Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

0003

Accredited to ISO/IEC 17025:2017

LGC Limited

Issue No: 168 **Issue date:** 02 January 2025

Queens Road
Teddington
Middlesex
TW11 0LY

Contact: Natasha Heath
Tel: +44 (0)20 8943 7374
E-Mail: Natasha.Heath@lgcgroup.com

Testing performed at the above address only

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
BODY FLUIDS and TISSUES Saliva - Swabs (buccal cells) - FTA cards Bone Teeth	<u>Relationship Analysis</u> Short Tandem Repeat (STR) DNA profiling for relationship testing for: - Paternity - Sibling - Extended relationship (Aunt/Uncle, Niece/Nephew, Grandparent, Grandchild, Cousin lineage)	Documented In-House Methods using: Manual extraction - Qiagen (DNA/SOP-037) - Qiagen Maxi kit (DNA/SOP-036) Manual quantification (DNA/SOP-006) - Pico Green Manual amplification (DNA/SOP-024) and the following chemistry: - Y23 Electrophoresis - Spectrum Compact (DNA/SOP 041)
	<u>Related Opinions and Interpretation</u> Comparison, interpretation and statistical analysis of DNA profiles against compatible DNA Profile information from within submitted cases	Genetic Characterisation - GeneMarker HID (DNA/SOP 042) - YHRD (DNA/SOP- 029)
Extracted Bacterial, Mammalian, Plant/crop, Plasmid and Viral DNA in solution	Quantification on extracted DNA (8-80000 copies)	Flexible scope protocol MOLDIGI SOP007 using Bio-rad QX200 droplet digital PCR

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
FOODS/FOOD PRODUCTS	<u>Chemical Tests</u>	Documented In-House Methods using:
Food and food products	Ash	Heating and gravimetry (FFF/B1-0005)
Food and food products	Nitrogen	DUMAS combustion followed by thermal conductivity detection (FCS-021)
Food and foodproducts	Mycotoxins including Aflatoxins B1, B2, G1, G2, M1	HPLC with Fluorescence detection (FFF/A1-0315, FCS-029)
FOODS/FOOD PRODUCTS /ANIMAL FEED	Analysis and related opinions and interpretation for the purpose of meeting the requirements for referee analysis	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. - Gravimetric - HPLC-Fluorescence - HPLC-UV - Real-Time PCR - Digital PCR - ICP-OES - ICP-MS - IDMS
	<u>Chemical Tests</u>	
Ground samples of soya, oil seed rape and cereal based food and feed materials	Identification and quantification of GM events	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 employing automated CTAB extraction using Maxwell® RSC system (MOLBIO/SOP-008) followed by Applied Biosystems™ QuantStudio™ 7 Flex Real-Time PCR System,

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
ORGANIC MATRICES INCLUDING FOOD/FOOD PRODUCTS	Chemical Tests (cont'd)	
Food/food products, organic and inorganic matrices, clinical samples. - Aqueous solutions - Digests - Extracts - Leachates - Natural and treated waters - Aqueous solutions - Effluents	Metals, nutritional elements, trace elements, acid soluble trace elements Including aluminium, boron, barium, calcium, copper, iron, potassium, magnesium, manganese, sodium, phosphorous, strontium, zinc,	Flexible Scope Protocol FFF B1-2006 using Microwave digestion (FCS-008) as required and ICP-OES (FCS-019)
COSMETICS	Chemical Tests	
Cosmetic substances, formulations and products	Apparent total Nitrosamine content (ATNC)	Thermal Energy Analyser (FCS-017)

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
ORGANIC/INORGANIC MATRICES INCLUDING FOODS/FOOD PRODUCTS	Chemical Tests (cont'd)	Documented In-House Methods:
Food/food products, organic and inorganic matrices, clinical samples. - Aqueous solutions - Digests - Extracts - Leachates - Natural and treated waters - Aqueous solutions - Effluents	Metals, nutritional elements, trace elements, acid soluble trace elements Including aluminium, arsenic, boron, barium, cadmium, cobalt, chromium, copper, iron, mercury, manganese, nickel, lead, sulfur,antimony, selenium, tin, strontium, vanadium, zinc, silver, iodine, molybdenum, uranium	Documented in-house methods by Flexible Scope Protocol INS A1-0015 using Microwave digestion (INS/A1-0014) as required and ICP-MS (INS/A1-0013), or SF-ICP-MS (INS/A1-0008)
Natural waters	Metals, nutritional elements, trace elements, acid soluble trace elements, including: • Aluminium • Antimony • Arsenic • Barium • Beryllium • Boron • Cadmium • Chromium • Cobalt • Copper • Iron • Lead • Lithium • Manganese • Mercury • Molybdenum • Nickel • Selenium • Silver • Strontium • Tin • Vanadium • Zinc	Documented in-house methods by SOP -INORG-007 using ICPMS
Alcoholic Beverages (Wines, Beers and Spirits)	Alcoholic strength	Distillation and density (FFF/B1-1001, FFF/B1-1011, FFF/B1-1006)

