of:</p> <ul style="list-style-type: none"> <li>- Low Template DNA (elevated cycle number and post PCR enhancement)</li> <li>- Crime Scene Samples</li> </ul>	<p>Documented In-House Methods using manual/automated extraction</p> <ul style="list-style-type: none"> <li>- Automate Express (FSP0124)</li> <li>- Chelex (FSP0038)</li> <li>- FTA purification (STR0187/FSP0156)</li> <li>- DNA IQ (STR0119)</li> </ul> <p>Documented In-House Methods using Manual quantification</p> <ul style="list-style-type: none"> <li>- Oli Green (QC0005/STR0161)</li> <li>- Real Time Quantification using Quantiplex HYres Dual RT-PCR (FSP0054) Mini-gel</li> </ul> <p>Documented In-House Methods using Manual amplification (PCR) and the following chemistry:</p> <ul style="list-style-type: none"> <li>- SGM Plus (FSP0156/STR0159)</li> <li>- NGM SElect</li> <li>- Identifier</li> <li>- Yfiler (FSP0156)</li> <li>- mtDNA (MIT0004)</li> <li>- Minifiler (FSP0070)</li> <li>- Powerplex Y23 (FSP0149)</li> </ul> <p>Documented In-House Methods (FSP0028/STR0162/STR0188) using Electrophoresis</p> <ul style="list-style-type: none"> <li>- Applied Biosystems 3130xl Genetic Analyser©</li> <li>- Applied Biosystems 3500xl Genetic Analyser© for crime scene samples only following NGM SElect and PPY23 amplification</li> </ul>	<p>A</p>



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BODY FLUIDS and TISSUES (cont'd)	<p><u>Forensic Analysis</u> (cont'd)</p> <p><u>Related Opinions and Interpretation</u></p> <p>Interpretation of DNA profiles generated internally from crime stains (single source/major-minor mixtures) and reference samples</p> <p>Statistical analysis and comparison of DNA profiles generated from crime stains with compatible reference DNA profiles (internally generated or from other accredited laboratories)</p>	<p>Documented In-House methods (STR0168/STR0183/STR0184/STR0194/FRP0135)</p> <ul style="list-style-type: none"> <li>- Genetic Characterisation               <ul style="list-style-type: none"> <li>o GMID 3.2.1</li> <li>o GeneMapper IDX</li> <li>o Expert systems:                   <ul style="list-style-type: none"> <li>▪ Sequencer</li> </ul> </li> </ul> </li> </ul>	A



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	<p><u>Related Opinions and Interpretation</u></p> <p>Comparison, interpretation and statistical analysis of DNA profiles against compatible DNA Profile information from within submitted cases</p>	<p>Documented In-House methods (STR0186/STR0183/STR0184/STR0194) - Genetic Characterisation o GMID 3.2 o GeneMapper IDX</p>	A





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BODY FLUIDS and TISSUES (cont'd)  ANY MATERIAL	<u>Forensic Analysis</u>  Searching for: - Blood - Semen - Saliva - Urine - Hairs  Recovery and preparation, including for contingency purposes, for subsequent DNA analysis by an ISO/IEC 17025 accredited laboratory of the following from searched materials and swabs: - Blood - Semen - Saliva - Hairs - Cellular Material	Documented In-House Methods (FSP0027/FSP0069) using: - visual examination - White light - Filter source - High Energy light Sources - low power microscopy - high power microscopy - chemical testing (see below)  Documented In-House Methods (FSL0002) using: - cutting - swabs and swabbing - extraction of stained materials - extraction of swabs - taping - mini-taping	A, B, C A, B, C A, B A, B A, B, C A, B A, B, C  A, B, C A, B, C A, B, C A, B A, B A, B, C
Blood	Presumptive testing for blood via detection of: - Peroxidase - Human Haemoglobin  <u>Related Opinions and Interpretations</u>  Identification, interpretation and recording of blood patterns (BPA) on clothing and other items examined at the laboratory	Documented In-House Methods (FSL0027, FSL0069, FSL0070, FSL0013, FSL0031, FSL0058, FSL0082) using: - Visual Examination - Alternative light sources - KM (Kastle Meyer) - Hemastix (A only (CS DNA)) - Luminol - Hydrogen Peroxide - OBTI  Documented In-House Methods (FSL0044/TG0010) using: - visual examination - low power microscopy - dimensional measurement	A, B, C A, B A, B, C A, C A, B A, B A, B  A. B



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BODY FLUIDS and TISSUES (cont'd)	<u>Forensic Analysis</u> (cont'd)		
Semen	Presumptive testing for seminal fluid, via detection of: <ul style="list-style-type: none"> <li>- Acid Phosphatase</li> <li>- Choline</li> </ul>	Documented In-House Methods (FSL0005, FSL0007) using: <ul style="list-style-type: none"> <li>- Visual Examination</li> <li>- Alternative light sources</li> <li>- Acid phosphatase detection (colour reaction)</li> <li>- Choline detection by Florence Iodine test</li> </ul>	A, B
	Confirmatory testing for seminal fluid via identification of spermatozoa	Documented In-House Methods (FSL0009/FSL0017/FSL0008) using: <ul style="list-style-type: none"> <li>- High power microscopy</li> <li>- Christmas Tree staining</li> <li>- Haematoxylin and Eosin staining</li> </ul>	A, B
Saliva	Presumptive testing for saliva via detection of: <ul style="list-style-type: none"> <li>- Amylase</li> </ul>	Documented In-House Methods (FSL0004) using: <ul style="list-style-type: none"> <li>- Visual examination</li> <li>- Alternative light sources</li> <li>- Phadebas paper</li> <li>- Phadebas tube test</li> </ul>	A, B
Saliva	Presumptive testing for saliva via detection of: <ul style="list-style-type: none"> <li>- Amylase</li> </ul>	Documented In-House Methods (FSL0004) using: <ul style="list-style-type: none"> <li>- Phadebas paper</li> <li>- Phadebas tube test</li> </ul>	C
Urine	Presumptive testing for urine via detection of: <ul style="list-style-type: none"> <li>- Urea</li> </ul>	Documented In-House Methods (FSL0060) using: <ul style="list-style-type: none"> <li>- Visual examination</li> <li>- Alternative light sources</li> <li>- DMAC</li> <li>- Azostix</li> </ul>	A, B
Hairs	Differentiation of human and animal hairs	Documented In-House Methods (FSL0010/FSL0068) using: <ul style="list-style-type: none"> <li>- visual examination</li> <li>- low power microscopy</li> <li>- high power microscopy</li> </ul>	A, B



