Scheme Description

Pharmaceutical and Dietary Supplements (PHARMASSURE) Proficiency Testing Scheme

lgcstandards.com/AXIO
axiopt@lgcgroup.com

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RECORD OF ISSUE STATUS AND MODIFICATIONS

Issue	Issue Date	Details	Authorised by
21	Oct 2023	Changed units for Cr and Se in sample 21 Updated cfu/vial ranges for samples 4A and 4B	R. Connolly T.Ashcroft
22	July 2024	Changed the sample name and analytes for Sample 15 Added a new sample 22 for NDMA Added a new sample 23 for e-liquid Samples 13,18 & 19 removed Units clarified for sample 20 Removed sample PT-PH-10 Added samples PT-PH-24 Total count, S.aureus and indicators in medicinal herbs, PT-PH-25 Pseudomonas, yeast and mould in medicinal herbs and PH-PH-26 Salmonella testing of medicinal herbs.	S. Xystouris T.Ashcroft
23	Apr 2025	Updated decimal places for 8B from 0 to 1. Unit updated for nicotine in sample 12	R. Connolly W. Gaunt
24	July 2025	1C: Titre changed to “for info only” Updated SDPA for 8A, measurements in 7B Added method for 6M Added new analyte to sample 12 Supplied as updated for sample 12	R. Connolly
25	May 2026	Removed %w/v for sample 16 New UKAS logo added	S. Xystouris A Collins
26	July 2026	New category for dietary supplements and new samples added Moved 12 and 23 to Consumer product scheme Reduced sample size for 22 and changed description and “supplied as” Change format/added qualitative aspect for sample 11 Samples PH-09 and PH-26 split into A & B samples for Salmonella detection Added new samples 27-37 Moved samples 849, 806 from QFCS to Pharmassure as samples 36 and 37. Matrix description for PH-24, PH-25 and PH-26 changed to Dietary Supplements/Medicinal Herbs New sample PH-38 Listeria detection in Dietary Supplements/Medicinal Herbs Sample 24 marked as accredited	S. Xystouris R. Connolly T.Ashcroft

Notes: Where this document has been translated, the English version shall remain the definitive version

SCHEME INFORMATION

Scheme Aims and Organisation

The primary aim of the Pharmaceutical Proficiency Testing Scheme (PHARMASSURE) is to enable laboratories performing the analysis of pharmaceutical products to monitor their performance and compare it with that of their peers. PHARMASSURE also aims to provide information to participants on technical issues and methodologies relating to testing of pharmaceutical products.

The PHARMASSURE scheme year operates from January to December. Further information about this scheme, including test material availability, round despatch dates and reporting deadlines, are available on the current PHARMASSURE application form.

The PHARMASSURE scheme operates an advisory group made up of participants and industry experts. A list of advisory group members is available from LGC Standards on request. The advisory group meets twice a year and is concerned with all aspects of scheme development, operation and participant performance.

Test Materials

Details of test materials available in the PHARMASSURE scheme are given in the 'samples Available' section. The test parameters are continually reviewed to ensure they meet the needs of current laboratory testing and regulatory requirements.

Test material batches are tested for homogeneity for at least one test parameter where deemed appropriate. Details of homogeneity tests performed and results are given in the PHARMASSURE Scheme Reports.

Some aspects of the scheme, such as test material production, homogeneity testing and stability assessment, can from time to time be subcontracted. When subcontracting occurs, it is placed with a competent subcontractor and LGC is responsible for this work. The planning of the scheme, the evaluation of performance and the authorisation of the final report will never be subcontracted

Statistical Analysis

Information on the statistics used in PHARMASSURE can be found in the General Protocol and in the Scheme Report. Methods for determining assigned values and the values for SDPA used for individual samples are given in the 'Samples Available' section.

Methods

Methods are listed PORTAL. Please select the most appropriate method from the list. If none of the methods are appropriate, then please report your method as 'Other' and record a brief description in the Comments Section in PORTAL.

Results and Reports

PHARMASSURE results are returned through our electronic reporting software, PORTAL, full instructions for which are provided by email.

PHARMASSURE reports will be available on the website within 10 working days of round closure. Participants will be emailed a link to the report when it is available.

DESCRIPTION OF ABBREVIATIONS USED

Assigned Value (AV)

The assigned value may be derived in the following ways:

- From the robust mean (median) of participant results (RMean). This is the median of participant results after the removal of test results that are inappropriate for statistical evaluation, e.g. miscalculations, transpositions and other gross errors. Generally, the assigned value will be set using results from all methods, unless the measurement is considered method-dependant, in which case the assigned value will be set by method as illustrated in the report tables.
  For some analytes, where there is a recognised reference method for that type of measurement, this may be used as the assigned value for a particular analyte i.e. it would be applied to results obtained by any method.

