

	Index Code	BSF2REC17003
	Version No	1.8.05
	Last Updated	8/1/22
	Version	Upload date
	1.4.10	Oct-20
	1.4.11	Nov-20
	1.4.12	Dec-20
	1.5.01	Jan-21
	1.5.02	Feb-21
	1.5.03	Mar-21
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	1.8.02	Feb-23
	1.8.03	Mar-23
	1.8.04	Apr-23

See first tab for main database of information about referred tests

Brief details of updates

Correction of address for CSF ACE.
Addition of information for clozapine.
Corrected reference range for fT4 at Hull
Added details for ethyl glucuronide test.

Added reference ranges for trimethylamine studies
Added tab with handling and P&P charges
Added column with information about how results are returned (post, email, NPEX)
added hyperlink to TAT audit for 2019 data
contact details for viapath updated.

Added courier charge for UK overnight parcels.
Updated links for 2018 and 2019 reviews.
Updated locations for paraquat analysis.
NPEX column added.
Added link for 2020 accreditation audit.

Added supersets for vitamin B2 and vitamin B6 and vitamin C
updated newcastle duty biochemist email address.
Added supersets for TRAb

Updated contact details for Viapath
Added details for leptin requests
Added details for MMA to go to Viapath (B12 deficiency indications)

Updated vetting requirements for urine C-peptide.
Updated sample requirements for IGF-BP3.

Addition of details for cannabinoids screen (Divya Patel)

Added LC-MS cortisol / dexamethsone information (Wythenshawe, Manchester) - SG, 4/5/21
Removal of Richard Harvey's contact email (left Imperial)
Added info for new urine bile acids test at Sheffield (in the process of changing from UCL)
Levetiracetam autocomment re briveracetam.
Added vetting instructions for insulin requests
Addition of purines email address
Addition of coded comments for gut hormones
change to PTHrp reference range to < 1.40 pmol/L.
Added information to gabapentin entry

Update of reference range, units, location, autocomment for gabapentin.
Entry for VEGF added (not set up as an official referred test since very rarely requested).
Added DB email address for Birmingham Children's Blood Sciences dept.
Combined tabs for service reviews
updated code for urine arsenic speciation
Changed location and updated set (BACU2R) for urine bile acids

Added column for 'how to report' i.e. telepath, upload to PPM, email to xxx@nhs.net
Added telepath codes for copeptin.
Added coded comments for vitamin K report comments.

updated autocomment for plasma mets (supine RR)
updated address for neurometabolic lab (now at Institute of Neurology)
updated address for Biomnis
Updated contact email addresses for Rotherham (vitamin C MPS tubes)
removed Paula Marchetti's email address for contact for vit B1 (left Rotherham)

Update to storage time of CSF neurotransmitters.
Noted delay for chromogranin A.
Updated contact number for Edinburgh Duty Biochemist
Updated cost for urine AASA

Added /updated prices for several tests
DHAP-AT - no longer offered.
Added contact details for Guildford's business manager
Updated autocomments for referred tests which are not UKAS-accredited.
Changed storage / sending requirements for ALPIE to fridge / ambient (does not require dry ice)
Updated address for HSL (UCLH)
Added entry for urine haemosiderin - new referred test to York.
Added column for UKAS accreditation

Removed autocomment from levetiracetam set re briveracetam interference (no longer on Cardiff's reports)

Added tab with list of immunology referred tests
Serum AFP should only be sent with paired CSF.
Urine haemosiderin - correction of transport conditions.
Updated sample requirements for blood porphyrins (two samples should be received).
Sample stability added for urine AASA.
Updated sample requirements & processing for PTHrp.
Updated information for gut hormones - don't send over bank holidays or Christmas period.
Clarification for how to report cholinesterase results.

Updated prices for 1,25 vit D, AMH, vit B2, vit B6.
Added reference range for DHPR and D-lactate
Added tab with information for blood bank referrals as requested by Mark Dunn.

Added separate column for minimum volume required at the request of Shaq Younas (AQUA audit finding)
Updated sample requirements for CTX and P1NP.

No significant updates

Addition of details for 17-alpha hydroxyprogesterone (in saliva)
Addition of details for Oestradiol (sensitive)

Addition of stability for TMPT
Updated method for plasma oxalate.
Added info for cystatin c.
Update for plasma metanephries comments which are now added automatically.
IGF-BP-3 stable for up to 6h
Updated fT3 telepath superset information.
Updated stability information for Lp(a) from Newcastle's website.
JFT3R superset updated
Urine psychoactive drug screen deactivated
Updated details for reporting EMA binding and urine haemosiderin results
Updated sample requirements for insulin & C-peptide
UPDS1R (urine psychoactive screen) deactivated in telepath.
Price increase for plasma metanephries.

Added entry for pyruvate kinase.

<p>Updated prices for Sheffield Children's Hospital tests Added hyperlink for aHUS sample processing forms. Vitamin K update to pre-analytical requirements (EF) Entry for TPMT genotype added. Added email address for Viapath haemostasis lab (vit K) Added DB email and phone number for Norfolk & Norwich lab (Eastern Pathology Alliance) Included link for stability data for TSH receptor antibodies. Added new superset codes for 1,25 vitamin D.</p>
<p>CTX - not suitable for analysis in haemolysed samples. Methanol - not available at weekends at Birmingham for the time being. Entry for mitochondrial studies - genetics sendaways. Monthly upload</p>
<p>Monthly Upload</p>
<p>Units and reference ranges for methanol updated. Email address for mycophenolate added Updates for PUFAs for three yearly audit. Updates for urine polyols for three yearly audit Added entry for Palmitoyl phosphocholineserine (PPCS, lysosphingomyelin-509) Lipase - vetting instructions updated. Lipase & FT3 - contact details updated. ALPIE - added information for vetting requests. 25(OH) vitamin D (Pinderfields) added. Updated information for DHPR / biopterins Updates for galactose-1-phosphate Updates for ethylene glycol. Updates for methanol. Updates for GHB. Updates for olanzapine. Updates for urine toxicology screen Updates for 1,25 di-hydroxy vitamin D</p>
<p>Updates for CK isoenzymes Plasma metanephrines reference ranges updated with <1 y, and interpretive comments.</p>
<p>combined 'how to report results' and 'mechanism of return of results' columns. Amended name of topiramate entry which had inadvertently been changed to a duplicate of urine cannabinoids Updates for D-lactate Updates for common alpha subunit</p>
<p>Monthly updates. Previous version numbers in incorrect order. Various updates - see 3 yearly audit checklist.</p>
<p>Monthly upload. Updated prices for Viapath tests. Updated prices for Wythenshawe tests. Updated location for urine bile acid analysis (moved back to UCL from Sheffield Childrens)</p>
<p>Various updates for 3 yearly audit (see checklist) Plasma oxalates confirmed as available again. Removed Nick Unsworth (retired) as contact for Charing Cross lab.</p>
<p>Cholestanol added. Various updates for 3 yearly audit (see checklist)</p>
<p>Various updates for 3 yearly audit (see checklist) Column R (price) changed to number only (price in GBP). Extra column added for notes on price (e.g. date confirmed) References to Viapath changed to Synnovis. Addition of amylase isoenzymes at Synnovis. Updates of reviews and audit tab with hyperlinks</p>