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BODY FLUIDS and TISSUES (cont'd)	<u>Forensic and Veterinary</u>		
Blood Body Tissue DNA FTA Cards	Analysis of Bovine Short Tandem Repeat (STR) loci	Documented In-House Methods defining extraction, amplification, electrophoresis and profile designation of Bovine samples using Finnzymes kit 1.2 (BOVSTR0003)	A
Forensic samples and meat products	<u>Related Opinions and Interpretations</u>  Identification of animal species by sequencing of the 12S rRNA mitochondrial gene from DNA extracts	Documented In-House Methods (SID0004) defining extraction, amplification, sequencing and analysis and comparison with reference sequences and analysis (SID0001-05).  In house methods for relationship analysis (BOVSTR0006-7)	A
BODY FLUIDS and TISSUES - TOXICOLOGY Hair	<u>Forensic Analysis</u>  Presumptive Screening for the presence of drugs of abuse (cut-off limit):	Documented in house method (TOX0009) using liquid-liquid extraction and LC-MS/MS	A
	Amphetamines Group: Amphetamine (0.05 ng/mg) Methamphetamine (0.05 ng/mg) Methylenedioxyamphetamine MDA (0.05 ng/mg) Methylenedioxymethamphetamine MDMA (0.05 ng/mg) Methylenedioxyethylamphetamine MDEA (0.05 ng/mg) Methylbenzodioxylbutanamine MBDB (0.05 ng/mg)		A
	Cathinone Group: Mephedrone (0.05 ng/mg)		A
	Cocaine Group: Cocaine (0.05 ng/mg)		A
	Miscellaneous Group: Ketamine (0.1 ng/mg)		A



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BODY FLUIDS and TISSUES - TOXICOLOGY Hair	<u>Forensic Analysis</u>	Documented in house method (TOX0009) using liquid-liquid extraction and LC-MSMS	A
	Presumptive Screening for the presence of drugs of abuse (cut-off limit):		
	Benzodiazepines Group: Diazepam (0.05 ng/mg) Temazepam (0.05 ng/mg) Oxazepam (0.05 ng/mg) Chlordiazepoxide (0.05 ng/mg) Desmethyldiazepam (0.05 ng/mg)		
	Opioid Group: 6-Monoacetylmorphine - 6-MAM (0.05 ng/mg) Codeine (0.05 ng/mg) Dihydrocodeine (0.05 ng/mg) Methadone (0.05 ng/mg) Morphine (0.05 ng/mg)		
Hair	Confirmation (above specified cut-off limit) and Quantitative Analysis of the following drugs (cut-off limit) (Concentration Range):	Documented in house method (TOX0013) using liquid-liquid extraction and LC-MS/MS	A
	Amphetamine Group :		
	Amphetamine (0.025ng/mg); (0.025-2.5ng/mg) Methamphetamine (0.025 ng/mg); (0.025-2.5ng/mg) Methylenedioxyamphetamine MDA (0.025 ng/mg); (0.025-2.5ng/mg) Methylenedioxymethamphetamine MDMA (0.025 ng/mg); (0.025-2.5ng/mg) Methylenedioxyethylamphetamine MDEA (0.025 ng/mg); (0.025-2.5ng/mg) Methylbenzodioxolylbutanamine MBDB (0.025 ng/mg); (0.025-2.5ng/mg)		
Cathinone Group: Mephedrone (0.025 ng/mg); (0.025-2.5ng/mg)		A	



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BODY FLUIDS and TISSUES TOXICOLOGY (cont'd) Hair	<u>Forensic Analysis</u> (cont'd)  Confirmation (above specified cut-off limit) and Quantitative Analysis of the following drugs (cut-off limit); (Concentration Range): Cocaine Group : Cocaine (0.025 ng/mg); (0.025-2.5ng/mg) Cocaethylene (0.025 ng/mg); (0.025-2.5ng/mg) Benzoylecgonine (0.025 ng/mg); (0.025-2.5ng/mg)) Norcocaine (0.025 ng/mg); (0.025-2.5ng/mg) Anhydroecgonine methyl ester (AEME) (0.025 ng/mg); (0.025-2.5ng/mg) Ecgonine methyl ester (EME) (0.025 ng/mg); (0.025-2.5ng/mg)	Documented in house method (TOX0013) using liquid-liquid extraction and LC-MS/MS	A
	Opioid Group : Methadone (0.025 ng/mg); (0.025-2.5ng/mg) 2-Ethylidene-1,5-dimethyl-3, 3 diphenylpyrrolidine EDDP (0.025 ng/mg); (0.025-2.5ng/mg) Morphine (0.025 ng/mg); (0.025-2.5ng/mg) Codeine (0.025 ng/mg); (0.025-2.5ng/mg) 6-Monoacetylmorphine (6-MAM) (0.025 ng/mg); (0.025-2.5ng/mg) Heroin (0.025 ng/mg); (0.025-2.5ng/mg) 6-Acetylcodeine (0.025 ng/mg); (0.025-2.5ng/mg) Dihydrocodeine (0.025 ng/mg); (0.025-2.5ng/mg)		A