Traceability: Assigned values which are derived from the participant results, or a sub-set of the results are not traceable to an international measurement standard. The uncertainty of assigned values derived in this way is estimated from the participant results, according to ISO 13528.

- From a formulation value (Formulation). This denotes the use of an assigned value derived from sample preparation details, where known and exact quantities of analyte have been used to prepare the sample.

Traceability: Assigned values calculated from the formulation of the test sample are traceable, via an unbroken metrological traceability chain, to an international measurement standard. The measurement uncertainty of the assigned value is calculated using the contributions from each calibration in the traceability chain.

- From a qualitative formulation (Qual Form). This applies to qualitative tests where the assigned value is simply based on the presence/absence of the analyte in the test material.

Traceability: Assigned values calculated from the qualitative formulation of the test sample are traceable to a certified reference standard or a microbiological reference strain.

- From expert labs (Expert). The assigned value for the analyte is provided by an 'expert' laboratory.

Traceability: Assigned values provided by an 'expert' laboratory may be traceable to an international measurement standard, according to the laboratory and the method used. The uncertainty of measurement for an assigned value produced in this way will be provided by the laboratory undertaking the analysis. Details of traceability and the associated uncertainty will be provided in the report for the scheme/round.

Range

This indicates the concentration range at which the analyte may be present in the test material.

SDPA

SDPA represents the 'standard deviation for proficiency assessment' which is used to assess participant performance for the measurement of each analyte. This may be a fixed value (as stated), a percentage (%) of the assigned value or based on the robust standard deviation of the participant measurement results, either across all methods or by method depending on whether the measurement made is method dependent (see assigned value).

Units

This indicates the units used for the assessment of data and in which participants should report their results. For some analytes in some schemes participants may have a choice of which units to report their results, however, the units stipulated in this scheme description are the default units to which any results reported using allowable alternative results will be converted to.

DP

This indicates the number of decimal places to which participants should report their measurement results.

SAMPLES AVAILABLE

CHEMISTRY

Sample PT-PH-01 **Basic testing**

Chemical Testing

Sample PT-PH-01A **pH**
Supplied as: 1 x 60mL buffer solution

Analyte	Method	AV	Range	SDPA	Units	DP
pH (20˚C)	Ph. Eur. 2.2.3 USP 791 ChP 0631	RMean	4-10	0.05	-	2

Sample PT-PH-01B **Acid/Base Titration**
Supplied as: 1 x 60mL acid solution

Analyte	Method	AV	Range	SDPA	Units	DP
Acid/base titration	Phenolphthalein endpoint Potentiometric endpoint ChP 0701	Formulation	15-25	0.15	mL	2

Sample PT-PH-01C **Other Basic Titration**
Supplied as: 1 x 60mL or 125mL solution (sample format dependant on test type)

Analyte	Method	AV	Range	SDPA	Units	DP
Titre	Various	This analyte is to be reported for information only				
Sodium bicarbonate	Various	Formulation	All	0.10	%(w/v)	2
Magnesium	Mordant black endpoint Other endpoint	Formulation	All	1% of AV	mg/L	0
Dipotassium hydrogen phosphate	Ph. Eur. 2.2.20 USP 541	RMean	All	2% of AV	%	2
Sodium chloride	Ph. Eur. 2.2.20 USP 541 Mohr Volhard	Formulation	All	1% of AV	g/L	2

Samples for this test will vary by round.

Sample PT-PH-1D **Density**
Supplied as: 1 x 60mL oil sample

Analyte	Method	AV	Range	SDPA	Units	DP
Density	Density meter Pycnometer ChP 0601	RMean	All	0.002	g/cm^3	3

Sample PT-PH-1E **Refractive Index**
Supplied as**:** 1 x 60mL sugar solution

Analyte	Method	AV	Range	SDPA	Units	DP
Refractive Index	Ph. Eur. 2.2.6 USP 831 ChP 0622	Formulation	All	0.0010	-	4

Sample PT-PH-1F **Melting Point**
Supplied as: 1 x 2g sample

Analyte	Method	AV	Range	SDPA	Units	DP
Melting Point	Ph. Eur. 2.2.14 Ph. Eur. 2.2.60 USP 741 ChP 0612	RMean	All	1.0	°C	1

Sample PT-PH-2A **HPLC Analysis**
Supplied as: 1 x sample and reference standard for analysis by HPLC (Sample format will vary from round to round)

Analyte	Method	AV	Range	SDPA	Units	DP
TBC* One round as assay, one round as related substances test	Ph. Eur. 2.2.29 USP 621 ChP 0512	RMean	All	2.5% of AV	TBC*	2

*Information regarding the format of the sample will be provided on the preparation instructions for each round. Samples will be formulated in such a way that the analysis will be applicable to the majority of laboratories performing HPLC analysis.