Test name	Telepath codes	Sample type & pre-analytical requirements	Minimum volume required	Storage conditions	Postage conditions	Vetting instructions (see also pre-analytical requirements)	Referral lab	Referral lab address	Phone / email / contact name / website	Day(s) of analysis by referral lab	Day of dispatch from Leeds	Reference ranges & units	Reporting of results	Autocomments added	Coded comments available	TAT stated by external lab
1,25(OH)₂ vitamin D (calcitriol)	LGI superses L125D; adds 125D1R & SA1R. SJUH superses J125D; adds 125D1R, JCHM2L and SA1R.	Serum	0.25 mL	frozen	First class post (ambient)	Yes - vetting by DB required. May be requested in error when clinician wants 25(OH) vit D. May be useful in the ix of 7vitamin D-dependent rickets and in patients with hypercalcaemia to investigate possible excess 1,25(OH) ₂ production e.g. granulomatous diseases (sarcoidosis, TB or lymphoma)	Glasgow Royal Infirmary	Department of Clinical Biochemistry, Macqueen building, Glasgow Royal Infirmary, Castle Street, Glasgow, G4 0SF	Lab: 0141 211 40034, option 1 Karen Smith, Consultant Clinical Scientist 211 4424 https://www.nhs.uk/about-us/professional-support/sites/laboratory-medicine/laboratory-disciplines/biochemistry/nhs-ggc-specialist-endocrine-laboratory/sarotd1-25-oh-vitamin-d/	0141	Send upon arrival, Mon - Thur	20-120 pmol/L (interim range pending further investigation)	Reports posted. Enter result in telepath.	This sample was analysed at: Clinical Biochemistry, Glasgow Royal Infirmary		35 days (website) (5 weeks)
11-deoxycortisol (DOC)	DCOR1R & SA1R	serum (for paediatric samples, plain tube with no gel preferable) stable for 5 days at 2 to 8°C stable for 2 months at -18 to -26°C	250 uL	frozen	First class post (ambient)	Yes - vetting by DB required.	Royal London Hospital (part of Bart's Health NHS Trust)	Clinical Biochemistry, 4th floor Pathology & Pharmacy building, 30 Newark St, Whitechapel, London E1 2ES	Dr Sarah Pitkin, Principal Clinical Biochemist sarah.pitkin@bartshealth.nhs.uk Switchboard 0207 377 7000, ext 61038 Heather.adams@nhs.net 0203 246 0441		Send upon arrival, Mon - Thur	7-13 nmol/L for 9 am samples.	Reports posted. Enter result in telepath.			10 days
17-alpha hydroxyprogesterone (in saliva)	Book in as PROB1J (comment NRSOT) & SA1R	Saliva	5mL	fridge (or frozen if > 1 day)	First class post (ambient)	Yes - vetting by S Gibbons required	Cardiff	Department of Medical Biochemistry and Immunology, University Hospital of Wales, Health Park, Cardiff, CF14 4XW	Rachel Hunt (Lead Biomedical Scientist Endocrine & Screening) rachel.hunt@wales.nhs.uk Tel: 029 2184 4157 or Dr Carol Evans (Consultant Clinical Scientist) carol.evans@wales.nhs.uk Tel: 029 2184 8367		Send upon arrival, Mon - Thur	Time 08.00 280-1000pmol/L 12.00 <130pmol/L 16.00 <130pmol/L 22.00	Email sent from Digital Health and Care Wales' Secure file sharing portal Enter result as a comment in the PROB set + AMEND	This sample was analysed at: University Hospital of Wales, Cardiff		5 working days
18-OH cortisol - test no longer available	18C1R. Also adds SA1R. No supersets.						Southampton		Rob.Rowe@hubs.nhs.uk				NA	Reference ranges: supine 0.7-6.5 nmol/L, ambulant 1.6-10.7 nmol/L. This sample was analysed at: Clinical Biochemistry, Southampton University Hospitals Trust		
25(OH) vitamin D Subset of samples for standard vitamin D referred to Pinderfields for analysis	TVTD1R & SA1R	Serum	0.25 mL	ambient / fridge	Trust transport (ambient)	No vetting required. This test is reflexed automatically by telepath for the following samples: Result 25 - 70 nmol/L AND patient <16 years OR under Endo / CF / gastro consultant.	Pinderfields	Blood Sciences Department Pathology Pinderfields Hospital, Aberdeen Road Wakefield WF1 4DG	results available on ICE OpenNet 01924 317033 (biochemistry lab) 01924 843038 (clinical scientists team) myh-tr.pathologyref@nhs.uk holly.rosell@nhs.net (Pathology secretary) chetan.nevada@nhs.net (chief BMS) Peter.Horan4@nhs.net (senior BMS)	available 24/7	Mon - Fri	50 - 220 nmol/L RR reported as 50-100 nmol/L as per Leeds.	Result reported to telepath automatically via NPEx.	(autocomments added via NPEx): -12 months "There are no validated reference ranges for VitaminD for infants up to age 12 months" Total 25OH ViD < 15 nmol/L suggests severe deficiency Total 25OH Vitamin D in the range 15.0 - 29.9 suggests Vitamin D deficiency. Total 25OH ViD in the range 30.0 - 49.9 suggests Vitamin D depletion and may be insufficient to maintain optimal skeletal health. Total 25OH ViD >= 50 nmol/L suggests viD sufficiency. Total Vitamin D levels above 220 nmol/L are considered 'high' and increase the risk of vitamin D toxicity.		24 h
7-dehydrocholesterol	7DCH1R. Also adds SA1R. No supersets	lithium heparin plasma. Protected from light. Should reach the lab and be processed within 30 min of collection.	1 mL	frozen	First class post (ambient)	yes - vetting by DB required.	Sheffield Children's Hospital	Clinical Chemistry - metabolic laboratory, Sheffield Children's Hospital, Western Bank, Sheffield, S10 2TH	Switchboard 0114 271 7000 Biochemistry lab 0114 271 7305 Metabolic section: 0114 271 7445 results enquiries: metabolic.sc@nhs.net Claire Hart 0114 2717134 or 0114 21717307 Claire.hart10@nhs.net (Clinical Scientist)		Send upon arrival, Mon - Thur	< 2 umol/L (cholesterol reported in mmol/L) Affected range > 5 umol/L.	Reports returned by post.	(Sterols measured by GC-MS). Normal cholesterol biosyn would exclude Smith-Lemli-Opitz Syndrome. This sample was analysed at: Clinical Chemistry, Children's Hospital, Sheffield		3-6 weeks (but can be performed quicker if requested)
Alkaline phosphatase (ALP) isoenzyme electrophoresis (ALPIE)	Superset JAPIE - adds APIE2J and GG1J. If ALP is over an age-dependent threshold, telepath will generate ALPE1R & JCHM2L. Superset LAPIE - adds APIE2L and GG1L. If ALP is over an age-dependent threshold, telepath will generate ALPE1R & SA1R.	Serum. Stable at 4C for 1 week. Send within the week ideally but store at -20C if not due to be analysed within 1 week, avoid freeze thaw.	0.5 mL	fridge	Trust transport, ambient	Yes - vetting by DB required. Information from York: ALPIE analysis likely unnecessary if ALP < 200, GGT > 150, vit D insufficient, recent ALPIE result, pregnant, OAD, chronic alcohol use, IBD / UC. Use clinical judgement.	York	Department of Clinical Biochemistry, York Teaching Hospital, Wigington Road, York, YO31 6HE	York Duty Biochemist: 01904 726366 Lab: 01904 726802 Email: yhs-tr-biochemist@nhs.net Daniel Tumock, Consultant Clinical Scientist, Claire Lloyd (clinical scientist) 01904 726098		Send upon arrival, Mon - Thur	NA Interpretation provided on report	Results returned by post. Enter result in telepath. When entering results, type ?? For a list of result codes, e.g. LINC = liver isoenzyme increased.	This sample was analysed at: York Teaching Hospitals NHS Foundation Trust	When entering the result, type ?? for a list of result codes, e.g. LINC = liver isoenzyme increased. ZB0122 - ALP isoenzyme analysis not indicated at this level of ALP ZB0769 - ALP isoenzymes not usually informative if ALP marginally increased ZB0763 - Elevated bone ALP can be due to vitamin D deficiency. ZB0764 - hyperparathyroidism, Paget's disease, healing fractures or ZB0765 - Malignancy ZB0766 - Increased intestinal ALP can occur in non-fasting healthy ZB0767 - individuals with blood group O or B, in diabetes mellitus and a ZB0768 - variety of other conditions. ZB0770 - ALP likely to be hepatocellular in origin.	2 weeks
Alpha fetoprotein (AFP, serum reference assay) Should only be sent with paired CSF.	AFPR1R - does not add SA1R. No supersets	Serum (with or without gel acceptable)	0.5 mL	fridge (or frozen if > 7 days)	First class post (ambient)	send all	Charing Cross, (NW London Pathology)	Central Specimen Reception, 1st Floor Laboratory Block, North West London Pathology, Charing Cross Hospital, Fulham Palace Road, London, W6 8RF	General enquiries 020 8383 5906 Lab 020 331 33949 Duty Biochemist 020 3313 0348 Oncology lab 020 3311 9185 Dr Edmund Wilkes (Consultant) edmund.wilkes@nhs.net		Send upon arrival, Mon - Thur	0 - 13 ug/L	Results returned by post. Enter result in telepath.	Measured by an 'in house' reference assay at Medical Oncology, Charing Cross Hospital, London		4 days (letter)
Amiodarone (desethyl amiodarone also measured)	AMIO2R, also adds SA1R. JAMIO adds AMIO2R + JCHM2L. LAMIO adds AMIO2R + SA1R	EDTA plasma	1 mL	frozen	First class post (ambient)	Yes - vetting by DB required.	Cardiff toxicology Laboratories	Cardiff Toxicology Laboratory, 4th floor Routledge Academic Centre University Hospital Llandough Penlan Road, Llandough CF64 2XX	Results Enquiries: 029 2071 6894 Lab number 02921 826894 Office manager = Mrs Emma Taylor, 02920 716894, emma.taylor@wales.nhs.uk Mrs Joanne Rogers, Joanne.rogers@wales.nhs.uk www.ctlabs.co.uk		Send upon arrival, Mon - Thurs.	Amiodarone: 0.5 - 2 mg/L (no reference range in telepath - check an up-to-date report and request RR for telepath if appropriate) Desethyl amiodarone (no reference range)	Results returned by post. Enter result in telepath.	This sample was analysed at: Therapeutics & Toxicology Centre, Cardiff		7 days
Amylase isoenzymes / macroamylase -GOSH No longer offered as of 2023.	Book in as PROB1L (comment NRSOT) & SA1R	serum or heparin plasma	0.5 mL	frozen	Courier on dry ice	Yes - vetting by DB required.	GOSH	Chemical Pathology reception, Level 1, Camella Botnar Building, Great Ormond Street Hospital, Great Ormond Street, London WC1N 3JH	For results, goshlink.gosh.nhs.uk/ username: LEEDSTH.BLOODSCIENCE password: Pathology1		Send upon arrival, Mon - Thur		Results available at goshlink.gosh.nhs.uk/ username: LEEDSTH.BLOODSCIENCE password: Pathology1 Enter result in telepath.		Up to 5 weeks	
Amylase Isoenzymes - Synovial	Book in as PROB1L (comment NRSOT) & SA1R						Synovia > was Viapath (King's College Hospital London)				Send upon arrival, Mon-Thur		None - need to add free text comment indicating analysis was performed by Synovial.	NA		
Antimony	Book in as PROB1L (comment NRSOT) & SA1R	EDTA whole blood. Ideally also send a blank tube with the same lot number	2 mL	fridge	First class post (ambient)	Yes - vetting by DB required.	Guldford SAS trace elements	SAS trace elements centre, 15 Frederick Sanger Road, Guildford, Surrey GU2 7YD			Send upon arrival, Mon - Thur	< 1.1 nmol/L	Results returned by post. Enter result in telepath.			5 - 10 days
Anti-Mullerian hormone (AMH)	AMH1R, adds SA1R. No supersets.	serum	2 mL	frozen	First class post (ambient)	Yes - vetting by DB required. For monitoring / recurrence of granulosa cell tumours and as a marker of testicular activity (ix of DSDs)	Glasgow Royal Infirmary	Department of Clinical Biochemistry, Macqueen building, Glasgow Royal Infirmary, Castle Street, Glasgow, G4 0SF	0141 211 40034, option 2 for results, option 3 for clinical advice		Send upon arrival, Mon - Thur	Females < 50 pmol/L in young adults (falls steadily towards menopause where it becomes undetectable) Males: Levels fall at puberty. These ranges were derived from a study where stage of puberty was not determined: Males 0-1 y: 390-1300 pmol/L; Males 1-4 y: 300-1700 pmol/L; Males 5-9 y: 260-1200 pmol/L; Males 9-12 y: 100-1000 pmol/L; Males 13 - 16 y: 40-960 pmol/L, Adult males <100 pmol/L. Reference ranges not programmed into telepath.	Results returned by post. Enter result in telepath.	This sample was analysed at: Clinical Biochemistry, Glasgow Royal Infirmary		14 days (website)
Apolipoprotein A1 (apoA1)	Supersets: LAPLA1 / JAPLA1 (APLA1R - does not add SA1R)	Serum. Lithium heparin plasma also acceptable. Stable for separated 7 days at 4-8C, unseparated 224h	1 mL (0.5 mL paed)	fridge	First class post (ambient)	Yes - vetting by DB required.	Newcastle Royal Victoria	Department of Blood Sciences Level 3 Leazes Wing Royal Victoria Infirmary Queen Victoria Road Newcastle upon Tyne NE1 4LP	0191 282 9719 (Royal Victoria) 0191 24 48889 (Duty Biochemist) 0191 282 4025 (Endocrine lab) ruth.dutybiochemist@nhs.net	Daily	Send upon arrival, Mon - Thur	Male: 1.04-2.02 g/L Female: 1.08-2.25 g/L	Results returned by post. Enter result in telepath.	This sample was analysed at: SAS, Clinical Biochemistry, Royal Victoria Infirmary, Newcastle		3 days (website)
Apolipoprotein B (apoB100)	Supersets: LAPLB / JAPLB (APLB1R - does not add SA1R)	Serum. Lithium heparin plasma also acceptable. Stable separated for 7 days at 4-8C, unseparated 24h	1 mL	fridge	First class post (ambient)	Yes - vetting by DB required.	Newcastle Royal Victoria	Department of Blood Sciences Level 3 Leazes Wing Royal Victoria Infirmary Queen Victoria Road Newcastle upon Tyne NE1 4LP	0191 282 9719 (Royal Victoria) 0191 24 48889 (Duty Biochemist) ruth.dutybiochemist@nhs.net	Daily	Send upon arrival, Mon - Thur	M: 0.66-1.33 g/L F: 0.60-1.17 g/L	Results returned by post. Enter result in telepath.	This sample was analysed at: SAS, Clinical Biochemistry, Royal Victoria Infirmary, Newcastle		3 days (website)
Arylsulphatase C (white cell)	ARSCR & SA1R	EDTA blood		fridge			Willink	Willink Biochemical Genetics Laboratory, Manchester Centre for Genomic Medicine, 6th floor, pod 1, St Mary's Hospital, Oxford Road, Manchester, M13 9WL	Duty Biochemist at Willink - 0161 7018612 Willink lab 0161 7012306 or 0161 7012137/8 Enquiries for copy reports: mit.willink-enquiries@nhs.net			EDTA blood should only be sent Mon - Wed as must reach referral lab within 3 days of collection.	will be quoted on the report			
Asparaginase - sent directly to GOSH from ward. No action needed.																
Atypical haemolytic uraemic syndrome (aHUS) (SAMPLE PROCESSING ONLY)	AHUS1R + STOR3L. SA1R not required since samples collected by Newcastle's courier.	Required samples depend on indication for testing. Refer to EQMS document BSFO009 & BSFO010.		whole blood EDTA; fridge EDTA plasma / serum / citrated plasma: -80 freezer.	DB to arrange Newcastle's courier to collect	NA. Requests for aHUS sample processing should come to the Duty Biochemist in advance.	Newcastle Royal Victoria	National aHUS service, Blood Sciences laboratory Leazes wing Royal Victoria Infirmary Newcastle upon Tyne NE1 4LP	on-call consultant 0191 2336161 alytical.hus@nhs.net https://www.alyticalhus.co.uk/emergency-referrals/forms-and-protocols/aHUS-lab-diagnosis/	NA		DB to arrange for Newcastle's courier (TNE logistics) to collect ASAP. Details on BSFO009.	NA - sample processing and dispatch to Newcastle only. No results received back to the Leeds lab.	NA - sample processing and dispatch to Newcastle only. No results received back to the Leeds lab.	None	
AVP - test no longer available.	AVP1R or AVPU1R (also adds SA1R)	plasma or urine					Newport							(AVP = Arginine Vasopressin) This sample was analysed at: Clinical Biochemistry, Royal Gwent Hospital, Newport		
Batten disease enzymes (Palmitoyl protein thioesterase I & Tripeptidyl peptidase I)	BATE1R. Also adds SA1R	heparin whole blood (first line test), needs to reach GOSH within 24h of collection. Acceptable up to 48h.	5-8 mL	fridge	courier, room temp	Send all	GOSH	Chemical Pathology reception, Level 1, Camella Botnar Building, Great Ormond Street Hospital, Great Ormond Street, London WC1N 3JH	0207 7813 8318 0207 405 9200 ext 8751 / 1785 glenn.anderson@nhs.net https://goshlink.gosh.nhs.uk/EpicCareLink_PRD/common/epic_login.asp username: LEEDSTH.BLOODSCIENCE password: Pathology1		Send immediately upon arrival - should reach GOSH within 24h. See T&T.	notification emailed to referred tests inbox. Access report at goshlink.gosh.nhs.uk/ username: LEEDSTH.BLOODSCIENCE password: Pathology1 Enter result in telepath.	Normal levels of palmitoyl protein thioesterase (PPT) and tripeptidyl peptidase I (TPP) activities would make a diagnosis of infantile (INCL, NCL, CLN1) and classic late infantile (LINC, NCL, CLN2) neuronal ceroid lipofuscinosis highly unlikely. If the diagnosis of neuronal ceroid lipofuscinosis is strongly suspected, an EDTA sample may be sent for further analysis. This would be arranged via your local laboratory. - these comments added regardless of numerical results This sample was analysed at: Chem Path, Great Ormond Street Childrens Hospital, London		6 weeks (website)	

