


# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

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

 <p><b>UKAS</b> TESTING <b>0003</b></p> <p>Accredited to <b>ISO/IEC 17025:2017</b></p>	<p><b>LGC Limited</b></p> <p><b>Issue No: 161    Issue date: 26 August 2021</b></p>	
	<p><b>Queens Road</b> <b>Teddington</b> <b>Middlesex</b> <b>TW11 0LY</b></p>	<p><b>Contact: Natasha Heath</b> <b>Tel: +44 (0)20 8943 7374</b> <b>Fax: +44 (0)20 8943 7314</b> <b>E-Mail: Natasha.Heath@lgcgroup.com</b></p>
<p><b>Testing performed at the above address only</b></p>		

### DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
<p><b>BODY FLUIDS and TISSUES</b></p> <p>Blood</p> <ul style="list-style-type: none"> <li>- Whole</li> <li>- FTA cards</li> </ul> <p>Saliva</p> <ul style="list-style-type: none"> <li>- Swabs (buccal cells)</li> <li>- FTA cards</li> </ul> <p>Bone</p> <p>Teeth</p> <p>Extracted Bacterial, Mammalian, Plant/crop, Plasmid and Viral DNA in solution</p>	<p><u>Relationship Analysis</u></p> <p>Short Tandem Repeat (STR) DNA profiling for relationship testing for:</p> <ul style="list-style-type: none"> <li>- Paternity</li> <li>- Sibling</li> <li>- Extended relationship (Aunt/Uncle, Niece/Nephew, Grandparent, Grandchild, Cousin lineage)</li> </ul> <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>Quantification on extracted DNA (8-80000 copies)</p>	<p>Documented In-House Methods using:</p> <p>Manual extraction</p> <ul style="list-style-type: none"> <li>- Whatman (DNA/SOP-023)</li> <li>- Qiagen (DNA/SOP-037)</li> <li>- Qiagen Maxi kit (DNA/SOP-036)</li> </ul> <p>Manual quantification (DNA/SOP-006)</p> <ul style="list-style-type: none"> <li>- Pico Green</li> </ul> <p>Manual amplification (DNA/SOP-024) and the following chemistry:</p> <ul style="list-style-type: none"> <li>- Identifiler</li> <li>- Y23</li> </ul> <p>Electrophoresis (DNA/SOP-025)</p> <ul style="list-style-type: none"> <li>- Applied Biosystems 3130 Genetic Analyser©</li> </ul> <p>Genetic Characterisation</p> <ul style="list-style-type: none"> <li>- GMID 3.2 (DNA/SOP-026)</li> <li>- Stat Calc(DNA/SOP-028)</li> <li>- YHRD (DNA/SOP- 029)</li> </ul> <p>Flexible scope protocol MOLDIGI SOP007 using Bio-rad QX200 droplet digital PCR</p>



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<p>FOODS/FOOD PRODUCTS</p> <p>Food and food products</p> <p>Food and food products</p> <p>Food and foodproducts</p> <p>FOODS/FOOD PRODUCTS /ANIMAL FEED</p> <p>Ground samples of soya, oil seed rape and cereal based food and feed materials</p>	<p><u>Chemical Tests</u></p> <p>Ash</p> <p>Nitrogen</p> <p>Mycotoxins including Aflatoxins B1, B2, G1, G2, M1</p> <p>Analysis and related opinions and interpretation for the purpose of meeting the requirements for referee analysis</p> <p><u>Chemical Tests</u></p> <p>Identification and quantification of GM events</p>	<p>Documented In-House Methods using:</p> <p>Heating and gravimetry (FFF/B1-0005)</p> <p>DUMAS combustion followed by thermal conductivity detection (FCS-021)</p> <p>HPLC with Fluorescence detection (FFF/A1-0315, FCS-029)</p> <p>Methods developed using instrumentation listed below following the Flexible Scope protocol CP/WI-001: Referee Analysis of Food and Agricultural Samples, in association with methods and techniques in line with appropriate legislation.</p> <ul style="list-style-type: none"> <li>- Gravimetric</li> <li>- HPLC-Fluorescence</li> <li>- HPLC-UV</li> <li>- Real-Time PCR</li> <li>- Digital PCR</li> <li>- ICP-OES</li> <li>- ICP-MS</li> <li>- IDMS</li> </ul> <p>GMO testing using methods based on the JRC GMO methods database of reference methods for GMO analysis and verified under flexible scope protocol MOLBIO/SOP-004</p> <p>employing either manual CTAB extraction (MOLBIO/SOP-001), or automated CTAB extraction using Maxwell® RSC system (MOLBIO/SOP-008)</p> <p>followed by Applied Biosystems™ QuantStudio™ 7 Flex Real-Time PCR System, or ABI 7900HT Real-Time PCR</p>