Sample PT-PH-2B**
Supplied as:

Trace elements
1 x 5g sample for the determination of trace element impurities
1 x 1g of matrix

Analyte	Method	AV	Range	SDPA	Units	DP
Arsenic	ICP-MS ICP-OES AAS ChP 0406 ChP 0411 ChP 0412	RMean	0.1-1.5	Robust SD	µg/g	2
Cadmium		RMean	0.1-0.5	Robust SD	µg/g	2
Lead		RMean	0.1-1.0	Robust SD	µg/g	2
Mercury		RMean	0.1-1.5	Robust SD	µg/g	2
Chromium		RMean	0.1 - 25	Robust SD	µg/g	2
Copper		RMean	0.1 - 130	Robust SD	µg/g	2
Zinc		RMean	0.1 - 1300	Robust SD	µg/g	2

Sample PT-PH-2E***
Supplied as:

Residual solvents
1 x 2g sample for the determination of residual solvents
1 x 1ml spiking solution

Analyte	Method	AV	Range	SDPA	Units	DP
Benzene	*Ph. Eur. 2.4.24* *Ph. Eur. 2.2.28* *USP 467* *ChP 0861* *GC-FID* *GC-MS* *GC-ECD* *GC-PID* *GC-TCD*	RMean	0 - 2	Robust SD	µg/g	2
Carbon tetrachloride		RMean	0 - 4	Robust SD	µg/g	2
Chloroform		RMean	0 - 60	Robust SD	µg/g	1
Hexane		RMean	0 - 290	Robust SD	µg/g	0
Methanol		RMean	0 - 3000	Robust SD	µg/g	0
Toluene		RMean	0 - 890	Robust SD	µg/g	0
Acetone		RMean	0 - 5000	Robust SD	µg/g	0
Ethanol		RMean	0 - 5000	Robust SD	µg/g	0

**Test material currently not included in LGC's UKAS Scope of Accreditation.

Advanced Chemical Testing

Sample PT-PH-6A **Gas Chromatography (GC)**
Supplied as: Sample and reference standard (Format depends upon type of test material)

Technique	Method	AV	Range	SDPA	Units	DP
GC	Ph. Eur. 2.2.28 USP 621 ChP 0521	Formulation or RMean	All	Robust SD	See instruction sheet	

Sample PT-PH-6B **UV**
Supplied as: 1 x sample (Format depends upon type of test material)

Technique	Method	AV	Range	SDPA	Units	DP
UV	Ph. Eur. 2.2.25 ChP 0401	RMean	All	Robust SD	See instruction sheet	

Sample PT-PH-6C **Viscosity**
Supplied as: 1 x 250ml solution sample

Technique	Method	AV	Range	SDPA	Units	DP
Dynamic viscosity (20˚C)	Ph. Eur. 2.2.9 Ph. Eur. 2.2.10 USP 911 USP 912 ChP 0633	RMean	10-300	Robust SD	mPa·s	0
Kinematic viscosity - measured (20˚C)	Ph. Eur. 2.2.9 USP 911 ChP 0633	RMean	10-300	Robust SD	mm2/s	0
Kinematic viscosity - calculated from dynamic viscosity (20˚C)	Ph. Eur. 2.2.9 Ph. Eur. 2.2.10 USP 911 USP 912 ChP 0633	RMean	10-300	Robust SD	mm2/s	0

Sample PT-PH-6D **Loss on Drying (LOD)**
Supplied as: 1 x sample (Format depends upon type of test material)

Technique	Method	AV	Range	SDPA	Units	DP
Loss on drying (LOD)	Ph. Eur. 2.2.32 USP 731 ChP 0831	RMean	All	0.1	%(w/w)	2

Sample PT-PH-6E **FTIR**
Supplied as: Sample and reference standard (Format depends upon type of test material)

Technique	Method	AV	Range	SDPA	Units	DP
IR/FTIR	Ph. Eur. 2.2.24 USP 197 ChP 0402	Qualitative Pharmaceutical Analysis				

Sample PT-PH-6F **Karl Fischer**
Supplied as: 1 x sample (Format depends upon type of test material); one round liquid, one round solid

Technique	Method	AV	Range	SDPA	Units	DP
Moisture by Karl Fischer	Ph. Eur. 2.5.12 USP 921 ChP 0832	RMean	All	Robust SD	%(w/w)	2

Sample PT-PH-6G **TLC**
Supplied as: Sample, reference standard and TLC plates (Format depends upon type of test material)