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES -TOXICOLOGY	<u>Forensic Analysis</u> (cont'd)		
	Benzodiazepines Group: Diazepam (0.025 ng/mg); (0.025-2.5ng/mg) Temazepam (0.025 ng/mg); (0.025-2.5ng/mg) Oxazepam (0.025 ng/mg); (0.025-2.5ng/mg) Chlordiazepoxide (0.025 ng/mg); (0.025-2.5ng/mg) Desmethyldiazepam (0.025 ng/mg); (0.025-2.5ng/mg)		A
Hair	Confirmation (above specified cut-off limit) and Quantitative Analysis of the following drugs (cut-off limit); (Concentration Range): Miscellaneous Group: Ketamine (0.1 ng/mg); (0.1-25 ng/mg)	Documented in house method (TOX0014) using liquid-liquid extraction and LC-MS/MS	A
	Ethyl Glucuronide (EtG) (0.02 ng/mg); (0.02- 0.5 ng/mg)	Documented in house method (TOX0015) using solid phase extraction and GC-MS/MS	A
	Cannabis Group : 11-Hydroxy- $\Delta_9$ -THC - THC-OH (0.0002 ng/mg); (0.0002-0.005ng/mg) Delta-9-Tetrahydrocannabinol - THC (0.02 ng/mg); (0.02-0.5ng/mg) Trans-11-Nor-9-carboxy- $\Delta^9$ -THC - THC-COOH (0.0002 ng/mg); (0.0002-0.005ng/mg)	Documented in house method (TOX0011) using solid-phase extraction and GC-MS/MS	A
Hair	Confirmation (above specified cut-off limit) of the following drugs (cut-off limit)		A
	Cannabis Group : Cannabidiol (0.02 ng/mg) Cannabinol (0.02 ng/mg)	Documented in house method (TOX0011) using solid-phase extraction and GC-MS/MS	A



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2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

**Orchid Cellmark Ltd (trading as Cellmark)**  
**Issue No: 079 Issue date: 13 September 2019**

**Testing performed by the Organisation at the locations specified**

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES -TOXICOLOGY  Whole Blood (Preserved)	<u>Forensic Analysis</u> (cont'd)  Detection and quantitation of drugs in relation to s5A of the Road Traffic Act 1988 (as amended) and The Drug Driving (Specified Limits) (England and Wales) Regulations 2014 (Amended) (Cut-Off): Amphetamine (250 µg/L) Benzoylcegonine(50 µg/L) Clonazepam (50 µg/L) Cocaine (10 µg/L) Diazepam (550 µg/L) Flunitrazepam (300 µg/L) Ketamine (20 µg/L) Lorazepam (100 µg/L) Lysergic Acid Diethylamide – LSD (1µg/L) Methadone (500 µg/L) Methylamphetamine (10 µg/L) Methylenedioxymethamphetamine – MDMA (10 µg/L) 6-Monoacetylmorphine (5 µg/L) Morphine (80 µg/L) Oxazepam (300 µg/L) Temazepam (1000 µg/L)	Documented in house (TOX0026) using: - Protein Precipitation - LC-MS/MS	A
Blood / Urine (Preserved, Unpreserved)	Detection and quantitation of the following alcohol in relation to Section 5 of the Road Traffic Act 1988 (as amended) (cut-off limit) Alcohol 10mg/100mL	Documented in house (TOX0029) using : HS-GC-FID,	A
Blood (Preserved, Unpreserved)	Confirmation (above specified cut-off limit) of the following drugs (cut-off limit):  Cathinone Group: 4-methylethcathinone - 4-MEC (0.08 µg/L) Mephedrone - 4-Methylmethcathinone (0.15 µg/L)	Documented in house (TOX0026) using: - Protein Precipitation LC-MS/MS	A  A



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**Issue No: 079 Issue date: 13 September 2019**

**Testing performed by the Organisation at the locations specified**

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	<u>Forensic Analysis</u> (cont'd)		
Blood (Preserved, Unpreserved)	Confirmation (above specified cut-off limit) of the following drugs (cut-off limit):  Cocaine Group: Benzoyllecgonine (0.09 µg/L) Cocaethylene (0.12 µg/L) Cocaine (0.03 µg/L) Ecgonine methyl ester - EME (0.53 µg/L) Norcocaine (0.21 µg/L)  Opioid Group: 2-ethylidene-1,5-dimethyl-3, 3 diphenylpyrrolidine - EDDP (0.06 µg/L) 6-Acetylcodeine (0.14 µg/L) 6-Monoacetylmorphine - 6-MAM (0.13 µg/L) Buprenorphine (0.09 µg/L) Codeine (0.51 µg/L) Dihydrocodeine (0.66 µg/L) Methadone (0.03 µg/L) Morphine (0.91 µg/L)  Piperazine Group: 3-Trifluoromethylphenylpiperazine - TFMPP (0.19 µg/L) Benzylpiperazine - BZP (0.33 µg/L) meta-Chlorophenylpiperazine - m-CPP (0.27 µg/L)  Miscellaneous Group: Ketamine (0.2 µg/L) Lysergic Acid Diethylamide - LSD (0.01 µg/L)	Documented in house (TOX0026) using: - Protein Precipitation LC-MS/MS	A  A  A  A  A





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**Orchid Cellmark Ltd (trading as Cellmark)**  
**Issue No: 079 Issue date: 13 September 2019**

**Testing performed by the Organisation at the locations specified**

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd) Blood (Preserved, Unpreserved)	<u>Forensic Analysis</u> (cont'd)  Confirmation (above specified cut-off limit) of the following drugs (cut-off limit):  Amphetamines: Amphetamine (0.47 µg/L) Butylone (0.1 µg/L) Methamphetamine (0.1µg/L) Methylenedioxyamphetamine (MDA) (0.34 µg/L) Methylenedioxymethamphetamine (MDMA) (0.05 µg/L) Methylenedioxypropylone (MDPV) (0.03 µg/L) Methylone (0.11 µg/L) Naphyrone (0.26 µg/L)  Benzodiazepines: Alprazolam (0.1 µg/L) Clonazepam (1.3 µg/L) Desmethyldiazepam (0.66 µg/L) Diazepam (0.1 µg/L) Flunitrazepam (0.7 µg/L) Lorazepam (1.86 µg/L) Oxazepam (0.13 µg/L) Phenazepam (0.74 µg/L) Temazepam (0.18 µg/L)	Documented in house (TOX0026) using: - Protein Precipitation LC-MS/MS	A
			A
Blood (Preserved, Unpreserved)	Quantitative analysis of the following drugs (concentration range):  Amphetamine Group: Amphetamine (10-1000 µg/L) Butylone (5-500 µg/L) Methylamphetamine (1-100 µg/L) Methylenedioxyamphetamine - MDA (10-1000 µg/L) Methylenedioxymethamphetamine - MDMA (1-100 µg/L) Methylenedioxypropylone - MDPV (10-1000 µg/L) Methylone (10-1000 µg/L) Naphyrone (10-1000 µg/L)	Documented in house (TOX0026) using: - Protein Precipitation LC-MS/MS	A
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**Orchid Cellmark Ltd (trading as Cellmark)**  
**Issue No: 079 Issue date: 13 September 2019**