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<p>FOOD/FOOD PRODUCTS /ANIMAL FEED (cont'd)</p> <p>Meat and animal based products (raw and cooked)</p> <p>ORGANIC MATRICES INCLUDING FOOD/FOOD PRODUCTS</p> <p>Food/food products, organic and inorganic matrices, clinical samples.</p> <ul style="list-style-type: none"> <li>- Aqueous solutions</li> <li>- Digests</li> <li>- Extracts</li> <li>- Leachates</li> </ul> <p>Natural and treated waters, aqueous solutions and effluents</p> <p>ENVIRONMENTAL</p> <ul style="list-style-type: none"> <li>- Incinerator ash</li> <li>- Stack filters</li> </ul> <p>COSMETICS</p> <p>Cosmetic substances, formulations and products</p>	<p><u>Chemical Tests</u> (cont'd)</p> <p>Qualitative analysis for:</p> <p>Species identification of meat and animal based food products using real-time PCR to determine the absence/presence of genomic DNA from the following: Beef, Chicken, Goat, Horse, Pork, Sheep, Turkey</p> <p>Sample preparation for metals, nutritional elements and trace elements</p> <p>Metals, nutritional elements, trace elements, acid soluble trace elements</p> <p><u>Including</u> aluminium, boron, barium, calcium, copper, iron, potassium, magnesium, manganese, sodium, phosphorous, strontium, zinc,</p> <p>Water extractable amino acids and proteins</p> <p>Apparent total Nitrosamine content (ATNC)</p> <p>N-Nitrosodiethanolamine (NDELA)</p>	<p>Documented In-House Methods using: Sample preparation (DNA/SOP-001), bead-based DNA extraction (DNA/SOP-002), quantification (DNA/SOP-006) and real-time PCR amplification (DNA/SOP-013, 015 and 016) using manual methods.</p> <p>Microwave digestion (FCS-008)</p> <p>Flexible Scope Protocol FFF B1-2006 using ICP-OES</p> <p>Extraction, hydrolysis and HPLC (FFF/B1-7010)</p> <p>Thermal Energy Analyser (FCS-017)</p> <p>HPLC (OTH/C1-0040)</p>



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<p>ORGANIC/INORGANIC MATRICES INCLUDING FOODS/FOOD PRODUCTS</p> <p>Food/food products, organic and inorganic matrices, clinical samples.</p> <ul style="list-style-type: none"> <li>- Aqueous solutions</li> <li>- Digests</li> <li>- Extracts</li> <li>- Leachates</li> </ul> <p>Natural and treated waters, aqueous solutions and effluents</p> <p>Distiller's Washes</p> <p>Alcoholic Beverages (Wines, Beers and Spirits)</p> <p>REFERENCE MATERIALS</p>	<p><u>Chemical Tests</u> (cont'd)</p> <p>Sample preparation for metals, nutritional elements and trace elements</p> <p>Metals, nutritional elements, trace elements, acid soluble trace elements</p> <p><u>Including</u> aluminium, arsenic, boron, barium, cadmium, cobalt, chromium, copper, iron, mercury, manganese, nickel, lead, sulfur, antimony, selenium, tin, strontium, vanadium, zinc, silver, iodine, molybdenum, uranium</p> <p>Original gravity</p> <p>Alcoholic strength</p> <p>Sample preparation for metals, nutritional elements and trace elements</p> <p>Inorganic Analytes</p> <p>Inorganic Analytes</p> <p>Organic Analytes</p> <p><sup>12</sup>C, <sup>13</sup>C isotopic ratio</p>	<p>Documented In-House Methods:</p> <p>Microwave digestion (INS/A1-0014)</p> <p>Documented in-house methods by Flexible Scope Protocol INS A1-0015 using ICP-MS (INS/A1-0013), or SF-ICP-MS (INS/A1-0008)</p> <p>Method based on Spirit Regulations 1991 (SI 1991 No. 2564) (FFF/B1-1002, FFF/B1-1003, FFF/B1-1009)</p> <p>Distillation and density (FFF/B1-1001, FFF/B1-1011)</p> <p>Microwave digestion (INS/A1-0014)</p> <p>Flexible Scope Protocols FFF/B1-1031 using Inorganic High Accuracy IDMS</p> <p>Flexible Scope Protocol INS/A1-0018 using Exact Single Matched (ESM) Standard by ICP-MS (INS/A1-0013), SF-ICP-MS (INS/A1-0008) or ICP-OES (INS/A1-0019)</p> <p>Flexible Scope Protocol INS B1-0413 using Organic High Accuracy IDMS</p> <p>Multi Collector-ICP-MS (INS/A1-0016)</p>