Technique	Method	AV	Range	SDPA	Units	DP
TLC	Ph. Eur. 2.2.27 USP 621 ChP 0502	Qualitative Pharmaceutical Analysis				

Sample PT-PH-6H **FLAA**
Supplied as: 1 x 60ml solution sample

Technique	Method	AV	Range	SDPA	Units	DP
Flame spectroscopy	Ph. Eur. 2.2.22 Ph. Eur. 2.2.23 Ph. Eur. 2.2.57 USP 232 USP 233 ChP 0406 ChP 0407	Formulation	All	Robust SD	%(w/v)	2

Sample PT-PH-6I **Polarimetry**
Supplied as: 1 x sample (Format depends upon type of test material)

Technique	Method	AV	Range	SDPA	Units	DP
Polarimetry	Ph. Eur. 2.2.7 USP 781 ChP 0621	RMean	All	Robust SD	°	2

Sample PT-PH-6J **Advanced Titration**
Supplied as: 1 x sample (Format depends upon type of test material)

Technique	Method	AV	Range	SDPA	Units	DP
Advanced titration (potentiometric, non-aqueous)	Various	RMean	All	Robust SD	See instruction sheet	

Sample PT-PH-6K* ** **Nuclear Magnetic Resonance (NMR) Spectrometry**
Supplied as: 1 x 1g sample

Technique	Method	AV	Range	SDPA	Units	DP
Qualitative	Ph. Eur. 2.2.33 USP 761 ChP 0441	Qualitative Pharmaceutical Analysis				
Quantitative		RMean	All	Robust SD	%	2

Sample PT-PH-6M* ** **Residue on Ignition**
Supplied as: 1 x sample (Format depends upon type of test material)

Technique	Method	AV	Range	SDPA	Units	DP
Residue on Ignition	USP 281 Ph. Eur. 2.4.14 ChP 0841	RMean	All	Robust SD	See instruction sheet	

Sample PT-PH-7A ** **Dissolution testing**
Supplied as: 1 x sample for dissolution testing and reference standard; one round analysis by HPLC, one round analysis by UV Spectrophotometry

Analyte	Method	AV	Range	SDPA	Units	DP
Dissolution	*Ph. Eur. 2.9.3* *USP 711* *ChP 0931*	RMean	All	Robust SD	%	2

Sample PT-PH-7B ** **Tablet testing**
Supplied as: 1 x sample for tablet testing

Analyte	Method	AV	Range	SDPA	Units	DP
Diameter	Various	RMean	All	0.05	mm	2
Disintegration	Ph. Eur. 2.9.1 USP 701 ChP 0921	Qual Form	All	N/A	N/A	N/A
Friability	Ph. Eur. 2.9.7 USP 1216 ChP 0923	Qual Form	All	N/A	N/A	N/A
Resistance to crushing	Ph. Eur. 2.9.8 USP 1217	RMean	All	0.05	N	2
Thickness	Various	RMean	All	0.05	mm	2
Uniformity of weight	Ph. Eur. 2.9.5 ChP 0101	Qual Form	All	N/A	N/A	N/A

**Test material currently not included in LGC's UKAS Scope of Accreditation.

***Analytes, assigned values, ranges and SDPAs are subject to alterations.

Sample PT-PH-7C** **Uniformity of dosage units**
Supplied as: 1 x 10 dosage units* and reference standard

Analyte	Method	AV	Range	SDPA	Units	DP
Uniformity of dosage units	*Ph. Eur. 2.9.40* *USP 905* *ChP 0941*	RMean	All	Robust SD	%	2

*One of the following: tablets, capsules, powders or suspensions.

Sample PT-PH-8A** **Conductivity in solutions**
Supplied as: 1 x 125mL sample for conductivity in solutions

Analyte	Method	AV	Range	SDPA	Units	DP
Low level conductivity	*Ph. Eur. 2.2.38* *USP 644* *ChP 0681*	RMean	1 - 50	5%	µS/cm	2

Sample PT-PH-8B** **Particulate determination in solutions**
Supplied as: 1 x sample for particulate determination in solutions

Analyte	Method	AV	Range	SDPA	Units	DP
Particulate determination	Ph. Eur. 2.9.19 Ph. Eur. 2.9.20 USP 788 ChP 0903	RMean	All	Robust SD	-	1

Sample PT-PH-11** **Endotoxins in solutions**
Supplied as: 2x 4mL of solution (A & B)

Analyte	Method	AV	Range	SDPA	Units	DP
Endotoxins (Quantitative)	Ph. Eur. 2.6.14 USP 85 ChP 1143	RMean	>0.05 EU/ml	Robust SD	EU/ml	3
Endotoxins (Qualitative)		Formulation	Present: >0.05 Absent: <0.05	-	-	-