Batten disease histology (vacuolated lymphocytes)	BATH1R Also adds SA1R	EDTA whole blood		fridge		courier, room temp	Send all		GOSH	Chemical Pathology reception, Level 1, Camella Bolnar Building, Great Ormond Street Hospital, Great Ormond Street, London, WC1N 3JH	0207 7813 8318 0207 405 9200 ext 8751 / 1785 glenn.anderson@nhs.net		Send immediately upon arrival - should reach GOSH within 24h. See T&T.	NA		notification emailed to referred tests inbox. Access report at goshlink.gosh.nhs.uk/username: LEEDSTH.BLOODSCIENCE password Pathology1 Enter result in telepath.	This sample was analysed at: Histology, Great Ormond Street Childrens Hospital, London	40 days (check)		
Bile acids (plasma) Usually analysed at LHHT	BACP1R & SA1R																			
Biotpterins / Dihydrobiopterin reductase (DHPR)	BOPT1R & SA1R	dried blood spot (BSD) NOT from anti-coagulated blood. Ideally collect when phenylalanine is increased. 2 x 10 mm spots for DHPR 6 x 10 mm spots for biotpterins (+ 1 extra if phenylalanine result is not provided).	N/A	store frozen prior to shipment.		First class post (ambient)	Yes - to vet by DB or by Caroline Griffith (newborn screening)		Birmingham Children's Hospital	Newborn Screening & Biochemical Genetics, Birmingham Children's Hospital, Steehouse Lane, Birmingham, West Midlands, B4 6NH	twc.indlab@nhs.net 01213339942 (MD Duty BMS) 07765828617 (NB Duty Biochemist)		Send upon arrival, Mon - Thur			DHPR: 0.74 - 2.57 umol NADH / min / g Hb. If the DHPR activity is ≥ 0.70, the result is reported as normal. Expected pterin results in GTPCH deficiency: low neopterin (<5 nmol/L / < 0.5 nmol/gHb), low biopterin (<5 nmol/L / < 0.5 nmol/gHb). Expected pterin results in PTPS deficiency: high neopterin (>150 nmol/L / >15 nmol/gHb), low biopterin (<5 nmol/L / < 0.5 nmol/gHb), low % biopterin (<15%). Interpretation provided on report. No reference ranges set up on telepath.	Reports are usually sent directly back to SLM block 46. If received at LCI, forward report to newborn screening section, block 46 (SLM), S.U.J.H., Caroline.griffith@nhs.net & robert.banski@nhs.net	This sample was analysed at: Clinical Chemistry, Children's Hospital, Birmingham	none	3 weeks (15 working days)
Caffeine (not listed in 2022 or 2023 handbook, listed in acute test list but no price given)	CAFF1R (adds SA1R)	lithium heparin plasma	0.5 mL	fridge		First class post (ambient)	yes - vetting by DB required		Sheffield Children's Hospital	Chemical Pathology, Sheffield Children's Hospital NHS Trust, Western Bank, Sheffield, S10 2TH	Switchboard 0114 271 7000 Biochemistry lab 0114 271 7305 Claire.hart10@nhs.net (Clinical Scientist)		Weekly on Tuesdays	Send upon arrival, Mon - Thurs	10 - 35 mg/L	Results returned by post. Enter result in telepath comment field until RR have been updated.	Note: reference range quoted for high dose caffeine therapy This sample was analysed at: Clinical Chemistry, Children's Hospital, Sheffield	7 days		
Calcitonin	CATN2R SuperSet LCATN - adds CATN2R, SA1R & ALQTS3 JCATN - adds CATN2R, JCHM2L & ALQTS3	serum. EDTA plasma also acceptable. Separate within 30 min of collection and freeze immediately. Send as long as < 40 min.	2 mL	freezer		First class post (ambient)	vetting by DB required (see pre-analytical requirements)		Sheffield PRU	Immunology / Protein Reference Unit, Northern General Hospital, Herries Road, Sheffield S5 7AU	0114 226 9196 (general enquiries) 0114 271 5522 (results enquiries) results enquiries: sht-fr:BloodSciences@nhs.net Graeme.Wild, graeme.wild@nhs.net https://www.immqs.org.uk/pru.asp		weekly but not on any specific day	Thursdays	Current IAH method: 0 - 10.5 ng/L Previous radioimmunoassay method: <2 mIU/L	Results returned by post. Enter result in telepath.		14 working days (website)		
Carbohydrate deficient transferrin (CDT)	SCDT1R & SA1R	serum	2 mL	fridge		First class post (ambient)	OK to send from LHHT occupational health.		Sheffield PRU	Immunology / Protein Reference Unit, Northern General Hospital, Herries Road, Sheffield S5 7AU	General enquiries 0114 226 9196 Result enquiries 0114 271 5522 sht-fr: bloodsciences@nhs.net		weekly	Send upon arrival, Mon - Thurs	0.0 - 2.6%	Results returned by post. Enter result in telepath.	This sample was analysed at:	5 days		
Carboxy-terminal collagen crosslinks (CTX)	CTX2R SuperSet LCTX - adds CTX2R, SA1R & ALQTS3 SuperSet JCTX - adds CTX2R & JCHM2L	EDTA plasma. Single EDTA plasma sample can be sent for both CTX and P1NP. Cannot be analysed in haemolysed samples. Serum is not acceptable.	0.5 mL	freezer		Courier on dry ice	Send all		Norfolk & Norwich University Hospital (Eastern Pathology Alliance)	Eastern Pathology Alliance, Laboratory Medicine East Block, Level 1 Norfolk & Norwich University NHS Foundation Trust Colney Lane Norwich NR4 7UY	Hospital switchboard 01603 286286 Biochemistry lab 01603 289419 Endocrinology lab 01603 289419 Alison.chipchase@nruh.nhs.uk (secure), 01603 287945 charlotte.stokes@nhs.net susanne.mcormurray@nhs.net holie.barett@nhs.net (transc BMS in Endo) Duty Biochemist: 01603 646885 DB email: nruh-fr:metabulbiochemist@nhs.net bone lab: SAASBoneMetabolism@nruh.nhs.uk		Wednesday	Mondays (along with P1NP)	0.1 - 0.5 ug/L Age and sex related ranges	Results returned by post. Enter result in telepath.	Clinical Chemistry, Children's Hospital, Sheffield	CTX1 - CTX within normal limit. CTX2 - If on anti-resorptive, good response to treatment. CTX3 - Elevated CTX, High bone resorption. CTX4 - CTX suppressed - response to treatment?	2 weeks (user guide on website)	
Cardiolipin and MLCL/CL ratio	CDL1R - also adds SA1R	EDTA whole blood. DBS also acceptable prepared in the lab by spotting 40 uL EDTA whole blood. Should be prepared within 24h of venepuncture.	1 mL	fridge		courier, at room temp (to reach lab within 24h of venepuncture)	Send all (given time restrictions)		Bristol Royal Infirmary	Metabolic, Neuroendocrine and Nutrition Laboratory, Department of Clinical Biochemistry, Bristol Royal Infirmary, Bristol, BS2 8HW	0117 342 2590 0117 342 2040 Duty Paediatric & Metabolic Biochemists 0117 3421299 http://www.uhbristol.nhs.uk/patients-and-visitors/our-hospitals/other-services-in-bristol/bariatrics/diabetes/service/testing/ Victoria.Powers@uhbristol.nhs.uk Rebecca.hopkins@uhbristol.nhs.uk https://www.amc.nhs.uk/web/laboratory-genetic-metabolic-diseases-igm/igmnd/cardiolipins.htm		Send upon arrival, Mon - Thurs. Must arrive in Bristol the following day.		0 - 0.30 (needs updating in telepath, telepath states < 0.10)	Enter result in telepath as a comment until reference range is corrected.	This sample was analysed at: Department of Clinical Biochemistry, Bristol Royal Infirmary - needs updating since samples are actually sent on to Amsterdam. This assay is not UKAS-accredited.	24 weeks		
Cardiolipin antibody (aka anti-phospholipid antibody) & IgG-glycoprotein antibody = Immunology test	APSL1 - does not add SA1R	serum														Results returned by post. Enter result in telepath.				
Carnitines (plasma)	CRNP1R & SA1R																NA			
Catecholes		random urine																		
Chitotriosidase	CHIT1R. Also need to add SA1R	EDTA whole blood. Must reach the Willink within 2h of collection.	2 mL	fridge		First class post (ambient)	Yes, vetting by DB required.		Willink	Willink Biochemical Genetics Laboratory, Manchester Centre for Genomic Medicine, 8th floor, pool 1, St Mary's Hospital, Oxford Road, Manchester, M13 9WL	Duty Biochemist at Willink - 0161 7018612 Willink lab 0161 7012308 or 0161 7012137/8 Enquiries for copy reports: mt.willink-enquiries@nhs.net		EDTA blood should only be sent Mon - Wed as must reach referral lab within 3 days of collection.		Plasma 4 - 120 nmol/mh	Results returned by post. Enter result in telepath.		2 weeks (lab handbook)		
Cholesterol	No telepath code - currently booked in as a PROBL (comment NRSOT) & SA1R	Lithium heparin plasma or serum	1 mL (minimum 0.3 mL)	freezer		First class post (ambient)	Yes, vetting by DB required.		Sheffield Children's Hospital	Clinical Chemistry - metabolic laboratory, Sheffield Children's Hospital, Western Bank, Sheffield, S10 2TH	Switchboard 0114 271 7000 Biochemistry lab 0114 271 7305 Metabolic section: 0114 271 7445 results enquiries: metabolic.sch@nhs.net Claire.hart10@nhs.net (Clinical Scientist)		Send upon arrival, Mon - Thur		3-16 µmol/L	Results returned by post. Enter result in telepath as a comment (+AMEND) on PROB set, including location of analysis	None	None	3-6 weeks	
Cholinesterase activity/phenotype/genotype	CHE1R - also adds SA1R No supersets	EDTA whole blood. Serum acceptable for activity and phenotype but not genotype. Sample should not be taken during a suspected episode of suxamethonium prolonged apnoea, take once awake and breathing unaided.	3 mL whole blood 1 mL serum	fridge (do not freeze)		First class post (ambient)	Send only if no previous		Bristol Southmead Hospital	Department of Biochemistry, Southmead Hospital, Southmead Road, Westbury on Trym, Bristol, BS10 5NB	0117 950 5050 ext 5556 Peter.Berestford@nbt.nhs.uk nbt-fr:ClinicalBiochemistryNBT@nhs.net 0117 414 8415		Send upon arrival, Mon - Thur		Activity >3300 U/L via for phenotype	Enter result in telepath and upload full report to PPM.	For full interpretation see attached original report. Sample analysed by Clinical Biochemistry, Southmead Hospital	Phenotype: 3 weeks Activity only: 1 week Genotype: 10 weeks		
Chromogranin A	LGI supersets LCHRA - expands to CHGR2R & SA1R S.U.J.H supersets JCHRA - expands to CHGR2R & JCHM2L	Serum. Lithium heparin or EDTA plasma also acceptable. Taken following 10h fast (likely to be a morning sample). Requires separation and freezing within 3h of collection (up to 3.5h acceptable)	2 mL	freezer		First class post (ambient)	Yes - vetting by DB required.		Sheffield PRU	Immunology / Protein Reference Unit, Northern General Hospital, Herries Road, Sheffield S5 7AU	General enquiries 0114 226 9196 Result enquiries 0114 271 5522 sht-fr: bloodsciences@nhs.net		Not analysed on any specific day	Thursdays	0.0 - 6 nmol/L	Results returned by post. Enter result in telepath.	Tumour markers are not diagnostic and are of most use in monitoring response to treatment and early detection of relapse. Normal values do NOT exclude malignancy. Quoted ranges are only valid for serum. This sample was analysed at: Protein Reference Unit (PRU), Sheffield	2 weeks (website)		
Chromogranin A&B (not often used, see chromogranin A)	No telepath code - currently booked in as a PROBL (comment NRSOT) & SA1R	EDTA plasma. Must be rushed to lab within 30 min of collection and centrifuged. Does not need refrigerated centrifuge as long as the plasma is separated and frozen immediately. (checked with referral lab Feb 2019). Should be collected after overnight (6-8h) fast. Lithium heparin with trasyol also acceptable.	1 mL	freezer		Courier on dry ice	Yes - vetting by DB required.		Charing Cross (NW London Pathology)	Central Specimen Reception, 1st Floor Laboratory Block, North West London Pathology, Charing Cross Hospital, Fulham Palace Road, London, W6 8RF	0203 313 3949 for gut hormone lab 0203 313 5911 Paul.beach@nhs.net susan.williams33@nhs.net For clinical enquiries, tricia.tan@nhs.net http://pathology.imperial.nhs.uk/		send upon arrival, Mon - Thurs		chromogranin A < 60 pmol/L chromogranin B < 150 pmol/L	Results returned by post. Enter result in telepath.		21 days (letter)		
Clobazam	LCL0B / JCL0B super set codes (CLOB2R - also adds SA1R)	EDTA plasma Gel tubes are NOT suitable	1 mL	separate plasma and store at -20		First class post (ambient)	Yes - vetting by DB required.		Cardiff toxicology Laboratories	Cardiff Toxicology Laboratory, 4th floor, Routledge Academic Centre University Hospital, Llandough Penarth Road, Llandough CF94 2XX	Results Enquiries: 029 2071 6894 Lab number 02921 826594 Office manager - Mrs Emma Taylor, 02920 716894. emma.taylor@wales.nhs.uk Mrs Joanne Rogers, Joanne.rogers@wales.nhs.uk www.clabas.co.uk		Send upon arrival, Mon-Thurs		0.1 - 0.4 mg/L NEEDS CHANGING TO 50 - 300 ug/L. .IL submitted 24/01/23	Results returned by post. Enter result in telepath.	This sample was analysed at: Toxicology Laboratory, Llandough Hospital, Penarth	7 days (website & letter)		
Clozapine (clozaril) Samples should NOT be sent to Biochemistry. NOT handled by referrals team. See notes.	Book in as PROB. These samples should not come to the Bioc Sciences lab. CLOZZR set deactivated.	Serum, no gel		NA. Samples should be sent directly from the clinic. NOT via the lab.				See notes	See notes	Pharmacist at The Mount, 0113 3055530						NA				
Coenzyme Q10 (ubiquinone) (muscle)	No telepath code - currently booked in as a PROBL (comment NRSOT) & SA1R	muscle biopsy (snap frozen)	10 - 20 mg tissue	Frozen at -70		Courier on dry ice	Yes - vetting by DB required.		Neurometabolic unit, Institute of Neurology, London	Neurometabolic Unit 6th floor Institute of Neurology Queen Square House Queen Square London WC1N 3BG	Lab direct line 020 344 83818 uch.enquiry.neurometabolic@nhs.net amanda.lam@nhs.net stuart.benetti@nhs.net simon.heales@nhs.net website: https://www.uch.nhs.uk/our-services/find-service/neurology-and-neurosurgery/neurometabolic-unit		Send upon arrival, Monday - Thursday		140 - 580 pmol/mg protein	Results returned by post. Enter result as a comment in the PROB set + AMEND		40 working days (lab user manual) = 8 weeks = 56 days		