**Testing performed by the Organisation at the locations specified**

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd) Blood (Preserved, Unpreserved)	<u>Forensic Analysis</u> (cont'd)  Quantitative analysis of the following drugs (concentration range):  Benzodiazepine Group: Alprazolam (2-100 µg/L) Clonazepam (10-1000 µg/L) Desmethyldiazepam (10-1000 µg/L) Diazepam (10-1000 µg/L) Flunitrazepam (10-1000 µg/L) Lorazepam (5-500 µg/L) Oxazepam (15-1500 µg/L) Phenazepam (20-1000 µg/L) Temazepam (15-1500 µg/L)  Cathinone Group: 4-Methylmethcathinone – 4-MEC (10-1000 µg/L) - Mephedrone (10-1000 µg/L)  Cocaine Group: Benzoylecgonine (10-1000 µg/L) Cocaethylene (10-1000 µg/L) Cocaine (1-100 µg/L) Norcocaine (10-1000 µg/L)  Miscellaneous Group: Ketamine (10-1000 µg/L) Lysergic Acid Diethylamide - LSD (0.5-50 µg/L)  Opioid Group: 2-ethylidene-1,5-dimethyl-3, 3-diphenylpyrrolidine - EDDP (5-500 µg/L) 6-Acetylcodeine (1-100 µg/L) 6-Monoacetylmorphine - 6-MAM (1-100 µg/L) Buprenorphine (1-100 µg/L) Codeine (10-1000 µg/L) Dihydrocodeine (10-1000 µg/L) Methadone (15-1500 µg/L) Morphine (10-1000 µg/L)	Documented in house (TOX0026) using: - Protein Precipitation LC-MS/MS	A
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**Issue No: 079 Issue date: 13 September 2019**

**Testing performed by the Organisation at the locations specified**

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY	<u>Forensic Analysis</u> (cont'd)		
Blood (Preserved, Unpreserved) Urine (Preserved, Unpreserved)	Confirmation (above specified cut-off limit) of the following drugs (cut-off limit Blood urine): Cannabis Group : - 11-Hydroxy- $\Delta_9$ -THC - THC-OH (0.0278 $\mu\text{g/L}$ ; 5 $\mu\text{g/L}$ ) - Cannabidiol (0.0347 $\mu\text{g/L}$ ; 0.5 $\mu\text{g/L}$ ) - Cannabinol (0.0138 $\mu\text{g/L}$ ; 0.5 $\mu\text{g/L}$ ) - Delta-9-Tetrahydrocannabinol - THC (0.0350 $\mu\text{g/L}$ ; 0.5 $\mu\text{g/L}$ ) - Trans-11-Nor-9-carboxy- $\Delta_9$ -THC - THC-COOH (0.0280 $\mu\text{g/L}$ ; 5 $\mu\text{g/L}$ )	Documented in house (TOX0024) using: - Solid phase extraction - Gas chromatography tandem mass spectrometry (GC-MS/MS)	A
Whole Blood (Preserved)	Detection and quantitation of drugs in relation to s5A of the Road Traffic Act 1988 (as amended) and The Drug Driving (Specified Limits) (England and Wales) Regulations 2014 (Amended) (Cut-off):  Amphetamine (250 $\mu\text{g/L}$ ) Benzoylcegonine(50 $\mu\text{g/L}$ ) Clonazepam (50 $\mu\text{g/L}$ ) Cocaine (10 $\mu\text{g/L}$ ) Diazepam (550 $\mu\text{g/L}$ ) Flunitrazepam (300 $\mu\text{g/L}$ ) Ketamine (20 $\mu\text{g/L}$ ) Lorazepam (100 $\mu\text{g/L}$ ) Lysergic Acid Diethylamide – LSD (1 $\mu\text{g/L}$ ) Methadone (500 $\mu\text{g/L}$ ) Methylamphetamine (10 $\mu\text{g/L}$ ) Methylenedioxymethamphetamin e – MDMA (10 $\mu\text{g/L}$ ) Morphine (80 $\mu\text{g/L}$ ) Oxazepam (300 $\mu\text{g/L}$ ) Temazepam (1000 $\mu\text{g/L}$ )	Documented in house (TOX0040) using: - Protein Precipitation - SPE extraction - LC-MS/MS	A



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ISO/IEC 17025:2017

**Schedule of Accreditation**  
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2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

**Orchid Cellmark Ltd (trading as Cellmark)**  
**Issue No: 079 Issue date: 13 September 2019**

**Testing performed by the Organisation at the locations specified**

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<p><b>BODY FLUIDS and TISSUES - TOXICOLOGY</b></p> <p>Blood (Preserved, Unpreserved) Urine (Preserved, Unpreserved)</p>	<p><u>Forensic Analysis</u> (cont'd)</p> <p>Confirmation (above specified cut-off limit) of the following drugs (cut-off limit Blood; Urine):</p> <p>Amphetamines group: Amphetamine (0.75 µg/L; 0.75 µg/L) Butylone (0.25 µg/L; 5 µg/L) Methamphetamine (0.25 µg/L; 0.25 µg/L) Methylenedioxyamphetamine (MDA) (0.5 µg/L; 0.5 µg/L) Methylenedioxymethamphetamine (MDMA) (0.5 µg/L; 0.25 µg/L) Methylenedioxypropylamphetamine (MDPV) (0.25 µg/L; 0.25 µg/L) Methylone (0.25 µg/L; 0.25 µg/L) Naphyrone (0.25 µg/L; 0.5 µg/L)</p> <p>Amphetamines group Ctd: PMA (para-Methoxyamphetamine) (0.5 µg/L; 0.5 µg/L) PMMA (para-Methoxymethamphetamine) (0.25 µg/L; 0.5 µg/L) Methylphenidate (0.05 µg/L; 0.05 µg/L)</p>	<p>Documented in house (TOX0040) using:</p> <ul style="list-style-type: none"> <li>- Protein Precipitation</li> <li>- SPE</li> <li>- LC-MS/MS</li> </ul>	<p style="text-align: center;">A</p> <p style="text-align: center;">A</p>



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**Testing performed by the Organisation at the locations specified**