**Test material currently not included in LGC's UKAS Scope of Accreditation.

Sample PT-PH-22** **Nitrosamines in pharmaceuticals/dietary supplement**
Supplied as: 1g of powder

Analyte	Method	AV	Range	SDPA	Units	DP
N-nitrosodimethylamine (NDMA)	USP 1469	RMean	0.5-1	Robust SD	mg/kg	3
N-nitrosodiethylamine (NDEA)	USP 1469	RMean	0.5-1	Robust SD	mg/kg	3

Sample PT-PH-35** **Very low Conductivity in solutions**
Supplied as: 1 x 500mL aqueous solution

Analyte	Method	AV	Range	SDPA	Units	DP
Very low conductivity at 25°C	*Ph. Eur. 2.2.38* *USP 644* *ChP 0681*	RMean	1 - 5	Robust SD	µS/cm	2

Dietary Supplements

Sample PT-PH-14** **Elemental contamination in supplements**
Supplied as: 10g of supplement

Analyte	Method	AV	Range	SDPA	Units	DP
Arsenic	ICP-MS ICP-OES AAS ChP 2321	RMean	All	Robust SD	µg/g	3
Cadmium		RMean	All	Robust SD	µg/g	3
Lead		RMean	All	Robust SD	µg/g	3
Mercury		RMean	All	Robust SD	µg/g	3

Sample PT-PH-15** **Adulterants in sexual enhancement supplements**
Supplied as: 2 x 5g of powdered supplement

Analyte	Method	AV	Range	SDPA	Units	DP
Qualitative	Various	Qualitative Pharmaceutical Analysis				
Quantitative		RMean	All	Robust SD	mg/g	2

Sample PT-PH-16** **Cannabidiol in supplements**
Supplied as: 10ml of oil or 5g of powdered material

Analyte	Method	AV	Range	SDPA	Units	DP
Cannabidiol	Various	RMean	All	Robust SD	% w/w	2

**Test material currently not included in LGC's UKAS Scope of Accreditation.

Sample PT-PH-19** **Phytochemical Identity Confirmation**
Supplied as: 1g of plant material or plant extract (exact details to be confirmed)

Analyte	Method	AV	Range	SDPA	Units	DP
Phytochemical identity confirmation	All	Qualitative	All	N/A	N/A	N/A

Sample PT-PH-20** **Potency of multivitamin supplements**
Supplied as: 30g of multivitamin supplement (information on the material will be provided in the Instruction Sheet)

Analyte	Method	AV	Range	SDPA	Units	DP
Vitamin B1 *(Thiamine)*	LC-MS LC MS/MS HPLC LC-ICP/MS	RMean	All	Robust SD	mg/g as thiamine mononitrate	2
Vitamin B2 *(Riboflavin)*		RMean	All	Robust SD	mg/g	2
Vitamin B3 *(Niacin)*		RMean	All	Robust SD	mg/g as niacin equivalents	2
Vitamin B5 *(Pantothenic acid)*		RMean	All	Robust SD	mg/g as pantothenic acid	2
Vitamin B6		RMean	All	Robust SD	mg/g as pyridoxine HCl	2
Folic acid		RMean	All	Robust SD	mg/g	2
Biotin		RMean	All	Robust SD	mg/g	2
Vitamin B12		RMean	All	Robust SD	mg/g as cyanocobalamin	2
Vitamin C	HPLC Titration	RMean	All	Robust SD	mg/g as ascorbic acid	2

The presence of the analytes is material dependent

Sample PT-PH-21** **Potency of multielement supplements**
Supplied as: 15g of multielement supplement

Analyte	Method	AV	Range	SDPA	Units	DP
Calcium	ICP/MS ICP-OES AAS XRF	RMean	All	Robust SD	mg/g	2
Zinc		RMean	All	Robust SD	mg/g	2
Magnesium		RMean	All	Robust SD	mg/g	2
Copper		RMean	All	Robust SD	mg/g	2
Manganese		RMean	All	Robust SD	mg/g	2
Potassium		RMean	All	Robust SD	mg/g	2
Iron		RMean	All	Robust SD	mg/g	2
Chromium (total)		RMean	All	Robust SD	ug/g	2
Selenium		RMean	All	Robust SD	ug/g	2
Compliance with labelling		Qualitative Analysis				

The presence of the analytes is material dependent.