Coenzyme Q10 (ubiquinone) (white cells)	No telepath code - Currently booked in as a PROBL1 (comment NRSOT) & SA1R	EDTA blood	5 mL	ambient temperature		Courier at ambient temperature, must reach NMU within 24h of venepuncture. Please contact the lab prior to sending a sample.		Neurometabolic unit, Institute of Neurology, London	Neurometabolic Unit 6th floor Institute of Neurology Queen Square House Queen Square London WC1N 3BG	Lab direct line 020 344 83816 uch enquiry neurometabolic@nhs.net amanda.lam@nhs.net stuart.bennetts@nhs.net simon.heales@nhs.net website: https://www.uch.nhs.uk/our-services/find-service/neurology-and-neurosurgery/neurometabolic-unit	Send upon arrival, Monday - Thursday	37 - 133 pmol/mg	Results returned by post. Enter result as a comment in the PROB set + AMEND		Not stated	
Common α-subunit (ASU)	PFAS1R supersert LPPAS - adds PFAS1R + SA1R supersert JPPAS - adds PFAS1R + JCHMZL	serum. Once separated, stable for 5 days at 4°C or 6m at -20°C	0.5 mL	freezer		First class post (ambient)	Yes - vetting by DB required.	Birmingham Queen Elizabeth Hospital	Biochemistry, Queen Elizabeth Hospital, Mindelsohn Way, Birmingham, B15 2WB	0121 371 5999 (biochem general enquiries) 0121 371 5980 (specialist laboratory) 0121 371 5982 (Endocrinology lab) 0121 371 6543 (Duty Biochemist) sias.woodson@nhs.uk (Clinical Scientist) biolink@uhb.nhs.uk bionry.johnson2@uhb.nhs.uk	assay run every 2-3 weeks. Send upon arrival, Mon - Thur	All males & females $\leq 40y$: < 1.00 IU/L females $>40y$ and mid-cycle: < 3.00 IU/L. In pregnancy there is a 6.1% cross-reaction with hCG resulting in high ASU results in pregnancy. Interpret along with LH, FSH, TSH and renal function.	Results returned by post. Enter result in telepath	This sample was analysed at: Endocrine Laboratory, Queen Elizabeth Hospital, Birmingham This assay is not UKAS-accredited. (needs removing)	21 days	
Copeptin	LGI supersert LCOPT - adds COPT1R & SA1R. SJUH supersert JCOPT - adds COPT1R and JCHMZL.	Serum. Lithium heparin or EDTA plasma also acceptable. Once separated, stable for 7 days at 20-25°C or 14 days at 4-8°C. Unseparated 24h	1 mL	fridge		First class post (ambient)	Yes - vetting by DB required.	Newcastle Royal Victoria	Department of Blood Sciences Level 3 Leazes Wing Royal Victoria Infirmary Queen Victoria Road Newcastle upon Tyne NE1 4LP	Freeman Lab: 0191 244 8889 Royal Victoria lab: 0191 282 9719 Duty Biochemist: 0191 2448889 Enzyme lab: 0191 2824025 christopherboot@nhs.net or Christopher.Boot@nuth.nhs.uk	Assayed every 3-4 weeks. Send upon arrival, Mon - Thur	No RR quoted. An interpretive comment will be included with each report.	Results returned by post. Enter the result in telepath. File the report in the green folder in the tray on the DB desk.		4 weeks (website)	
Cortisol (LCMS) & Dexamethasone	LCODX (adds CORT1L, LCOR1R, SA1R)	Serum (or lithium heparin plasma) Once separated, stable for 7 days at 20-25°C or 14 days at 4-8°C.	0.3 mL	ambient temperature		First class post (ambient)	Yes - vetting by DB required. Only send if requested by Endocrinology and if cortisol is not suppressed following overnight dexamethasone suppression test.	Wythenshawe	Biochemistry Dept Clinical Science Building Wythenshawe Hospital Southmoor Road Manchester M23 9LT	0161 291 5084 0161 291 2126 (enquiries) 0161 291 2136 (Duty Biochemist) mt.biochemistry.wythenshawe@nhs.net (DB email) Duty Biochemist in the first instance. Dr Jo Adaway, Consultant Clinical Scientist	Mon, Thu	nmol/L	Results returned by post. Email to stephen.gibbons@nhs.net to report.	No comment added	2 weeks (360 hours) 1.5 days for cortisol alone (36 hours)	
Creatine kinase (CK) Isoenzymes / macro-CK	CKMB1R. Also adds SA1R (but not SA1R). For R&D book in as XCKMB1 & SA1R.	serum (with or without gel). EDTA, heparin, citrate, fluoride samples are not suitable. Samples are stable for 72h in the fridge.	0.5 mL (absolute minimum is 100 μ L)	freezer		First class post (ambient)	Yes - vetting by DB required.	Charing Cross (NW London Pathology)	Clinical Biochemistry Department 8th floor lab block Charing Cross Hospital Fulham Palace Road London W6 8RF	www.nw.pathology.nhs.uk 0203 31 35353 alan.courtney@nhs.net for clinical queries. 0203 31 15187 ICHC-tr.pathologyqueries@nhs.net for results	Send upon arrival, Mon-Thurs	NA	Interpretation provided with report. Densitometry reported as percentage of total CK present.	Results returned by post. Enter result in telepath. Comments as required.	This sample was analysed at: Clinical Chemistry, Charing Cross Hospital, London	4-6 weeks. Can call if more urgent.
CSF Alpha fetoprotein (AFP, CSF)	AFPC1R - also adds SA1R LAFFC - adds AFPC1R (but not SA1R) JAFFC - adds AFPC1R (but not transfer code)	CSF, universal container	0.5 mL	fridge (or frozen if > 5 days) Avoid repeat freeze-thaw cycles		First class post (ambient)	send all	Charing Cross (NW London Pathology)	Central Specimen Reception, 1st Floor Laboratory Block, North West London Pathology, Charing Cross Hospital, Fulham Palace Road, London, W6 8RF	General enquiries 020 8383 5906 Lab 020 331 33949 Duty Biochemist 020 3313 0348 Oncology lab 020 3311 8185 Dr Edmund Wilkes (Consultant) edmund.wilkes@nhs.net	Send upon arrival, Mon - Thur	< 3 μ g/L (older than 2 months of age)	Results returned by post. Enter result in telepath	Measured by an "in house" reference assay at: Medical Oncology, Charing Cross Hospital, London	4 days (letter)	
CSF Angiotensin converting enzyme (ACE) (CSF)	Book in as ACEC1R & SA1R	CSF Samples are stable for 4 days at ambient temperature, 10 days at 4°C, 6 months at -20°C.		frozen		Courier on dry ice	Yes - vetting by DB required. DBs: Send if previously agreed with the requesting team. Otherwise, NA.COM with a comment informing the user that the sample won't be sent unless discussed with the DB.	Neurometabolic unit, Institute of Neurology, London	Neurometabolic Unit 6th floor Institute of Neurology Queen Square House Queen Square London WC1N 3BG	Vaneesha Gibbons Tel: +44 (0)203 44 84250 E-Mail: vaneesha.gibbons@uch.nhs.uk or uch enquiry neurometabolic@nhs.net Phone number - 020 3448 3818 website: https://www.uch.nhs.uk/our-services/find-service/neurology-and-neurosurgery/neurometabolic-unit	Send upon arrival, Mon - Thur	<1.2 umol/min/L. Analytical service only, no interpretation of the result provided.	Results returned by post. Enter result in telepath	This sample was analysed at: Neurometabolic Unit/N Institute of Neurology, London. Need to correct type Please note change in units and reference range.	30 working days (6 weeks)	
CSF Human chorionic gonadotrophin (hCG, CSF)	HCGC1R - adds SA1R. No superserts	CSF, universal container	1 mL	fridge, avoid repeat freeze thaw cycles		First class post (ambient, send ASAP)	send all	Charing Cross (NW London Pathology)	Central Specimen Reception, 1st Floor Laboratory Block, North West London Pathology, Charing Cross Hospital, Fulham Palace Road, London, W6 8RF	General enquiries 020 8383 5906 Lab 020 331 33949 Duty Biochemist 020 3313 0348 Oncology lab 020 3311 8185 Dr Edmund Wilkes (Consultant) edmund.wilkes@nhs.net	Send upon arrival, Mon - Thur	< 2 IU/L	Results returned by post. Enter result in telepath	Measured by an "in house" reference assay at: Medical Oncology, Charing Cross Hospital, London	4 days (letter)	
CSF neurotransmitters (aka monoamine metabolites)	NEUT1R - adds SA1R. No superserts	CSF. Must be collected into special tubes provided by the lab, and snap frozen on dry ice. These samples are stored for 6 months and only sent to London if when specifically requested by the requesting doctor.	Tube 1: 0.5 mL for HVA & 5HIAA. Tube 2: 0.5 mL. Tube 3: contains preservative DTE DETAPAC, 1.0 mL for Pterin analysis.	-80 freezer Safe-haven box. If not sent straight away, store for 12 months.		Courier on dry ice	Inform DB. These samples are stored for 12 months and only sent to London if when specified by the requesting doctor.	Neurometabolic unit, Institute of Neurology, London	Neurometabolic Unit 6th floor Institute of Neurology Queen Square House Queen Square London WC1N 3BG	020 3448 3818 020 7813 8321 uch enquiry neurometabolic@nhs.net kiran.basra@nhs.net to chase results simon.heales@nhs.net (clinical biochemist) smpocpe@nhs.net (clinical biochemist)	Send if requested by clinician, Mon - Thurs only.	Reference ranges are age-related. CSF pyridoxal phosphate 14 - 92 nmol/L CSF neurotransmitters CSF homovanillic acid 362 - 955 nmol/L CSF 5-hydroxyindoleacetic acid 63 - 503 nmol/L CSF HVA:5HIAA ratio 1.0 - 3.7 CSF 5-methyltetrahydrofolate 72 - 305 nmol/L CSF pterins CSF dihydrobiopterin 0.4 - 13.9 nmol/L CSF tetrahydrobiopterin 23 - 55 nmol/L CSF total neopterin 7 - 65 nmol/L	Results Emailed as a pdf attachment to the referrals inbox. Upload results to PPM. Report on telepath with PPM coded comment.	This sample was analysed at: Neurometabolic Unit, Institute of Neurology, London. Need to correct type in autocoment.	30 working days (6 weeks) (lab manual)	
CSF orexin (aka hypocretin)	OREX1R (adds SA1R)	CSF, also retain an aliquot in lab (aliquot to be stored frozen)	0.5 mL	fridge		First class post (ambient)	Yes - vetting by DB required.	Oxford Churchill Hospital	Immunology Dept., Churchill Hospital, Churchill Drive, Old Road, Headington, Oxford, OX3 7LE	01865 225 995 immunology.office@nhs.net	Mon - Thurs	Values >200 pg/mL are seen in healthy controls. Values of <110 pg/mL are mainly seen in patients with narcolepsy with cataplexy. Values between 110-200 pg/mL can be seen in patients with other neurological diseases associated with sleep disturbances.	Results returned by post. Enter result in telepath	need to change autocomments on telepath 'Analysed at Churchill Hospital, Oxford'	42 working days (9 weeks = 63 days)	
CSF Placental alkaline phosphatase (PLAP, CSF)	PAPR - also adds SA1R This is the serum set code Book as PROBL1 + SA1R	CSF, universal container	1.0 mL	frozen - avoid repeated freeze thaw cycles (can store in fridge and send ambient only if likely to be received in Charing Cross within 3 days)		Courier on dry ice	Send all	Charing Cross (NW London Pathology)	Central Specimen Reception, 1st Floor Laboratory Block, North West London Pathology, Charing Cross Hospital, Fulham Palace Road, London, W6 8RF	General enquiries 020 8383 5906 Lab 020 331 33949 Duty Biochemist 020 3313 0348 Oncology lab 020 3311 8185 Dr Edmund Wilkes (Consultant) edmund.wilkes@nhs.net	Send upon arrival, Mon-Thurs	<100 mU/L	Results returned by post. Enter result in telepath	This sample was analysed at: Medical Oncology, Charing Cross Hospital, London	4 weeks	
Cyanide & Thiocyanate - no longer available.	CNB1R							Cardiff toxicology Laboratories	Cardiff Toxicology Laboratory, 4th floor Academic Centre University Hospital Llandough Penlan Road, Llandough CF64 2XX	Results Enquiries: 029 2071 6834 Office manager = Mrs Emma Taylor, 02920 716894, emma.taylor@wales.nhs.uk Mrs Joanne Rogers, Joanne.rogers@wales.nhs.uk www.ctlabs.co.uk			NA		1 week	
Cystatin C	PROBL1 (comment NRSOT) & SA1R	serum or lithium heparin plasma. Stable for 48h at room temp in whole blood (Spithoven et al, 2013). After centrifugation: 7 days at 2-8°C or 3 months at -20°C (Roche kit insert)	0.2 mL	fridge		First class post (ambient)	Yes - vetting by DB required.	Manchester Royal Infirmary (Biochemistry)	Biochemistry Dept (ground floor) CSB3 Manchester Royal Infirmary Oxford Road Manchester M13 9WL	https://mf.nhs.uk/app/uploads/2020/01/Cystatin-C-1.pdf mt.dutybiochemistenquiries-cmf@nhs.net 0161 701 2255 (paed Duty Biochemist)			Prematurity (2940 to 3640) 0.62 - 4.42 mg/L 0-28 d 0.80 - 2.30 mg/L 1-12 m 0.70 - 1.50 mg/L 1-17 y 0.56 - 1.30 mg/L 18y -50 y 0.56 - 0.98 mg/L $\geq 50y$ 0.61 - 1.40 mg/L			24h
Cytokines (Immunology)	Book in as PROBL1 (comment NRSOT), SIMM1L & SA1R	serum or CSF		-70 freezer		Courier on dry ice	No	GOSH	FAO Kimberly Gilmore Immunology lab, Level 4, Camelia Botnar laboratories, Great Ormond Street Hospital Great Ormond Street London WC1N 3JH	Kimberly.Gilmour@gosh.nhs.uk ph: 020 7813 8406 (office) ph: 020 7829 8835 (lab) www.labs.gosh.nhs.uk/laboratory-services/immunology			goshlink.gosh.nhs.uk/username LEEDSTH BLOODSCIENCES password Pathology1			
Dihydroxy acetone phosphate acyl transferase (DHAP-AT) No longer offered as of 2021	Book in as PROBL1 (code NRSOT) + SA1R	EDTA whole blood	4 mL	fridge		First class post (ambient)	Yes - vetting by DB required.	Willink	Willink Biochemical Genetics Laboratory, Manchester Centre for Genomic Medicine, 6th floor, pool 1, St Mary's Hospital, Oxford Road, Manchester, M13 9WL	Duty Biochemist at Willink - 0161 7018612 Willink lab 0161 7015008 Enquiries for copy reports: mt.willink-enquiries@nhs.net	Mon - Wed.		NA			
Disaccharidases (lactase, maltase, sucrase)	DSAC1R, also adds SA1R	duodenal biopsy (DB) or jejunal biopsy (JB), snap frozen on dry ice in foil / universal tube.	1 mg tissue	dry ice		Courier on dry ice	send all	Manchester Royal Infirmary (Biochemistry)	Specialist Biochemistry, First floor, Clinical Sciences Building 3, Manchester Royal Infirmary, Oxford Road, Manchester, M13 9WL	Specialist lab 0161 701 1215 peterbarrow@nhs.net - retiring end Feb 2022 New contact = henry.jyanda@mf.nhs.uk, 0161 701 1420 Fiona Iverson 0161 7011728 Duty Biochemist 0161 701 2255 results line 0161 276 8766			JEJUNAL MALTASE 130 - 456 U/g protein JEJUNAL LACTASE 30 - 152 U/g protein JEJUNAL LACTASE 6 - 55 U/g protein	Results returned by post. Enter results in telepath.	** Please note ** Reference ranges only apply to Jejunal biopsies. Assuming the sample was frozen (-20C) ASAP after collection. Duodenal samples will have a lower activity. This sample was analysed at: Paediatric Biochemistry, Manchester Royal Infirmary. This assay is not UKAS-accredited.	2 weeks
D-lactate	LGI supersert LDLAC (EMAB1R & SA1R), SJUH supersert JEMAB DLAC1R & JCHMZL	Serum or lithium heparin, should be separated within 1h of collection. Once separated stable for 1 week at 8°C.	0.3 mL	frozen		First class post (ambient)	Yes - vetting by DB required.	Birmingham Children's Hospital	Blood Sciences department Birmingham Children's Hospital Stebbhouse Lane Birmingham B4 6NH	twc.biochemist@nhs.net (DB email) Sarah Heap sarahheap1@nhs.net 0121 333 9935 (Biochem) 0121 333 9912 (reception)	Send upon arrival, Mon - Thur	<19 umol/L. Interpretation provided with report.	Results returned by post. Enter results in telepath.	This result was produced by Clinical Chemistry, Birmingham Children's Hospital. This assay is not UKAS-accredited.	5 days (letter 2022)	
DPYD mutation analysis	a genetics test done by Synovis. Requests should go through genetics at SJUH.							FAO Kimberly Gilmore Immunology lab, Level 4, Camelia Botnar laboratories, Great Ormond Street Hospital Great Ormond Street London WC1N 3JH					NA			
Eosin 5-Maleimide (EMA) binding assay (hereditary spherocytosis)	LGI supersert LEMAB (EMAB1R & SA1R), SJUH supersert JEMAB (EMAB1R)	EDTA blood, to reach Manchester within 24 h of sample collection, although acceptable up to 48 hours old	1 mL minimum, ideally 5 mL	fridge		courier, ambient	Yes. Notify Ellie / Jen / Kevin or senior Haematologist as soon as the sample arrives. Reject samples that are too old to be received in Manchester within 48h. Ellie / Jen / Kevin to call Manchester and leave a message with details of patient and when sample is expected to arrive: 0161-276-8440	Manchester Royal Infirmary (Immunology)	Greater Manchester Immunology Service, 3rd Floor, Clinical Sciences Centre, Manchester Royal Infirmary, Oxford Road, Manchester, M13 9WL	https://mf.nhs.uk/app/uploads/2020/01/EMA-Binding-Assay-HS-Screen.pdf Internal contact: Sharon Radford Manchester Immunology: Tel: 0161 701 1219 (not the lab number) dm.comms@mf.nhs.uk, Andrew.Moran@mf.nhs.uk	Can be analysed Monday - Saturday. Send upon arrival, Mon - Fri		Results should be reported automatically via NPEx (Labprosci). Contact Sharon Radford with any issues. Result will go into haematology NPCL authorisation list.		4 days (median)	