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<b>BODY FLUIDS and TISSUES - TOXICOLOGY</b>  Blood (Preserved, Unpreserved) Urine (Preserved, Unpreserved)	Confirmation (above specified cut-off limit) of the following drugs (cut-off limit Blood; Urine):	Documented in house (TOX0040) using: - Protein Precipitation - SPE LC-MS/MS	A
	Benzodiazepines group: 7-Aminoclonazepam (1µg/L; 0.5µg/L) 7-Aminoflunitrazepam (0.5 µg/L; 0.5 µg/L) 7-Aminonitrazepam (1 µg/L; 1 µg/L) Alprazolam (0.5 µg/L; 0.5 µg/L) Clonazepam (1 µg/L; 1 µg/L) Chlordiazepoxide (0.75 µg/L; 0.75 µg/L) Diazepam (1.5 µg/L; 1.5 µg/L) Desmethyldiazepam (1 µg/L; 1 µg/L) Flunitrazepam (1 µg/L; 1 µg/L) Lorazepam (5 µg/L; 5 µg/L) Midazolam (0.1 µg/L; 0.1 µg/L) Nitrazepam (1 µg/L; 5 µg/L) Oxazepam (1.5 µg/L; 1.5 µg/L) Phenazepam (1 µg/L; 1 µg/L) Temazepam (0.75 µg/L; 0.75 µg/L) Triazolam (0.1 µg/L; 0.1 µg/L)		A
	Cathinone Group: Cathinone (0.5 µg/L; 0.5 µg/L) Mephedrone (0.25 µg/L; 0.25 µg/L) Methylethcathinone - 4-MEC (0.25 µg/L; 0.25 µg/L) Norpseudoephedrine - Cathine (1 µg/L; 1 µg/L)		A
	Cocaine GroupCont : Benzoylecgonine (0.75 µg/L; 0.75 µg/L) Cocaethylene (0.25 µg/L; 0.25 µg/L) Cocaine (0.25 µg/L; 0.25 µg/L) Ecgonine methyl ester (EME) (5 µg/L; 5 µg/L) Norcocaine (1 µg/L; 1 µg/L)		A
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BODY FLUIDS and TISSUES - TOXICOLOGY  Blood (Preserved, Unpreserved) Urine (Preserved, Unpreserved)	<u>Forensic Analysis</u> (cont'd)  Confirmation (above specified cut-off limit) of the following drugs (cut-off limit Blood; UrineCont ):  Opioids Group: 6-Acetylcodeine (0.1 µg/L; 0.1 µg/L) Buprenorphine (0.5 µg/L; 0.5 µg/L) 6-Monoacetylmorphine (6-MAM) (0.5 µg/L; 0.5 µg/L) Codeine Dihydrocodeine (0.5 µg/L; 0.5 µg/L) Morphine (0.5 µg/L; 0.25 µg/L) Methadone (0.75 µg/L; 0.75 µg/L) 2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine (EDDP) (0.5 µg/L; 0.5 µg/L) Pethidine (0.25 µg/L; 0.25 µg/L)	Documented in house (TOX0040) using: - Protein Precipitation - SPE LC-MS/MS	A
	Piperazines Group: Benzylpiperazine (BZP) (0.5 µg/L; 0.25 µg/L) Meta-Chlorophenylpiperazine (m-CPP) (5 µg/L; 0.5 µg/L) 3-Trifluoromethylphenyl piperazine (TFMPP) (0.25 µg/L; 0.25 µg/L)		A
	Erectile Dysfunction Group : - Tadalafil (1 µg/L; 1 µg/L) - Vardenafil (0.1 µg/L; 0.1 µg/L) - Sildenafil (0.5 µg/L; 0.5 µg/L)		A
	Beta-Blocker Group : Propranolol (0.25 µg/L; 0.25 µg/L)		A
	Atenolol (3.75 µg/L; 3.75 µg/L) Metoprolol (0.5 µg/L; 0.25 µg/L)		A



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**Issue No: 079 Issue date: 13 September 2019**

**Testing performed by the Organisation at the locations specified**

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY Blood (Preserved, Unpreserved) Urine (Preserved, Unpreserved)Cont'd	Confirmation (above specified cut-off limit) of the following drugs (cut-off limit Blood; Urine):	Documented in house (TOX0040) using: - Protein Precipitation - SPE LC-MS/MS	A
	Analgesic and Anti-inflammatory group : Tramadol (0.25 µg/L; 0.25 µg/L) Fentanyl (0.05 µg/L; 0.05 µg/L) Oxycodone (0.5 µg/L; 1 µg/L) Dextropropoxyphene (0.25 µg/L; 0.25 µg/L) Gabapentin (15 µg/L; 7.5 µg/L) Pregabalin (15 µg/L; 15 µg/L)		A
	Anti-convulsant Group: Carbamazepine (7.5 µg/L; 7.5 µg/L) Lamotrigine (3.75 µg/L; 3.75 µg/L)		A
	Antidepressant group: Dothiepin/Dosulepin (1 µg/L; 1 µg/L) Amitriptyline (1 µg/L; 1 µg/L) Nortriptyline (1 µg/L; 1 µg/L) Citalopram (0.25 µg/L; 0.25 µg/L) Duloxetine (5 µg/L; 5 µg/L) Venlafaxine (0.25 µg/L; 0.25 µg/L) Paroxetine (1 µg/L; 0.5 µg/L) Fluoxetine (1 µg/L; 1 µg/L) Fluvoxamine (1 µg/L; 1 µg/L) Sertraline (1 µg/L; 1 µg/L) Trazodone (3.75 µg/L; 3.75 µg/L) Mirtazapine (0.25 µg/L; 0.25 µg/L)		A
	Anti-Histamine Group: Diphenhydramine (0.25 µg/L; 0.25 µg/L) Chlorphenamine (0.05 µg/L; 0.05 µg/L) Promethazine (0.5 µg/L; 0.1 µg/L) Hydroxyzine (0.25 µg/L; 0.25 µg/L) Cyclizine (0.25 µg/L; 0.25 µg/L)		A





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### Orchid Cellmark Ltd (trading as Cellmark)