**Test material currently not included in LGC's UKAS Scope of Accreditation.

Sample PT-PH-27** **Adulterants e.g. sibutramine in weight management supplement**
Supplied as: 2 x 5g of powdered supplement

Analyte	Method	AV	Range	SDPA	Units	DP
Qualitative	Various	Qualitative Analysis				
Quantitative		RMean	All	Robust SD	mg/g	2

Sample PT-PH-28** **Creatine in creatine supplement**
Supplied as: 50g of supplement powder

Analyte	Method	AV	Range	SDPA	Units	DP
Creatine	LC-DAD, Other	RMean	All	Robust SD	mg/g as creatine monohydrate	2

Sample PT-PH-29** **Potency of Vitamin C supplement**
Supplied as: 20g of supplement powder

Analyte	Method	AV	Range	SDPA	Units	DP
Vitamin C	HPLC UHPLC-UV LC-MS Enzymatic methods Titration	RMean	All	Robust SD	mg/g as ascorbic acid	2

Sample PT-PH-30** **Potency of Berberine supplement**
Supplied as: 20g of supplement powder

Analyte	Method	AV	Range	SDPA	Units	DP
Berberine	HPLC-UV/DAD, LC-MS/MS, HPTLC, Other	RMean	All	Robust SD	mg/g berberine hydrochloride (HCl)	2

**Test material currently not included in LGC's UKAS Scope of Accreditation.

Sample PT-PH-31** **Potency of CoQ10 supplement**
Supplied as: 20g of supplement powder

Analyte	Method	AV	Range	SDPA	Units	DP
Coenzyme Q10	HPLC-UV/DAD, LC-MS/MS, Other	RMean	All	Robust SD	mg/g as CoQ10	2

Sample PT-PH-32** **Potency of Astaxanthin supplement**
Supplied as: 20g of supplement powder

Analyte	Method	AV	Range	SDPA	Units	DP
Astaxanthin	HPLC-UV/DAD, UHPLC, LC-MS/MS, Other	RMean	All	Robust SD	mg/g as astaxanthin	2

Sample PT-PH-33** **Elements in pre-natal supplements (California State Proposition 65)**
Supplied as: 10g of supplement powder

Analyte	Method	AV	Range	SDPA	Units	DP
Total Arsenic	ICP-MS ICP-OES AAS ChP 2321	5-20	All	Robust SD	µg/kg	2
Cadmium		5-20	All	Robust SD	µg/kg	2
Lead		5-20	All	Robust SD	µg/kg	2
Mercury		5-20	All	Robust SD	µg/kg	2

**Test material currently not included in LGC's UKAS Scope of Accreditation.

Sample PT-PH-34**
Supplied as:

Amino acid profile in sports supplement
50g of sport supplement powder

Analyte	Method	AV	Range	SDPA	Units	DP
Alanine (free)	HPLC (post-column) HPLC (pre-column) IEC LC-MS/MS Other	Median	All	Robust SD	g/100g	3
Arginine (free)		Median	All	Robust SD	g/100g	3
Aspartic acid (free)		Median	All	Robust SD	g/100g	3
Glutamic acid (free)		Median	All	Robust SD	g/100g	2
Glycine (free)		Median	All	Robust SD	g/100g	2
Histidine (free)		Median	All	Robust SD	g/100g	3
Isoleucine (free)		Median	All	Robust SD	g/100g	2
Leucine (free)		Median	All	Robust SD	g/100g	2
Lysine (free)		Median	All	Robust SD	g/100g	2
Phenylalanine (free)		Median	All	Robust SD	g/100g	3
Proline (free)		Median	All	Robust SD	g/100g	2
Serine (free)	HPLC (post-column) HPLC (pre-column) IEC LC-MS/MS Other	Median	All	Robust SD	g/100g	3
Threonine (free)		Median	All	Robust SD	g/100g	3
Tyrosine (free)		Median	All	Robust SD	g/100g	3
Valine (free)		Median	All	Robust SD	g/100g	3
Methionine (free)		Median	All	Robust SD	g/100g	3
Tryptophan (total)		Median	All	Robust SD	g/100g	3
N-acetyl-L-methionine		Median	All	Robust SD	g/100g	3
Ornithine (free)	HPLC (post-column) HPLC (pre-column) IEC LC-MS/MS Other	Median	All	Robust SD	g/100g	2
Citrulline (free)		Median	All	Robust SD	g/100g	2
β-alanine		Median	All	Robust SD	g/100g	2
Glutathione		Median	All	Robust SD	g/100g	2
Hydroxyproline (total)		Median	All	Robust SD	g/100g	2
Norvaline (free)		Median	All	Robust SD	g/100g	2
Theanine (free)		Median	All	Robust SD	g/100g	2
Taurine (free)		Median	All	Robust SD	g/100g	2

**Test material currently not included in LGC's UKAS Scope of Accreditation.

Sample PT-PH-36** **Cannabidiol (CBD) in gummies**
Supplied as: 3 x gummies

Analyte	Method	AV	Range	SDPA	Units	DP
Cannabidiol	UHPLC, GC/FID, GC MS	Median	All	Robust SD	mg/g	2