Essential fatty acids (PUFAs)	Book in as PROB1L (comment NRSOT) & SA1R	EDTA plasma. Separated and freeze within 2h. Collect at least 2h after meal, or after overnight fast. Heparin plasma also accepted. (EDTA whole blood preferred but must arrive in Amsterdam lab within 24h)	0.5 mL	Store plasma frozen	International courier, on dry ice Send Amsterdam UMC request form along with samples, available from https://www.amc.nl/web/laboratory-genetic-metabolic-diseases-lmns/lmns/essential-fatty-acids-pufas.htm	Yes, vetting by DB required.	Amsterdam	Use label from request form. Laboratory Genetic Metabolic Diseases, Amsterdam UMC, Location AMC, Meibergdreef 9, 1105 AZ Amsterdam, The Netherlands Amsterdam lab EORI number = NL004627672 - VAT number = NL004627672691	https://www.amc.nl/web/laboratory-genetic-metabolic-diseases-lmns/lmns/essential-fatty-acids-pufas.htm gmz_metab@amc.nl	Not stated	Mon / Tue - should not arrive over weekend.	See report for details.	Results returned by post. Enter result as a comment in the PROB set + AMEND. Alternatively upload to PPM+.	4 weeks (website)		
Ethyl glucuronide & ethyl sulphate	EGLUR & SA1R	Urine. Must be frozen on day of collection.		Frozen - do not send until asked. Store long-term in EGLU box at Carys' request. Samples may also be stored at block 46.	Courier on dry ice	Yes. Test only available to the liver transplant team. Agreement to pay for onemonth. Ask Carys Lippiatt or Liz Fox to vet.	Synnovis > was Viapath (King's College Hospital London)	Biochemistry (metabolic laboratory), Ground Floor Bessemer Wing, King's College Hospital Denmark Hill, London SE5 8RS	Results/customer services: 0204 5137300 (option 2) Metabolic lab: 020 3299 4128 Duty Scientist: 0203 3299 0359 Reference laboratory: 020 3299 4107 customerservices@synnovis.co.uk			EIG: <200 ug/L EIS: <100 ug/L	reports should be emailed to carys.lippiatt@nhs.net and elizabeth.fox@nhs.net	This sample was analysed at: Viapath, King's College Hospital, London.	10 days	
Ethylene glycol	EGLYR, also adds SA1R Superset LELGY - adds EGLYR & SA1R Superset JEGLY - adds EGLYR & JCHM1L	Preferred sample = fluoride oxalate plasma or EDTA plasma. Serum and whole blood accepted.	0.5 mL	fridge	TAXI, DIRECT FROM SUJH OR LGI Can be sent first class post (or ambient courier if not urgent).	Yes - vetting by DB required. If out of hours, discuss with on-call consultant.	Birmingham City Hospital or Sheffield toxicology lab (not currently used, please send to Birmingham).	Sheffield: Toxicology Laboratory Northern General Hospital Herries Road Sheffield S5 7AU Birmingham: Blood Bank Door (Ring Bell Pathology Department, Toxicology Laboratory, City Hospital, Dudley Road, Birmingham B18 7QH	Sheffield: Dr Loraine Bunt or Mr Chris Newton: 0114 2267240 Birmingham: info@cityassays.org.uk Dr Loreta Ford (Consultant) 0121 507 6026, toxicology lab 0121 507 4136 general lab enquiries 0121 507 5348, swth.toxicology@nhs.net andrew.whiles@nhs.net (senior BMS) Out of hours, call consultant via switchboard 0121 5543801.	Should be available 24/7. If out of hours, contact the on-call Consultant Biochemist at Birmingham via switchboard.	Send upon arrival 24/7 after discussion with the Duty Biochemist / on-call Consultant.	reported in mg/dL and mg/L < 25 mg/L	Result will be phoned by Birmingham lab, and should be reported urgently by Duty Biochemist / on-call consultant who should call the requesting location with the result. Results also returned by email (pdf attachment) to the Duty Biochemist.	NONTE Birmingham - 2h from sample received.		
Ethylene glycol (Birmingham heartlands) Please do not use							Birmingham City Hospital or Sheffield toxicology lab (not currently used, please send to Birmingham).						ethylene glycol mg/L (LoQ) diethylene glycol mg/L (LoQ 50 mg/L)			
Etonogestrel	Book in as PROB1L (comment NRSOT) & SA1R	2 plain serum tubes without gel or clot activator.	3 mL serum	Store at ambient temp for 30 min to allow coagulation. Centrifuge within 30-60 min of sampling, then separate and freeze serum at -20. Label with patient initials, DOB, sample time and date	World courier, on dry ice, organised by MSD. Must be sent with MSD case report form and Columbia university medical center requisition form and request form with details of requesting clinician. Mark shipment documents with 'non-infectious human serum sample for in vitro determination, no commercial value'	No, but please make DB aware of any requests.							Report as a comment on PROB set + AMEND.			
Fabry screen	FBRY1R Superset LFBRY - adds FBRY1R only Superset JFBRY - adds FBRY1R only	dried blood spot (BSD) - can spot from EDTA whole blood (using squeeze pipette, one hanging drop in each circle). Need special card, order from www.medisa.com . Must be spotted out within 2 days. (ICE request is for a dried blood spot)	NA	Ambient (dried blood spot)	First class post (ambient)	Send all	Willink	Willink Biochemical Genetics Laboratory, Manchester Centre for Genomic Medicine, 6th floor, post 1, St Mary's Hospital, Oxford Road, Manchester, M13 9WL	Duty Biochemist at Willink - 0161 7018612 Willink lab 0161 7012306 or 0161 7012137/8 Enquiries for copy reports: mt.willink-enquiries@nhs.net	Assay run weekly, usually Tue or Wed		blood spot - galactosidase 6.3 - 47.0 pmol/punch/hour	Results returned by post. Report results on telepath (enter alpha glucosidase result as a reference enzyme in a comment).	Test: Bloodspot Fabry Screen. This sample was analysed at: Willink Unit, Royal Manchester Children's Hospital	@FAB or ZB0730 - Test: Bloodspot Fabry Screen	4 weeks. Longer for females.
Fibroblast growth factor 23 (FGF23, FGF-23) C-terminal (For routine use)	FGF1R	EDTA plasma - separate within 8 hours	270 uL	freezer	Courier on dry ice	Yes - vetting by DB required. This is the preferred front line test for FGF3 as is more stable but of limited use in CKD stage 3 and above due to reduced renal clearance. Intact should be used in patients with CKD3+	Norfolk & Norwich University Hospital (Eastern Pathology Alliance)	Eastern Pathology Alliance, Laboratory Medicine East Block, Level 1 Norfolk & Norwich University NHS Foundation Trust Colney Lane Norwich NR4 7UY	Hospital switchboard 01603 286286 Biochemistry lab 01603 286529 Endocrinology lab 01603 289419 Allison.chipchase@nmuh.nhs.uk (secure), 01603 287945 charlotte.stokes@nhs.net susanne.mcmurray@nhs.net holie.barrett@nhs.net (trainee BMS in Endo) Duty Biochemist: 01603 546595 or email nu-tr.nhuhdutybiochemist@nhs.net			<100 RU/mL	Results returned by post. Enter in telepath.	4-6 weeks (user manual)		
Fibroblast growth factor 23 (FGF23, FGF-23) Intact (Preferred in patients with CKD3+)	FGF1 > expands to PROB1L - SA1R	EDTA plasma - separate and freeze within 30-60 min	0.6 mL	freezer	Courier on dry ice	Yes - vetting by DB required. Only used in patients with CKD stage 3 or above as is less affected by reduced renal clearance but is much more labile.	Norfolk & Norwich University Hospital (Eastern Pathology Alliance)	Eastern Pathology Alliance, Laboratory Medicine East Block, Level 1 Norfolk & Norwich University NHS Foundation Trust Colney Lane Norwich NR4 7UY	Hospital switchboard 01603 286286 Biochemistry lab 01603 286529 Endocrinology lab 01603 289419 Allison.chipchase@nmuh.nhs.uk (secure), 01603 287945 charlotte.stokes@nhs.net susanne.mcmurray@nhs.net holie.barrett@nhs.net (trainee BMS in Endo) Duty Biochemist: 01603 546595 or email nu-tr.nhuhdutybiochemist@nhs.net			33-110 pg/mL	Results returned by post. Enter in telepath.	This sample was analysed at: Sample analysed at Norfolk and Norwich University Hospital This assay is not UKAS-accredited.	4 weeks (user manual)	
Flecainide	Superset codes LFLEC / JFLEC FLEC2R - adds SA1R	EDTA plasma	1 mL	freezer	First class post (ambient)	Yes - vetting by DB required.	Cardiff toxicology Laboratories	Cardiff Toxicology Laboratory, 4th floor Routeledge Academic Centre University Hospital Llandough Penlan Road, Llandough CF64 2XX	Results Enquiries: 029 2071 6894 Lab number 02021 62864 Office manager = Mrs Emma Taylor, 02920 718894, emma.taylor@wales.nhs.uk Mrs Joanne Rogers, Joanne.rogers@wales.nhs.uk www.cfslabs.co.uk	Send upon arrival, Mon - Thurs		0.15 - 0.9 mg/L	Results returned by post. Enter in telepath.	7 days (website & letter)		
Free Fatty acids and beta-hydroxybutyrate	FFAP2R Superset LFFAP - adds FFAP2R & SA1R Superset JFFAP - adds FFAP2R & JCHM2L	Fluoride oxalate plasma or serum. Lithium heparin plasma can be used for BHS only. Samples which haven't been frozen immediately (up to a day later) are acceptable.	0.5 mL	freezer	Courier, on dry ice FFA: Frozen plasma posted at ambient temp stable for 24hrs (RHOG stable for several days). Do not send for STP766 DAS Study / STP926 Bump Study until further notice.	Yes - vetting by DB required. Send for research studies only - not for investigation of cause of hypoglycaemia since TAT too long to help with immediate management. Dried blood spot for acylcarnitines should be requested for FFAOD. Do not send for STP766 DAS Study / STP926 Bump Study until further notice.	Edinburgh Royal Infirmary	Department of Blood Sciences Royal Infirmary of Edinburgh 51 Little France Crescent Old Dalkeith Road Edinburgh EH16 4SA	Duty Biochemist: 0131 242 8978 Laboratory Results: 0131 242 8806 mike.craze@nhslothian.scot.nhs.uk BiochemAdvice@nhslothian.scot.nhs.uk	Send upon arrival, Mon-Thurs		FFA: 0.1 - 0.6 mmol/L BOHB: < 0.4 mmol/L FFA/HOB Ratio 0 - 1.0 Will be reported with an interpretive comment.	Results returned by post. Enter in telepath.	This sample was analysed at: Clinical Biochemistry, Royal Infirmary of Edinburgh	5 days (website & letter)	
Free PSA index	PSAF1R & SA1R	serum.	2 mL	fridge	First class post (ambient)	Yes - vetting by DB required.	Sheffield Northern General Hospital	Department of Immunology, Laboratory Medicine Centre, Northern General Hospital, Herries Road, Sheffield, S5 7AU	0114 271 5552	Daily	Send upon arrival, Mon - Thurs	> 12%	Results returned by post. Enter in telepath.	2 working days		
Free T3 (FT3)	FT32R, Superset JFT3R adds FT32R & JCHM1L & SA1R. Superset LFT3R adds FT32R & SA1R	serum	1 mL	fridge	Trust transport, room temp	Send all study samples. Otherwise, vetting required.	Pinderfields	Blood Sciences Department Pathology Pinderfields Hospital Aberford Road Wakefield WF1 4DG	results available on ICE OpenNet 01924 317093 (biochemistry lab) 01924 543036 (clinical scientists team) myh-tr.pathologyreference@nhs.net holly.rowe@nhs.net (Pathology secretary)	Available 24/7	Send upon arrival, Mon - Thurs	3.1 - 6.8 pmol/L	Results returned by post. Also available on ICE OpenNet. Report results on telepath.	This sample was analysed at: Biochemistry Dept, Pinderfield Hospital, Wakefield.	T3 - T3 thyrotoxicosis	24h
Fructosamine	FRUC1R Superset LFRUC adds FRUC1R & SA1R Superset JFRUC adds FRUC1R & JCHM1L	serum		fridge	First class post (ambient)	Yes - vetting by DB required.	Hull	Blood Sciences Pathology Building Hull Royal Infirmary Axtel Road Hull HU3 2JZ	Hull phone no 01482 607772 Rachel.wilmot@hey.nhs.uk (Consultant) thomas.lang1@nhs.net for copy reports.	Run weekly but not on a specific day. No weekend service.		151 - 300 pmol/L. No RR for children. Telepath incorrectly stated 122 - 235 - changed 7/7/20.	Results returned by post. Report results on telepath. Please type the predicted HbA1c range as a comment.	The predicted HbA1c range is a value-added calculation which should only be used as an approximate guide AND in association with other measures of glycaemic control. It should not be used in isolation or in preference to the fructosamine result. This sample was analysed at: The Blood Sciences Laboratory, Hull Royal Infirmary Please add the predicted HbA1c range as freetext.	2 weeks (letter) Median total TAT in 2020 was 19 days.	
Gabapentin (Neurontin)	GPNT2R & SA1R	serum or lithium heparin plasma. Trough sample.	50 uL	fridge	First class post (ambient)	Yes - vetting by DB required.	Birmingham Heartlands	Biochemistry lab (toxicology section) Birmingham Heartlands Hospital Bordesley Green Road Bordesley Green East Birmingham B9 5SS Switchboard: 0121 424 2000 Biochemistry: 0121 424 3242 or 0121 424 1392	http://helfpathology.com/item/gabapentin-neurontin.html			2 - 20 NB need to check, telepath states ug/L, website states mg/L.	Results returned by post. Enter in telepath.	This sample was analysed at: Uni. Hospitals Birmingham NHS FT, Heartlands Hospital- Chemistry	5 working days	
Galactitol (urine)	GATU1R (adds SA1R)	urine (random)	5 mL	Frozen	First class post (ambient)	Yes - vetting by DB required.	Bristol Southmead Hospital	Department of Biochemistry, Southmead Hospital, Southmead Road, Westbury on Trym, Bristol, BS10 2NB	Blood Sciences helpline: 0117 4148383 (option 3) maryam.khan2@nhs.net (Principal clinical scientist)	Send upon arrival, Mon - Thur		< 3m: 3 - 80 umol/mmol creatinine 3-12m: 10 - 65 umol/mmol creatinine 1y: 6 - 22 umol/mmol creatinine 2-5y: 3 - 17 umol/mmol creatinine 6-14y: 2 - 10 umol/mmol creatinine 14+ : 2 - 4 umol/mmol creatinine RR may be programmed incorrectly into telepath, must check and report as a comment if discrepant.	Results returned by post. Enter in telepath.	This sample was analysed at Clinical Biochemistry Dept, Southmead Hospital, Bristol This assay is not UKAS-accredited.	4 weeks	
Galactokinase	GALK1R (adds SA1R)	lithium heparin whole blood. Do not centrifuge. Collect Mon - Wed. MUST be received within 24h of collection.	1 mL	fridge	courier, ambient. Phone lab to let them know sample is coming.	Yes (if within hours)	Bristol Southmead Hospital	Department of Biochemistry Southmead Hospital Southmead Road Westbury on Trym Bristol BS10 2NB	Blood Sciences helpline: 0117 4148383 (option 3) maryam.khan2@nhs.net (Principal clinical scientist)	Send upon arrival, Mon - Thur. Do not collect on Fri.		0-6 months: 3.7 - 9.0 >6 months: 1.5 - 4.0 Units: umol galactose converted/hr/gHb (new ranges from 4/1/21 with new method)	Results returned by post. Enter in telepath.	This sample was analysed at Clinical Biochemistry Dept, Southmead Hospital, Bristol	4 weeks	