Issue No: 079 Issue date: 13 September 2019

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	<u>Forensic Analysis</u> (cont'd)	BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	<u>Forensic Analysis</u> (cont'd)
Blood (Preserved, Unpreserved) Urine (Preserved, Unpreserved)	Confirmation (above specified cut-off limit) of the following drugs (cut-off limit Blood; Urine):  Anti-psychotic Group: Quetiapine (0.25 µg/L; 0.25 µg/L) Risperidone (0.1 µg/L; 0.1 µg/L) Olanzapine (5 µg/L; 0.25 µg/L) Chlorpromazine (5 µg/L; 1 µg/L) Clozapine (0.25 µg/L; 0.25 µg/L) Haloperidol (0.1 µg/L; 0.5 µg/L)  Z Drugs Group: Zolpidem (0.25 µg/L; 0.25 µg/L) Zopiclone (0.25 µg/L; 0.25 µg/L) Zaleplon (0.1 µg/L; 0.1 µg/L)	Documented in house (TOX0040) using: - Protein Precipitation - SPE - LC-MS/MS	A  A
Blood (Preserved, Unpreserved)	Quantitative analysis of the following drugs (concentration range): Amphetamine Group: Amphetamine (3-3000 µg/L) Butylone (1-1000 µg/L) Methylamphetamine (1-1000 µg/L) Methylenedioxyamphetamine - MDA (5-1000 µg/L) Methylenedioxymethamphetamine - MDMA (1-1000 µg/L) Methylenedioxypropylamphetamine - MDPV (1-1000 µg/L) Methylone (1-1000 µg/L) Methylphenidate (0.5-100 µg/L) Naphyrone (1-1000 µg/L) - para-Methoxyamphetamine - PMA (1-1000 µg/L) - para-Methoxymethamphetamine - PMMA (1-1000 µg/L)	Documented in house (TOX0040) using: Protein Precipitation, SPE, LC-MS/MS	A



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2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

**Orchid Cellmark Ltd (trading as Cellmark)**  
**Issue No: 079 Issue date: 13 September 2019**

**Testing performed by the Organisation at the locations specified**

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code	
BODY FLUIDS and TISSUES - TOXICOLOGY Blood (Preserved, Unpreserved)	<u>Forensic Analysis</u> (cont'd)	Documented in house (TOX0040) using: Protein Precipitation, SPE, LC-MS/MS	A	
	Quantitative analysis of the following drugs (concentration range): Analgesic and Anti-inflammatory Group: Dextropropoxyphene (5-1000 µg/L) Fentanyl (0.1-100 µg/L) Gabapentin (150-15000 µg/L) Oxycodone (1-1000 µg/L) Pregabalin (75-15000 µg/L) Tramadol (1-1000 µg/L)			
	Anticonvulsant Group: Carbamazepine (225-15000 µg/L) Lamotrigine (15-15000 µg/L)			
	Antidepressant group: Amitriptyline (5-1000 µg/L) Citalopram (1-1000 µg/L) Dothiepin/Dosulepin (5-1000 µg/L) Duloxetine (5-1000 µg/L) Fluoxetine (5-1000 µg/L) Fluvoxamine (5-1000 µg/L) Mirtazapine (5-1000 µg/L) Nortriptyline (5-1000 µg/L) Paroxetine (5-1000 µg/L) Sertraline (5-1000 µg/L) Trazodone (15-15000 µg/L) Venlafaxine (1-1000 µg/L)			
	Antihistamine Group: Chlorphenamine (0.1-100 µg/L) Cyclizine (5-1000 µg/L) Diphenhydramine (1-1000 µg/L) Hydroxyzine (1-1000 µg/L) Promethazine (0.5-100 µg/L)			
	Antipsychotic Group: Chlorpromazine (10-1000 µg/L) Clozapine (1-1000 µg/L) Haloperidol (0.5-100 µg/L) Olanzapine (5-1000 µg/L) Quetiapine (1-1000 µg/L) - Risperidone (0.5-100 µg/L)			
				A
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				A
				A



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**Issue No: 079 Issue date: 13 September 2019**

**Testing performed by the Organisation at the locations specified**

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY Blood (Preserved, Unpreserved)	<u>Forensic Analysis</u> (cont'd)	Documented in house (TOX0040) using: Protein Precipitation, SPE, LC-MS/MS	A
	Quantitative analysis of the following drugs (concentration range):		A
	Benzodiazepine Group: 7-Aminoclonazepam (1-1000 µg/L) 7-Aminoflunitrazepam (1-1000 µg/L) 7-Aminonitrazepam (5-1000 µg/L) Alprazolam (1-1000 µg/L) Clonazepam (5-1000 µg/L) Chlordiazepoxide (15-3000 µg/L) Desmethyldiazepam (5-1000 µg/L) Diazepam (15-3000 µg/L) Flunitrazepam (5-1000 µg/L) Lorazepam (10-1000 µg/L) Midazolam (0.5-100 µg/L) Nitrazepam (5-1000 µg/L) Oxazepam (3-1500 µg/L) Phenazepam (5-1000 µg/L) Temazepam (15-3000 µg/L) Triazolam (0.5-100 µg/L)		A
	Beta-Blocker Group: Atenolol (75-15000 µg/L) Metoprolol (5-1000 µg/L) Propranolol (5-1000 µg/L)		A
	Cathinone Group: Cathinone (5-1000 µg/L) Mephedrone (1-1000 µg/L) Methylethcathinone - 4-MEC (5-1000 µg/L) Norpseudoephedrine - Cathine (5-1000 µg/L)		A
Cocaine Group: Benzoylecgonine (12.5-3000 µg/L) Cocaethylene (5-1000 µg/L) Cocaine (1-1000 µg/L) Ecgonine methyl ester - EME (5-1000 µg/L) Norcocaine (1-1000 µg/L)	A		