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
REFERENCE MATERIALS	Chemical Tests	
	Inorganic Analytes	Flexible Scope Protocols FFF/B1-1031 using Microwave digestion (INORG-0004) as required and Inorganic High Accuracy IDMS by ICP-MS (INS/A1-0013), SF-ICP-MS (INS/A1-0008) or ICP-TOF-MS (SOP-INORG-0001)
	Inorganic Analytes	Flexible Scope Protocol SOP-INORG-0003using Microwave digestion (SOP-INORG-0004) as required and Exact Single Matched (ESM) Standard by ICP-MS(INS/A1-0013), SF-ICP-MS (INS/A1-0008) ICP-TOF-MS (SOP-INORG-0001) or ICP-OES (INS/A1-0019SOP-INORG-0009)
	Organic Analytes	Flexible Scope Protocol INS B1-0413 using Organic High Accuracy IDMS
Rice materials	Inorganic arsenic as the sum of As(III) and As(V)	Determination of inorganic arsenic in rice materials by anion-exchange HPLC-ICP-MS (SOP-INORG-0002) and Exact Standard Matching (SOP-INORG-0003)
PHARMACEUTICALS	Chemical Tests	
Oral solid preparations (tablets and capsules)	Determination of dissolution of tablets and capsules	Specifications and methods detailed in the current British Pharmacopoeia (BP) apparatus 1 and 2 and manufacturer's licenced methods. - Assay by UV spectroscopy LC -UV (BP-MHRA/SOP/021)

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
PHARMACEUTICALS (cont'd)	Chemical Tests (cont'd)	
Medicinal and pharmaceutical substances used in the preparation of pharmaceutical products. Formulated preparations: Oral solid preparation (tablets and capsules) Oral liquid preparations Parenteral preparations Topical liquid preparations Topical solid preparations Herbal preparations	Identification of 'active' and 'non-active' ingredients and related impurities	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 Using: - IR Spectroscopy - UV spectroscopy - Thin Layer Chromatography - LC (detection by UV photodiode array, fluorescence, Refractive Index, ECD or MS) - GC-MS
Medicinal and pharmaceutical substances used in the preparation of pharmaceutical products. Formulated preparations: Oral solid preparation (tablets and capsules) Oral liquid preparations Parenteral preparations Topical liquid preparations Topical solid preparations Herbal preparations	Assay of 'active' and 'non-active' ingredients and related impurities	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 Using: - UV spectroscopy - Thin Layer Chromatography - LC (detection by UV, fluorescence, refractive index, ECD or MS) - (Headspace) GC (detection by FID or MS) - Potentiometric and colorimetric titration - Karl Fischer titration - Loss On Drying - Oven sample processor and Karl Fischer coulometer to BP-MHRA/SOP/51 - Density using Density Meter for the determination of density of solutions (BP-MHRA/SOP/033)

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
PHARMACEUTICALS (cont'd)	Chemical Tests (cont'd)	
Medicinal and pharmaceutical substances used in the preparation of pharmaceutical products	Volatile Organic compounds	Using : Headspace GC-MS and FID (BP-MHRA/SOP/027)
Oral solid preparation (tablets and capsules)	Verification of authenticity	Using: Near infra-red (NIR) spectroscopy with visual comparison of spectra and principal component analysis (BP-MHRA/SOP/023)
Formulated preparations: Oral solid preparation (tablets and capsules) Oral liquid preparations Parenteral preparations Topical liquid preparations Topical solid preparations	Uniformity of content, weight and dosage	Specifications and methods detailed in the current British Pharmacopoeia (BP), manufacturer's licenced and in-house methods Conformity - BP-MHRA/SOP/020 Using: - UV spectroscopy - LC-UV - Gravimetry - Volumetry
Formulated preparations: Oral liquid preparations Parenteral preparations Topical liquid preparations	pH	Using: Potentiometry (BP-MHRA/SOP/012)

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
PHARMACEUTICALS (cont'd) British Pharmacopeia Chemical Reference Substances (BPCRS)	<u>Chemical Tests</u> (cont'd) 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 protocol BP-MHRA/QAD/008 Using techniques: - LC (detection by UV, Refractive Index, Fluorescence, ECD or MS) - (Headspace) GC (detection by FID or mass spectrometry) - Thin Layer Chromatography - Karl Fischer - UV-VIS, - Titrimetry, - Loss on drying - FTIR
END		