Galactose-1-phosphate	GA1P1R & SA1R	lithium heparin whole blood (do not spin or freeze) Get tubes cannot be used. Must be received within 24h of collection. If this is not possible, cells can be washed and sent frozen.	1 mL	room temperature	courier - to reach Birmingham within 24h of collection	Yes - vetting by DB required.	Birmingham Children's Hospital	Newborn screening and biochemical genetics department Birmingham Children's Hospital Steelhouse Lane Birmingham B4 6NH	0121 333 9935 (Biochem) bwc.biochem@nhs.net (DB email) marjanne.preece@nhs.net (Consultant for metabolic lab) 01213339942 (MD Duty BMS) 0778528617 (MB Duty Biochemist)	Send asap, see left.	umol/L. telepath set up with units of umol/L Hb interpretation provided with report. Galactose-1-phosphate is not detected in normal samples. In treated galactosaemias the concentrations should be <150 µmol/l and <0.60 µmol/L Hb. Untreated patients have much higher concentrations sometimes greater than 1000 µmol/L. In patients with acute liver failure galactose-1-phosphate may be detected at low concentrations (10-20µmol/L)	Results returned by post. Enter in telepath.	The acceptable level for Galactosaemic on Galactose free diet is less than 0.60 umol/L Hb. This sample was analysed at: Clinical Biochemistry Dept, Southmead Hospital, Bristol	15 days (letter 2022)		
Gamma-hydroxybutyrate (GHB) Not usually sent since we do not have chain of custody for forensic samples	UGHB1R - does not add SA1R. No supersets	EDTA plasma or serum (preferably gel-free), urine	0.5 mL	fridge / ambient	First class post (ambient)	Yes - vetting by DB required.	Birmingham City Hospital (part of Sandwell and West Birmingham)	Toxicology Laboratory, City Hospital, Dudley Road, Birmingham B18 7QH	toxicology lab 0121 507 4138		LoQ < 10 mg/L	Results emailed as a PDF attachment to the Duty Biochemist. Report results on telepath.	This sample was analysed at: Regional Toxicology Laboratory, City Hospital, Birmingham	2-3 working days		
Gastrin	GAST1R Superset LGAST - adds GAST1R & SA1R Superset JGAST - adds GAST1R & JCHM2L	EDTA plasma. Must be rushed to lab within 15 min of collection and centrifuged. Does not need refrigerated centrifuge as long as the plasma is separated and frozen immediately. (checked with referral lab Feb 2019). Should be collected after overnight fast. Lithium heparin plasma is also acceptable. Send if < 20 min.	0.5 mL	freezer	Courier on dry ice	Yes - vetting by DB required. Should be booked in within 15 min of collection (allow up to 20 min)	Charing Cross (NW London Pathology)	Central Specimen Reception, 1st Floor Laboratory Block, North West London Pathology, Charing Cross Hospital, Fulham Palace Road, London, W6 8RF	0203 313 3949 for gut hormone lab 0203 313 6911 Paul.bech@nhs.net susan.williams33@nhs.net For clinical enquiries, trisa.tan@nhs.net http://pathology.imperial.nhs.uk/	Send upon arrival, Mon-Thur.	gastrin < 40 pmol/L	Results returned by post. Enter in telepath.	This sample was analysed at: ICSM Endocrine Unit, Hammersmith Hospital, London	GUTH3 - Assuming normal renal function and nil treatment, gastrin is raised. Conditions such as atrophic gastritis, achlorhydria, and proton pump inhibitor therapy may be associated with raised gastrin levels. Therefore, fasting gastrin alone is not sufficient for diagnosis of gastrinoma. If clinical signs and symptoms are suggestive of gastrinoma, please consider gastric output studies to confirm diagnosis.	21 days (letter)	
Gut hormones	GUTH3R Superset LGUTH adds GUTH3R & SA1R Superset JGUTH adds GUTH3R & JCHM2L	EDTA plasma. Must be rushed to lab within 15 min of collection and centrifuged. Does not need refrigerated centrifuge as long as the plasma is separated and frozen immediately. (checked with referral lab Feb 2019). Should be collected after overnight fast. Lithium heparin plasma is also acceptable. Send if < 20 min. Do not send over bank holidays or over the Christmas period.	3 mL	freezer	Courier on dry ice	Yes - vetting by DB required. Should be booked in within 15 min of collection (allow up to 20 min)	Charing Cross (NW London Pathology)	Central Specimen Reception, 1st Floor Laboratory Block, North West London Pathology, Charing Cross Hospital, Fulham Palace Road, London, W6 8RF	0203 313 3949 for gut hormone lab 0203 313 6911 Paul.bech@nhs.net susan.williams33@nhs.net For clinical enquiries, trisa.tan@nhs.net http://pathology.imperial.nhs.uk/	Thursday Monday	VIP < 30 pmol/L PP < 300 pmol/L gastrin < 40 pmol/L glucagon < 50 pmol/L CART < 130 pmol/L somatostatin < 150 pmol/L chromogranin A < 60 pmol/L chromogranin B < 150 pmol/L	Results returned by post. Enter in telepath.	This sample was analysed at: ICSM Endocrine Unit, Hammersmith Hospital, London	GUTH1 - Within normal limits. GUTH2 - Assuming normal renal function and nil treatment steroids, glucagon is raised. GUTH3 - Assuming normal renal function and nil treatment, gastrin is raised. Conditions such as atrophic gastritis, achlorhydria, and proton pump inhibitor therapy may be associated with raised gastrin levels. Therefore, fasting gastrin alone is not sufficient for diagnosis of gastrinoma. If clinical signs and symptoms are suggestive of gastrinoma, please consider gastric output studies to confirm diagnosis.	21 days (letter)	
Heparin-induced thrombocytopenia (HIT) ELISA PF4 assay Specialist coagulation department	VITTTU & SA1R	Specialist coagulation (SLM) will sort these samples.														
Hexosaminidase A&B (Tay Sachs and Sandhoff's disease)	BHXA1R	EDTA whole blood. Collect mon - wed only.	5 mL	fridge	first class post. Must reach Willink within 72h of collection.	Yes - vetting by DB required.	Willink	Willink Biochemical Genetics Laboratory, Manchester Centre for Genomic Medicine, 6th floor, pool 1, St Mary's Hospital, Oxford Road, Manchester, M13 9WL	Duty Biochemist at Willink - 0161 7018612 Willink lab 0161 7012306 Enquiries for copy reports: mft.willink-enquiries@nhs.net		Hex A: Plasma 50 – 250 nmol/mi/hr Hex A & B: Plasma 600 – 3500 nmol/mi/hr	Results returned by post. Enter in telepath.		2 weeks		
Human chorionic gonadotrophin (HCG, serum reference assay)	HGCR1R - does not add SA1R. No supersets	serum (with or with gel acceptable)	1 mL	fridge (stable for several weeks)	First class post (ambient, send ASAP)	send all	Charing Cross (NW London Pathology)	Central Specimen Reception, 1st Floor Laboratory Block, North West London Pathology, Charing Cross Hospital, Fulham Palace Road, London, W6 8RF	General enquiries 020 8383 5906 Lab 020 331 33949 Duty Biochemist 020 3313 0348 Oncology lab 020 3311 5185 Dr Edmund Wilkes (Consultant) edmund.wilkes@nhs.net	Send upon arrival, Mon - Thur < 4 JUL		Results returned by post. Enter in telepath.	Measured by an "in house" RIA reference assay at: Medical Oncology, Charing Cross Hospital, London	4 days (letter)		
Human chorionic gonadotrophin (HCG, serum, molar)	HCGM1R - also adds SA1R. No supersets	urine or serum		fridge	First class post (ambient)	Yes - vetting by DB required.	Sheffield Royal Hallamshire Hospital	Department of Clinical Chemistry, Royal Hallamshire Hospital, Glossop Road, Sheffield, S10 2JF		Send upon arrival, Mon - Thurs		Results returned by post. Enter in telepath.	HCG measured by DPC Immulite 2-site assay. This sample was analysed at: Clinical Chemistry, Royal Hallamshire Hospital, Sheffield	5 days		
Inhibin B	INBB2R - also adds SA1R. No supersets	serum (with or without gel acceptable)	0.5 mL	fridge - avoid repeated freeze thaw cycles (can store in fridge and send ambient only if likely to be received in Charing Cross within 3 days)	Courier on dry ice	Yes - vetting by DB required.	Charing Cross (NW London Pathology)	Central Specimen Reception, 1st Floor Laboratory Block, North West London Pathology, Charing Cross Hospital, Fulham Palace Road, London, W6 8RF	General enquiries 020 8383 5906 Lab 020 331 33949 Duty Biochemist 020 3313 0348 Oncology lab 020 3311 5185 Dr Edmund Wilkes (Consultant) edmund.wilkes@nhs.net	Send upon arrival, Mon - Thurs	Adult male 25 - 325 ng/L Adult female < 341 ng/L Day 3 of cycle < 273 ng/L Post-menopausal < 5 ng/L	Results returned by post. Enter in telepath.	Female: Day 3 of cycle: <273 ng/L Post Menopausal -< 5 ng/L This sample was analysed at: Clinical Chemistry, Charing Cross Hospital, London	4 weeks		