Sample PT-PH-37** **Essential composition and fatty acids breakdown of fish oil supplement**
Supplied as: 100ml cod liver oil

Analyte	Method	AV	Range	SDPA	Units	DP
cis Alpha-linolenic acid (ALA)	GC	Median	All	Robust SD	g/100g	3
cis Eicosapentaenoic acid (EPA)	GC	Median	All	Robust SD	g/100g	2
Total Docosapentaenoic (DPA)	GC	Median	All	Robust SD	g/100g	2
cis Docosahexaenoic (DHA)	GC	Median	All	Robust SD	g/100g	2
Monounsaturated fatty acids	GC	Median	All	Robust SD	g/100g	2
Polyunsaturated fatty acids	GC	Median	All	Robust SD	g/100g	2
Saturated fatty acids	GC	Median	All	Robust SD	g/100g	2
Total EPA+DHA Omega-3 fatty acids	GC	Median	All	Robust SD	g/100g	2
Total Omega-3 fatty acids	GC	Median	All	Robust SD	g/100g	2
Total Omega-6 fatty acids	GC	Median	All	Robust SD	g/100g	2
Total Omega-9 fatty acids	GC	Median	All	Robust SD	g/100g	2
Omega-3 : Omega-6 ratio	Calculation	Median	All	Robust SD	-	2
Total trans fatty acids	GC	Median	All	Robust SD	g/100g	3
Vitamin A	GC	Median	All	Robust SD	mg/mL as retinol	2
Vitamin D	GC	Median	All	Robust SD	µg/mL as sum of D_2 & D_3	2

Further details for Advanced Chemical Testing, for example analytes and reporting format, will be published on the preparation instructions supplied with the samples.

**Test material currently not included in LGC's UKAS Scope of Accreditation.

MICROBIOLOGY

Sample PT-PH-03 — Low-level Enumeration and Identification (intended for membrane filtration)

Supplied as: 1 x 10ml glass sealed vial containing a single culture of lyophilised microorganism. Final sample volume 1mL (for identification only) or 100mL (identification & enumeration).

Analyte	Method	AV	Range cfu/vial	SDPA	Reporting Units	DP
Low-level enumeration	All	RMean	<500	$\log_{10}$ 0.35	cfu/100ml	0
Identification of microorganism	All	Qual Form	<500	NA	NA	NA

Sample PT-PH-4A — Enumeration of TAMC and indicator organisms

Supplied as: 1 x 10ml glass sealed vial containing a mixed culture of lyophilised microorganism(s). Final sample volume 100mL (neat).

Analyte	Method	AV	Range cfu/vial	SDPA	Reporting Units	DP
Total aerobic microbial count	All	RMean	<500,000	$\log_{10}$ 0.35	cfu/ml	0
Total bacterial count	All	RMean	<500,000	$\log_{10}$ 0.35	cfu/ml	0
Detection of *Staphylococcus aureus*	All	Qual Form	<100,000	NA	Detected/Not Detected 100ml	NA
Enumeration of *Staphylococcus aureus*	All	RMean	<100,000	$\log_{10}$ 0.35	cfu/ml	0
Detection of *Escherichia coli*	All	Qual Form	<100,000	NA	Detected/Not Detected 100ml	NA
Enumeration of *Escherichia coli*	All	RMean	<100,000	$\log_{10}$ 0.35	cfu/ml	0
Detection of bile-tolerant gram-negative bacteria	All	Qual Form	<100,000	NA	Detected/Not Detected 100ml	NA
Enumeration of bile-tolerant gram-negative bacteria	All	RMean	<100,000	$\log_{10}$ 0.35	cfu/ml	0

Sample PT-PH-4B — Enumeration of yeast, mould and *Pseudomonas*

Supplied as: 1 x 10ml glass sealed vial containing a mixed culture of lyophilised microorganism(s). Final sample volume 100mL (neat).

Analyte	Method	AV	Range cfu/vial	SDPA	Reporting Units	DP
Detection of *Pseudomonas aeruginosa*	All	Qual Form	<100,000	NA	Detected/Not Detected 100ml	NA

Analyte	Method	AV	Range cfu/vial	SDPA	Reporting Units	DP
Detection of *Burkholderia cepacia*	All	Qual Form	<100,000	NA	Detected/Not Detected 100ml	NA
Detection of *Candida albicans*	All	Qual Form	<100,000	NA	Detected/Not Detected 100ml	NA
Enumeration of *Candida albicans*	All	RMean	<100,000	$\log_{10}$ 0.35	cfu/ml	0
Enumeration of yeast	All	RMean	<100,000	$\log_{10}$ 0.35	cfu/ml	0
Enumeration of mould	All	RMean	<100,000	$\log_{10}$ 0.35	cfu/ml	0
Total yeast and mould	All	RMean	<100,000	$\log_{10}$ 0.35	cfu/ml	0