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<p><b>PHARMACEUTICALS</b></p> <p>Oral solid preparations (tablets and capsules)</p> <p>Medicinal and pharmaceutical substances used in the preparation of pharmaceutical products.</p> <p>Formulated preparations: Oral solid preparation (tablets and capsules) Oral liquid preparations Parenteral preparations Topical liquid preparations Topical solid preparations Herbal preparations</p> <p>Medicinal and pharmaceutical substances used in the preparation of pharmaceutical products.</p> <p>Formulated preparations: Oral solid preparation (tablets and capsules) Oral liquid preparations Parenteral preparations Topical liquid preparations Topical solid preparations Herbal preparations</p>	<p>Determination of dissolution of tablets and capsules</p> <p>Identification of 'active' and 'non-active' ingredients and related impurities</p> <p>Assay of 'active' and 'non-active' ingredients and related impurities</p>	<p>Specifications and methods detailed in the current British Pharmacopoeia (BP) apparatus 1 and 2 and manufacturer's licenced methods.</p> <ul style="list-style-type: none"> <li>- Assay by UV spectroscopy</li> <li>- LC -UV (BP-MHRA/SOP/021)</li> </ul> <p>Specifications and methods detailed in the current British Pharmacopoeia (BP), manufacturer's licenced methods or in-house methods developed with protocol BP-MHRA/QAD/008</p> <p>Using:</p> <ul style="list-style-type: none"> <li>- IR Spectroscopy</li> <li>- UV spectroscopy</li> <li>- Thin Layer Chromatography</li> <li>- LC (detection by UV photodiode array, fluorescence, Refractive Index, ECD or MS)</li> <li>- GC-MS</li> </ul> <p>Specifications and methods detailed in the current British Pharmacopoeia (BP), manufacturer's licenced methods or in-house methods developed with protocol BP-MHRA/QAD/008</p> <p>Using:</p> <ul style="list-style-type: none"> <li>- UV spectroscopy</li> <li>- Thin Layer Chromatography</li> <li>- LC (detection by UV, fluorescence, refractive index, ECD or MS)</li> <li>- (Headspace) GC (detection by FID or MS)</li> <li>- Potentiometric and colorimetric titration</li> <li>- Karl Fischer titration</li> <li>- Loss On Drying</li> </ul>



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<p>PHARMACEUTICALS (cont'd)</p> <p>Medicinal and pharmaceutical substances used in the preparation of pharmaceutical products</p> <p>Oral solid preparation (tablets and capsules)</p> <p>Formulated preparations: Oral solid preparation (tablets and capsules) Oral liquid preparations Parenteral preparations Topical liquid preparations Topical solid preparations</p> <p>Formulated preparations: Oral liquid preparations Parenteral preparations Topical liquid preparations</p> <p>Cervarix Vaccine</p>	<p>Volatile Organic compounds</p> <p>Verification of authenticity</p> <p>Uniformity of content, weight and dosage</p> <p>pH</p> <p>MPL (3-0-deacyl-4-monophosphoryl lipid A)</p>	<p>Using : Headspace GC-MS and FID (BP-MHRA/SOP/027)</p> <p>Using: Near infra-red (NIR) spectroscopy with visual comparison of spectra and principal component analysis (BP-MHRA/SOP/023)</p> <p>Specifications and methods detailed in the current British Pharmacopoeia (BP), manufacturer's licenced and in-house methods Conformity - BP-MHRA/SOP/020 Weight BP - MHRA/SOP/007 Dosage BP - MHRA/SOP/041</p> <p>Using: - UV spectroscopy - LC-UV - Gravimetry - Volumetry</p> <p>Using: Potentiometry (BP-MHRA/SOP/012)</p> <p>Using: GC-FID (BP-MHRA/SOP/045)</p>



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PHARMACEUTICALS (cont'd)  British Pharmacopoeia Chemical Reference Substances (BPCRS)	Identification, Assay and % Declared Content of 'active' and 'non-active' ingredients and related impurities	Using specifications and methods detailed in the current British Pharmacopoeia (BP), developed with flexible scope protocol BP-MHRA/QAD/008  Using techniques: <ul style="list-style-type: none"><li>- LC (detection by UV, Refractive Index, Fluorescence, ECD or MS)</li><li>- (Headspace) GC (detection by FID or mass spectrometry)</li><li>- Thin Layer Chromatography</li><li>- Karl Fischer</li><li>- UV-VIS,</li><li>- Titrimetry,</li><li>- Loss on drying</li><li>- FTIR</li></ul>
END		