Insulin & C-peptide - **may be requested as urgent analysis, see referrals or DB SOP for protocol**.	Superset LINSL - adds INSL1R, SA1R and ALQ152 Superset JINSL - adds INSL1R, JCHM2L and ALQ152	Serum Lith hep plasma also accepted. Separate and freeze within an hour. If longer, note on request form. If for the differential diagnosis of hypoglycaemia, must be collected during hypoglycaemia (glucose < 3.0 mmol/L) In haemolysed samples, insulin will be artefactually lower.	0.2 mL	frozen	Courier on dry ice	Yes - vetting by DB required. Only available for the differential diagnosis of hypoglycaemia or for paediatric hospital (regardless of glucose result), or for study. Check for delay in sample receipt! Do not send for STP766 DAS Study / STP622 (Amani study) / STP983 Lean Study / STP926 Bump Study until further notice.	Guildford	SAS Peptide Hormones section Clinical Laboratory Level B Royal Surrey Hospital Egerton Road Guildford Surrey GU2 7XX	http://www.nhs.uk/pathology/fph.nhs.uk 01483 406715 enquiries: rch.peptideslab@nhs.net business manager = berni.mallo@nhs.net Lisa Boyle BMS2 Dr Owen Weir Consultant Clinical Scientist	run twice a week, usually on Wed & Fri. Samples must arrive by 10am cut off	Mondays and Wednesdays	insulin pmol/L, no RR quoted C-peptide pmol/L, no RR quoted glucose mmol/L, no RR quoted Interpretive comment will be included with report Result interpretation dependant on glucose level	Results emailed to DB inbox. Report results on telepath. Please enter any interpretive comment as a free text comment.	This sample was analysed at: Guildford SAS Hormone Centre, Royal Surrey County Hospital	INSL1R - Glucose level insufficiently low to warrant this analysis	3-5 days
Insulin antibodies	IINS Expands to INSL1, IT541L and SHEP1L	Serum Separate and freeze as soon as possible (e.g. <1h)	0.1 mL	frozen	First class post or on dry ice with samples for insulin & C-peptide.	Yes - vetting by DB required.	Guildford	SAS Peptide Hormones section Clinical Laboratory Level B Royal Surrey Hospital Egerton Road Guildford Surrey GU2 7XX	http://www.nhs.uk/pathology/fph.nhs.uk 01483 406715 enquiries: rch.peptideslab@nhs.net business manager = berni.mallo@nhs.net Lisa Boyle BMS2 Dr Owen Weir Consultant Clinical Scientist	Send Mon or Wed with samples for insulin & C-peptide.	Reported as positive, negative or indeterminate. Interpretation provided on report.	Results emailed to DB inbox.		5-10 working days		
Insulin-like growth factor 2 (IGF-2)	Superset LIGF2 - adds IGFP1R & SA1R Superset JIGF2 - adds IGFP1R & JCHM2L	Serum Separate as soon as possible (e.g. <1h) Sample from a hypoglycaemic episode preferred	0.2 mL min (preferably 0.5 mL)	frozen	First class post or on dry ice with samples for insulin & C-peptide.	Yes - vetting by DB required.	Guildford	SAS Peptide Hormones section Clinical Laboratory Level B Royal Surrey Hospital Egerton Road Guildford Surrey GU2 7XX	http://www.nhs.uk/pathology/fph.nhs.uk 01483 406715 enquiries: rch.peptideslab@nhs.net business manager = berni.mallo@nhs.net Lisa Boyle BMS2 Dr Owen Weir Consultant Clinical Scientist	Send Mon or Wed with samples for insulin & C-peptide.	Units: nmol/L IGF-II to IGF-I ratio >10 indicative of non-islet cell tumour as cause of hypoglycaemia.	Results returned by post. Enter in telepath.	This sample was analysed at: Guildford SAS Hormone Centre, Royal Surrey County Hospital	10-14 working days		
Insulin-like growth factor binding protein 3 (IGF-BP3)	Superset LIGFP - adds IGFP1R & SA1R Superset JIGFP - adds IGFP1R & JCHM2L (IGFP1R - also adds SA1R)	Serum. Separate as soon as possible (e.g. <1h) Li Hep plasma also accepted	0.2 mL	frozen	First class post or on dry ice with samples for insulin & C-peptide.	Yes - vetting by DB required.	Guildford	SAS Peptide Hormones section Clinical Laboratory Level B Royal Surrey Hospital Egerton Road Guildford Surrey GU2 7XX	http://www.nhs.uk/pathology/fph.nhs.uk 01483 406715 enquiries: rch.peptideslab@nhs.net business manager = berni.mallo@nhs.net Lisa Boyle BMS2 Dr Owen Weir Consultant Clinical Scientist	Send Mon or Wed with samples for insulin & C-peptide.	Units: mg/L Age- and gender-specific. To be checked and typed onto report as a comment if incorrect. See list of RRs in IG-Blood Sciences/Referred Tests Database. Other information or at https://www.berkshireandwestsurrey.pathology.nhs.uk/IGF-Service/Test-Directory/Biochemistry/Details.asp?ID=151	Results emailed to DB inbox. Report results on telepath. Include reference range as a free text comment please. See left.	This sample was analysed at: Guildford SAS Hormone Centre, Royal Surrey County Hospital	3-5 working days		
Lamotrigine	LLAMO / LLAMO SUPRETS LAMO2R - adds SA1R	EDTA plasma Trough sample	1 mL	frozen	First class post (ambient)	Yes - vetting by DB required.	Cardiff toxicology Laboratories	Cardiff Toxicology Laboratory, 4th floor Routledge Academic Centre University Hospital Llandough Penlan Road, Llandough CF64 2XX	Results Enquiries: 029 2071 6894 Lab number 02921 826894 Office manager = Mrs Emma Taylor, 02920 716894, emma.taylor@wales.nhs.uk Mrs Joanne Rogers, joanne.rogers@wales.nhs.uk www.ctlabs.co.uk		3 - 15 mg/L	Results returned by post. Report results on telepath.	This sample was analysed at: Therapeutics & Toxicology Centre, Cardiff	7 days (letter & website)		
Leptin	PROB1L (comment NRSOT) & SA1R	serum, lithium heparin plasma or EDTA plasma		frozen	Courier on dry ice	Yes - vetting by DB required.	Cambridge Addenbrookes	CUH Pathology reception, Pathology Reception, Level 4, Lab Block, Addenbrookes Hospital, Hills Road, Cambridge, CB50QQ	Mr Keith Burling, CBAL director, keith.burling@addenbrookes.nhs.uk Mr Peter Barker, CBAL Senior Biomedical Scientist, peter.barker@addenbrookes.nhs.uk		ng/ml See document from CBAL for reference ranges	Results returned by post. Report as a comment on PROB set + AMEND		28 days		
Levetiracetam (Kepra)	LEVE1R / RLEVE - also adds SA1R. No supersets	EDTA plasma Trough sample	1 mL	frozen	First class post (ambient)	Send all	Cardiff toxicology Laboratories	Cardiff Toxicology Laboratory, 4th floor Routledge Academic Centre University Hospital Llandough Penlan Road, Llandough CF64 2XX	Results Enquiries: 029 2071 6894 Lab number 02921 826894 Office manager = Mrs Emma Taylor, 02920 716894, emma.taylor@wales.nhs.uk Mrs Joanne Rogers, joanne.rogers@wales.nhs.uk www.ctlabs.co.uk	Send upon arrival, Mon-Thurs	12.0 - 46.0 mg/L	Results returned by post. Report results on telepath.	This sample was analysed at: Toxicology Laboratory, Llandough Hospital, Penarth	7 days (letter & website)		
Lipase	LIPS2R Superset LLIPS - adds LIPF1R and SA1R Superset JIPS - adds LIPS2R & JCHM1L	serum	0.5 mL	fridge	Trust transport, room temp	Yes - vetting by DB required. OK to send for research studies and for patients with clinical details pancreatic transplant.	Pinderfields	Blood Sciences Department Pathology Pinderfields Hospital Aberford Road Wakefield WF1 4DG	results available on ICE OpenNet 01924 317093 (biochemistry lab) 01924 543036 (clinical scientists team) myn-h.pathology.referrals@nhs.net holly.rowell@nhs.net (Pathology secretary)	Available 24/7	Send upon arrival, Mon - Thurs	13 - 60 U/L	Results returned by post. Also available on ICE OpenNet. Report results on telepath.	This sample was analysed at: Biochemistry Dept, Pinderfield Hospital, Wakefield	24h	
Lipid fractionation (aka lipoprotein fractionation, beta quantification, betaquant, lipid ultracentrifugation)	Superset LLIPF - adds LIPF1R and SA1R Superset JIPF - adds LIPF1R and JCHM1L	EDTA plasma. Take sample after 12-14h overnight fast. DO NOT FREEZE! Stable once separated for 7 days at 4-8 C. Unseparated 3 days.	1.5 mL	fridge	First class post (ambient)	Do not send if < 1 mL.	Newcastle Royal Victoria	Department of Blood Sciences Level 3 Leazes Wing Royal Victoria Infirmary Queen Victoria Road Newcastle upon Tyne NE1 4LP	0191 28 29719 (Royal Victoria Blood Sciences) 0191 24 48889 (Duty Biochemist) 0191 282 4025 (Endocrine lab) num.dutybiochemist@nhs.net	assayed weekly	Send upon arrival, Mon - Thurs	NA. An interpretive comment will be included with each report.	Results returned by post. Report results on telepath.	This sample was analysed at: Blood Sciences, Freeman Hospital, Newcastle (have asked DM to amend to Royal Victoria)	LIPF1 - Increase in pre-beta lipoproteins (VLDL) LIPF2 - No beta-VLDL detected LIPF3 - Not consistent with remnant hyperlipidaemia (Type III) LIPF4 - Consistent with Type IV hyperlipidaemia unless modified LIPF5 - by treatment LIPF6 - Consistent with Type V hyperlipidaemia unless modified LIPF7 - by treatment LIPF8 - Small amount of chylomicrons present	4 weeks (website)