Sample PT-PH-05 **Sterility and identification**
Supplied as: 5 x 5ml glass sealed vials which may or may not contain microorganisms at low levels (final sample volume up to 100mL)

Analyte	Method	AV	Range cfu/vial	SDPA	Reporting Units	DP
Sterility	All	Qual Form	<100	NA	Sterility Pass/Sterility Fail	NA
Identification of microorganism	All	Qual Form	<100	NA	NA	NA

Sample PT-PH-09 (A & B) ***Salmonella* presence/absence**
Supplied as: 2 x 10ml glass sealed vial which may or may not contain the target organism. Final sample volume 10ml (neat).

Analyte	Method	AV	Range cfu/vial	SDPA	Reporting Units	DP
Detection of *Salmonella* spp	All	Qual Form	<100	NA	Detected/Not Detected 10ml	NA

Sample PT-PH-24 **Total aerobic count, S.aureus and indicators in Dietary Supplements/ Medicinal Herbs**
Supplied as: 1 x 10ml glass sealed vial & 10g medicinal herb matrix

Analyte	Method	AV	Range cfu/g	SDPA	Reporting Units	DP
Total aerobic microbial count	All	RMean	<5,000	$\log_{10}$ 0.35	cfu/g	0
Detection of *Staphylococcus aureus*	All	Qual Form	<1,000	NA	Detected/Not Detected 10g	NA
Enumeration of *Staphylococcus aureus*	All	RMean	<1,000	$\log_{10}$ 0.35	cfu/g	0

Analyte	Method	AV	Range cfu/g	SDPA	Reporting Units	DP
Detection of Bile tolerant gram-negative organisms	All	Qual Form	<1,000	NA	Detected/Not Detected 10g	NA
Enumeration of Bile tolerant gram-negative organisms	All	RMean	<1,000	$\log_{10}$ 0.35	cfu/g	0
Detection of *Escherichia coli*	All	Qual Form	<1,000	NA	Detected/Not Detected 10g	NA
Enumeration of *Escherichia coli*	All	RMean	<1,000	$\log_{10}$ 0.35	cfu/g	0

Sample PT-PH-25** **Yeast, Mould and Pseudomonas in Dietary Supplements/Medicinal Herbs**

Supplied as: 1 x 10ml glass sealed vial & 10g medicinal herb matrix

Analyte	Method	AV	Range cfu/g	SDPA	Reporting Units	DP
Detection of *Pseudomonas aeruginosa*	All	Qual Form	<1,000	NA	Detected/Not Detected 10g	NA
Enumeration of *Pseudomonas aeruginosa*	All	RMean	<1,000	$\log_{10}$ 0.35	cfu/g	0
Detection of *Candida albicans*	All	Qual Form	<1,000	NA	Detected/Not Detected 10g	NA
Enumeration of *Candida albicans*	All	RMean	<1,000	$\log_{10}$ 0.35	cfu/g	0
Detection of yeast	All	Qual Form	<1,000	NA	Detected/Not Detected 10g	NA
Enumeration of yeast	All	RMean	<1,000	$\log_{10}$ 0.35	cfu/g	0
Detection of mould	All	Qual Form	<1,000	NA	Detected/Not Detected 10g	NA
Enumeration of mould	All	RMean	<1,000	$\log_{10}$ 0.35	cfu/g	0
Detection of yeast and mould	All	Qual Form	<1,000	NA	Detected/Not Detected 10g	NA
Enumeration of yeast and mould	All	RMean	<1,000	$\log_{10}$ 0.35	cfu/g	0

**Test material currently not included in LGC's UKAS Scope of Accreditation.

Sample PT-PH-26 (A&B) Salmonella in Dietary Supplements/Medicinal Herbs**
Supplied as: 2 x 10ml glass sealed vial & minimum 50g medicinal herb matrix

Analyte	Method	AV	Range cfu/g	SDPA	Reporting Units	DP
Detection of Salmonella species	All	Qual Form	<1,000	NA	Detected/Not Detected 25g	NA

Sample PT-PH-38 Listeria in Dietary Supplements/Medicinal Herbs**
Supplied as: 1 x 10ml glass sealed vial & minimum 25g medicinal herb matrix

Analyte	Method	AV	Range cfu/g	SDPA	Reporting Units	DP
Detection of Listeria species	All	Qual Form	<1,000	NA	Detected/Not Detected 25g	NA
Detection of *Listeria monocytogenes*	All	Qual Form	<1,000	NA	Detected/Not Detected 25g	NA

**Test material currently not included in LGC's UKAS Scope of Accreditation.