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BODY FLUIDS and TISSUES - TOXICOLOGY	<u>Forensic Analysis</u> (cont'd)		
Blood (Preserved, Unpreserved)	Quantitative analysis of the following drugs (concentration range): Erectile Dysfunction Group: Sildenafil (0.5-100 µg/L) Tadalafil (5-1000 µg/L) Vardenafil (0.5-100 µg/L)  Miscellaneous Group: Ketamine (5-1000 µg/L) Lysergic Acid Diethylamide - LSD (0.1-100 µg/L) Norketamine (5-1000 µg/L) Procyclidine (1-1000 µg/L)  Opioid Group: 2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine - EDDP (1-1000 µg/L) 6-Acetylcodeine (0.5-50 µg/L) 6-Monoacetylmorphine (6-MAM) (0.5-50 µg/L) Buprenorphine (1-100 µg/L) Codeine (1-1000 µg/L) Dihydrocodeine (5-1000 µg/L) Methadone (3-1500 µg/L) Morphine (1-1000 µg/L) Pethidine (1-1000 µg/L)  Piperazine Group: 3-Trifluoromethylphenylpiperazine - TFMPP (1-1000 µg/L) Benzylpiperazine - BZP (1-1000 µg/L) meta-Chlorophenylpiperazine - m-CPP (5-1000 µg/L)  Z Drugs Group: Zaleplon (0.5-100 µg/L) Zolpidem (1-1000 µg/L) Zopiclone (1-1000 µg/L)	Documented in house (TOX0040) using: Protein Precipitation, SPE, LC-MS/MS	A  A  A  A  A  A



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<b>BODY FLUIDS and TISSUES - TOXICOLOGY</b>  Blood (Preserved, Unpreserved) Urine (Preserved, Unpreserved)	<u>Forensic Analysis</u> (cont'd)  Confirmation (above specified cut-off limit) of the following drugs (cut-off limit Blood; Urine):  Analgesic and Anti-inflammatory group : Salicylic acid (1.25 mg/L; 1.25 mg/L) Ibuprofen (1.25 mg/L; 1.25 mg/L) Paracetamol (1.25 mg/L; 1.25 mg/L)	Documented in house (TOX0041)– using - Liquid/liquid extraction - GC-MS/MS	A
	Anti-convulsant Group Valproic Acid (5 mg/L; 5 mg/L) Phenytoin (0.25 mg/L; 0.25 mg/L) Primidone (1 mg/L; 0.5mg/L)		A
	Barbiturates Group: Phenobarbital (1 mg/L; 0.25 mg/L) Amobarbital (0.5 mg/L; 0.25 mg/L) Pentobarbital (0.5 mg/L; 0.25 mg/L) Secobarbital (0.5 mg/L; 0.25 mg/L)		A
	Anti-narcoleptic/Drugs of Abuse : GHB (gamma-hydroxybutyrate) (4.1mg/L;4.1mg/L)		A
	Miscellaneous: BHB (Beta-hydroxybutyrate) (5 mg/L; 5 mg/L)		A
	Quantitative analysis of the following drugs (concentration range; *urine range if different to blood):  Analgesic and Anti-inflammatory Group: Ibuprofen (5-300 mg/L) Paracetamol (5-300 mg/L) Salicylic acid (5-300 mg/L)		A
Blood (Preserved, Unpreserved) Urine (Preserved, Unpreserved)	Quantitative analysis of the following drugs (concentration range; *urine range if different to blood):  Analgesic and Anti-inflammatory Group: Ibuprofen (5-300 mg/L) Paracetamol (5-300 mg/L) Salicylic acid (5-300 mg/L)	Documented in house (TOX0041)– using - Liquid/liquid extraction GC-MS/MS	A



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<b>BODY FLUIDS and TISSUES - TOXICOLOGY</b>  Blood (Preserved, Unpreserved) Urine (Preserved, Unpreserved)	<u>Forensic Analysis</u> (cont'd)  Quantitative analysis of the following drugs (concentration range; *urine range if different to blood):  Anticonvulsant Group Phenytoin (1-60 mg/L) Primidone (1-60 mg/L) Valproic Acid (10-300 mg/L); (*80-300 mg/L)	Documented in house (TOX0041)– using - Liquid/liquid extraction GC-MS/MS	A
	Barbiturates Group: Amobarbital (1-60 mg/L) Pentobarbital (1-60 mg/L) Phenobarbital (1-60 mg/L) Secobarbital (1-60 mg/L)		A
	Anti-narcoleptic/Drugs of Abuse Group: Gamma-hydroxybutyrate - GHB (4.1-247.8 mg/L) (*8.3-247.8 mg/L)		A
	Miscellaneous Group: Beta-hydroxybutyrate - BHB (10-300 mg/L) (*5-300 mg/L)		A
<b>DAMAGE</b>  Damage (Clothing and Fabric material)	<u>Forensic Analysis</u>  <u>Related Opinions and Interpretations</u>  Examination, assessment and evaluation of a damage item, comparison of damage with suspected instrument to determine the likelihood the suspected instrument caused the damage.	Documented In-House Methods (FSL0003) using: - visual examination - microscopy - dimensional measurement - Physical fit (FSL0075/FSL0039)	A, B



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FIBRES	<u>Forensic Analysis</u>		
	Recovery of fibres for contingency purposes from clothing and objects	Documented in house method (FSL0010/FSL0055) using <ul style="list-style-type: none"> <li>- visual examination</li> <li>- low power microscopy</li> <li>- taping</li> <li>- forceps</li> </ul>	A, B
	Search and recovery of fibres from clothing and objects for analysis (including tapings)	Documented in house method (FSL0010/FSL0055) using <ul style="list-style-type: none"> <li>- visual examination,</li> <li>- low power microscopy and screening</li> <li>- fibre recovery (taping)</li> <li>- mounting</li> </ul>	B
	Identification of fibre type	Documented in house method (FRP0085/ FSL0087/FSL0089) using <ul style="list-style-type: none"> <li>- polarised light microscopy</li> <li>- FTIR</li> <li>- MSP</li> </ul>	B
	Spectroscopic analysis of fibres in the visible range for the purpose of comparison of fibres	Documented in house method (method ref) using <ul style="list-style-type: none"> <li>- visible Microspectrophotometry</li> </ul>	
	Comparison of fibres	Documented in house method (FRP0085/ FSL0087/FSL0089) using <ul style="list-style-type: none"> <li>- stereo microscopy</li> <li>- polarised light microscopy</li> <li>- comparison microscopy</li> <li>- FTIR</li> <li>- MSP</li> </ul>	B



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FIBRES (cont'd)	<u>Forensic Analysis</u> (cont'd)  <u>Opinion and Interpretation</u>  The evaluation of the significance of any matching features between the suspect and reference/control fibre to determine the likelihood of the suspect fibre coming from a specific source		B
FLAMMABLE LIQUIDS (FIRE ACCELERANTS)	<u>Forensic Analysis</u>		
Debris and materials recovered from fires and suspected fire scenes	Recovery of potential fire accelerants	Documented in-house method using <ul style="list-style-type: none"> <li>- Direct sampling</li> <li>- Headspace sampling</li> </ul>	A, B
Common fire accelerant liquids	Recovery of potential fire accelerants	Documented in-house method (ACCEL0002) using <ul style="list-style-type: none"> <li>- Direct sampling</li> <li>- Headspace sampling</li> </ul>	A, B
	Examination and analysis of the following flammable liquids <ul style="list-style-type: none"> <li>- Petrol</li> <li>- Paraffin</li> <li>- Turpentine substitute</li> <li>- White spirit</li> <li>- Diesel</li> <li>- Alcohols (methanol/ethanol)</li> </ul>	Documented in house method (ACCEL0003) using <ul style="list-style-type: none"> <li>- TENAX</li> <li>- ATD-GCMS</li> </ul>	B





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FLAMMABLE LIQUIDS (FIRE ACCELERANTS) (cont'd)  Material Recovered from and associated with Fire Scenes	<u>Forensic Analysis</u> (cont'd)		
	Analysis and identification of common fire accelerants : - Petrol - Paraffin - Turpentine substitute - White spirit - Diesel - Alcohols (methanol/ethanol) - Lighter Fuels	Documented in house method (ACCEL0003) using - TENAX - ATD-GCMS	B
GLASS	Comparison of common fire accelerants	Documented in house method (ACCEL0004) using - ATD-GCMS	A, B
	<u>Forensic Analysis</u>		
	Search and recovery of glass fragments from clothing and objects	Documented In-House Methods (FSL0029/FSL0033) using visual examination and low power microscopy	A, B
	Preparation of glass fragments for SEM Analysis	Documented In-House Method (FSL0066) involving stub preparation.	A, B
Characterisation of glass fragments	Documented In-House methods (FSL0035/FSL0036/FSL0037) using - refractive index determination by oil immersion (GRIM 3) - low power and interference microscopy - re-annealing by tube furnace	A, B A, B A A, B	



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GLASS	<u>Forensic Analysis</u>  <u>Opinion and Interpretation</u>  The evaluation of the significance of any matching features between the suspect and reference/control glass to determine the likelihood of the suspect glass coming from a specific source.	Documented in house method - Database	A, B
GUN SHOT RESIDUE (GSR / FDR)	<u>Forensic Analysis</u>  Recovery of in-organic gun shot residues (primer)	Documented in house method (FSL0078) using - carbon coated aluminium stubs - Wipes - Swabbing	A, B
Recovered Material	Identification of in-organic gun shot residues (primer)	Documented in house method (GSR0002/GSR0010) using SEM/EDX	A





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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
MARKS AND IMPRESSIONS  Footwear    Footwear mark (physically or image)    Toolmarks	<u>Forensic Analysis</u>		
	Enhancement of footwear marks recovered from scenes	Documented in house method (FSL0026/FSL0090) using <ul style="list-style-type: none"> <li>- lighting techniques</li> <li>- ESLA</li> <li>- gel lifting</li> <li>- digital capture photography</li> </ul>	A, B
	Production of test marks from suspect footwear	Documented in house method (FSL0025) using <ul style="list-style-type: none"> <li>- casting (dental stone/bio foam)</li> <li>- powders (Bristol black/aluminium/light mineral oil/magnetic powder)</li> <li>- digital capture photography</li> </ul>	A, B
	Assessment, comparison and evaluation of footwear with scene marks	Documented In-House methods (FSL0025) using visual examination, low power microscopy and dimensional measurements	A, B
	<u>Opinion and Interpretation</u> The evaluation of the significance of any matching features between the suspect and reference/control footwear marks to determine the likelihood of the suspect mark coming from a specific footwear	Documented In-House methods using <ul style="list-style-type: none"> <li>- Personal experience</li> <li>- Database – NFRC system for coding of marks</li> </ul>	A, B
Enhancement of toolmarks	Documented in house method (FSL0057) using <ul style="list-style-type: none"> <li>- lighting technique</li> <li>- casting</li> <li>- digital capture/photography</li> </ul>	B	
Production of test marks from suspect items	Documented in house method (FSL0057) using <ul style="list-style-type: none"> <li>- casting</li> <li>- digital capture/photography</li> </ul>	B	



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MARKS AND IMPRESSIONS (cont'd)	<u>Forensic Analysis</u> (cont'd)		
Toolmarks	Comparison of submitted marks or marks made from suspect items with marks left at scene	Documented In-House methods (FSL0057) using visual examination, low power microscopy, comparison microscopy, dimensional measurements and photography	B
	<u>Opinion and Interpretation</u> The evaluation of the significance of any matching features between the suspect and reference/control toolmarks to determine the likelihood of the suspect mark coming from a specific tool	Documented In-House methods (FSL0057) using - Personal experience	B
Marks in blood	Location and enhancement of marks in blood from items recovered from crime scenes	Documented in house method (FSL0026/FSL0070) using - Sulphosalicylic acid - Hydrogen Peroxide - methanol and heat fixing - acid black 1 and leuco crystal violet	B
PAINT	<u>Forensic Analysis</u>		
	Search and recovery of paint and paint fragments from clothing and objects	Documented in house method (FSL0029) using - visual examination - low power microscopy	A, B
	Comparison of recovered and control samples	Documented in house method (FSL0061/FSL0062/FSL0064) using - spot tests - florescence - high power microscopy	A, B



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MARKS AND IMPRESSIONS (cont'd)	<u>Forensic Analysis</u> (cont'd)		
PAIN	<u>Opinion and Interpretation</u>  The evaluation of the significance of any matching features between the suspect and reference/control paint samples to determine the likelihood of the suspect paint fragment coming from a specific source.	Documented in house method	A, B
ALCOHOL TECHNICAL DEFENCE			
Alcohol Technical Defence (in relation to RTA) for sample matrix including Blood/urine/breath	Estimation of alcohol consumption and elimination with respect to validity of drinking patterns: 1) Effect of alleged post accident alcohol consumption on measured breath/body fluids alcohol levels 2) Effect of alleged spiked drink 3) Back calculations of breath/blood/urine alcohol levels to the time of accident or other incident from 20mg% and above	Documented in house methods using mathematical calculations	A
END			