Lipoprotein (a) Lp(a)	Supersets: LUPA / JUPA (LRA1R - does not add SA1R)	Serum. Lithium heparin or EDTA plasma also acceptable. Separated serum stable for 7 days at 20-25°C and 4-8°C. Store sample at -70°C if not analysed within 7 days.	1 mL 0.5mL Paeds	fridge	First class post (ambient)	Yes - vetting by DB required.	Newcastle Royal Victoria	Department of Blood Sciences Level 3 Leazes Wing Royal Victoria Infirmary Queen Victoria Road Newcastle upon Tyne NE1 4LP	0191 282 9719 (Royal Victoria) 0191 24 48889 (Duty Biochemist) 0191 282 4025 (Endocrine lab) num.dutybiochemist@nhs.net	Daily	32-90 nmol/L - minor increase in cardiovascular risk 91-200 nmol/L - moderate increase in cardiovascular risk 201-400 nmol/L - highly increased cardiovascular risk ≥400 nmol/L - very highly increased cardiovascular risk	Results returned by post. Report results on telepath.	Lipoprotein (a): 32-90 nmol/L - minor increase in cardiovascular risk 91-200 nmol/L - moderate increase in cardiovascular risk 201-400 nmol/L - highly increased cardiovascular risk ≥400 nmol/L - very highly increased cardiovascular risk This sample was analysed at: SAS, Clinical Biochemistry, Royal Victoria Infirmary, Newcastle	1 day (website)	
Lysosomal acid lipase (LAL) deficiency screen	LALD1R & SA1R	dried blood spot (BDS) - can spot using 50 µL of EDTA whole blood, and allow to dry for 4h.	NA	ambient	First class post (ambient)	Yes - vetting by DB required	Glasgow Queen Elizabeth Hospital	Biochemistry Department, SGH laboratory & FM building, Queen Elizabeth University Hospital, 1345 Govan Road, Glasgow, G51 4TF	0141 354 9044	Send upon arrival, Mon - Fri	Results returned by post. Report results on telepath.			6 weeks	
Metanephrines (plasma)	Superset LMADP - adds MADP2R and SA1R Superset JMADP - adds MADP2R & JCHM2L	EDTA plasma. centrifuge, separate and freeze plasma within 30 min of collection. Send if < 40 min. OK for up to 1h if sent on ice. EDTA plasma samples are stable at -20°C to -40°C for at least 6 months.	1 mL	freezer	Courier on dry ice	Yes - vetting by DB required. See pre-analytical requirements.	Newcastle, Freeman Hospital	Department of Blood Sciences Freeman Hospital, Freeman Road, High Heaton, Newcastle upon Tyne, NE7 7DN	0191 244 8889 (Freeman lab) 0191 244 8889 (Duty Biochemist) num.dutybiochemist@nhs.net	Available during full access hours. Assayed as service demands Tuesdays & Thursdays	All in proMLL. Supine (programmed into telepath) NMN < 730, MN < 460, 3MT < 180 Seated NMN < 1180, MN < 510, 3MT < 180 New Oct 2022: <3 m: NMN < 2540, MN < 510, 3MT < 420 3m -< 6m: NMN < 2100, MN < 510, 3MT < 330 6m - 1y: NMN < 1440, MN < 510, 3MT < 245 Needs programming into telepath.	Results returned by post. Report results on telepath. Reference ranges for patients <1 year old should be typed as a comment.	NB Ranges provided are based on samples collected from patients in the recumbent position (post 30min rest) For samples taken in a seated posture reference ranges are NMN <1180 proMLL, MN <510 proMLL, 3MT <180 proMLL. NB this is intentionally different to what is on the Newcastle report.	2 weeks (website)	
Methanol <i>Not available at weekends at Birmingham currently (12/7/22)</i>	MTH1R - also adds SA1R Superset LMTH - adds MTH1R and SA1R Superset JMTH - adds MTH1R and JCHM1L	Fluoride oxalate plasma. Fluoride oxalate whole blood or serum also accepted.	0.5 mL	fridge	taxi, room temp (or first class post if not urgent)	Yes - vetting by DB required. If out of hours, discuss with on-call consultant.	Birmingham City Hospital or Sheffield toxicology lab (working hours but not at the moment)	Sheffield: Toxicology Laboratory Northern General Hospital Herries Road Sheffield S5 7AU Birmingham: Blood Bank Door (Ring Bell) Pathology Department, Toxicology Laboratory, City Hospital, Dudley Road, Birmingham B18 7QH	Sheffield: Dr Lorraine Brunt or Mr Chris Newton: 0114 2257240 Birmingham: info@cyassays.org.uk, Dr Loretta Ford 0121 507 6026, toxicology lab 0121 507 4138, general lab enquiries 0121 507 5348	Should be available 24/7. If out of hours, contact the on-call Consultant Biochemist at Birmingham via switchboard. Send upon arrival 24/7 after discussion with the Duty Biochemist / on-call Consultant.	< 100 mg/L (equivalent to < 10 mg/dL). Need to change units on telepath from mg/dL to mg/L.	Result will be phoned by Birmingham lab, and should be reported urgently by Duty Biochemist / on-call consultant, and phoned to the requesting location. Results are also emailed as a pdf attachment to the Duty Biochemist inbox.	Autocomment re Sheffield has been removed. Currently no autocomment.	Birmingham - 24h, Sheffield - 24h (4h in an emergency)	
Methylated amines	MADU1R & SA1R														
Methylmalonic acid (MMA) - Synnovis (previously Viapath)	MMA1R & SA1R	serum or EDTA plasma	0.5 mL	fridge	First class post (ambient)	Yes - vetting by DB required	Synnovis > was Viapath (St Thomas' Haemostasis and Thrombosis lab)	Nutrition Unit, St Thomas' Hospital, North Wing, 4th floor, Westminster Bridge Road, London SE1 7EH.	0207 18 86815 / 89534 customerservices@synnovis.co.uk		<65 yrs 0-280 nmol/L >65 yrs 0-360 nmol/L no reference range currently programmed in telepath.	Results returned by post. Report results on telepath - add reference range as a comment.	This sample was analysed at: Wilink Unit, Royal Manchester Children's Hospital (need to amend this)	10 days	
Methylmalonic acid (MMA) - Willink - all MMA requests should now be sent to Synnovis (Viapath). DP doing change control.	MMA1R & SA1R	EDTA or lithium heparin plasma. plain urine.	2 mL plasma 2 mL urine	frozen	contact lab prior to sending		Willink	Willink Biochemical Genetics Laboratory, Manchester Centre for Genomic Medicine, 6th floor, pool 1, St Mary's Hospital, Oxford Road, Manchester, M13 9WL	Duty Biochemist at Willink - 0161 7018612 Willink lab 0161 7012306 or 0161 7012137/8 Enquiries for copy reports: mft.willink-enquiries@nhs.net						
Midazolam - assay unavailable	MDZM1R (does not automatically add SA1R)	EDTA plasma, 2 mL. Gel tubes are not suitable.	2 mL	separate plasma and store at -20	First class post (ambient)	Yes - vetting by DB required.	Cardiff toxicology Laboratories	Cardiff Toxicology Laboratory, 4th floor Academic Centre University Hospital Llandough Penlan Road, Llandough CF64 2XX	Results Enquiries: 029 2071 6894 Office manager = Mrs Emma Taylor, 02920 716894, emma.taylor@wales.nhs.uk Mrs Joanne Rogers, Joanne.rogers@wales.nhs.uk www.ctlabs.co.uk		50 - 600 ug/L	NA	2 days (website)		
Mitochondrial studies - will come with form for specialist Newcastle lab - send to Genetics!															
Mitotane	currently booked in under PROBL1 (comment NRSOT) & SA1R	EDTA plasma (gel tubes are not suitable)	1 mL	separate plasma and store at -20	First class post (ambient)	Yes - vetting by DB required.	Cardiff toxicology Laboratories	Cardiff Toxicology Laboratory, 4th floor Routeledge Academic Centre University Hospital Llandough Penlan Road, Llandough CF64 2XX	Results Enquiries: 029 2071 6894 Lab number 02921 826894 Office manager = Mrs Emma Taylor, 02920 716894, emma.taylor@wales.nhs.uk Mrs Joanne Rogers, Joanne.rogers@wales.nhs.uk www.ctlabs.co.uk		14 - 20 mg/L	Results returned by post. Report results on telepath.		7 days (website & letter)	
Mucopolysaccharides / Oligosaccharides / Sialic acid reference assay	MUOL1R	urine		fridge	First class post (ambient)	Yes - contact Rob Barski	Willink	Willink Biochemical Genetics Laboratory, Manchester Centre for Genomic Medicine, 6th floor, pool 1, St Mary's Hospital, Oxford Road, Manchester, M13 9WL	Duty Biochemist at Willink - 0161 7018612 Willink lab 0161 7012306 or 0161 7012137/8 Enquiries for copy reports: mft.willink-enquiries@nhs.net		Mucopolysaccharides (glycosaminoglycans) & sialic acids - provides quantitative analysis. Mucopolysaccharide electrophoresis & oligosaccharides - qualitative analysis. Interpretation provided on report.	Results returned by post. Reports should be emailed to robert.barski@nhs.net and jamesbooth@nhs.net who will report the result.		3 weeks	
Muscle biopsy for respiratory chain enzymes - HISTOPATHOLOGY							Newcastle University	Newcastle Mitochondrial NCG Laboratory, 4th Floor Cookson Building, The Medical School, Newcastle University, Framlington Place, Newcastle Upon Tyne, NE2 4HH	Christopher.kettle@nuth.nhs.uk			NA		8 weeks (56 days)	
Mycophenolate (mycophenolic acid)	MPPA1J & SA1R	EDTA plasma	0.5 mL	fridge	First class post (ambient)		Send to block 46 for referral to Analytical Services International, London	Send to block 46 for referral to Analytical Services International, London Cranmer Terrace London SW17 0RE	laboratory@bioanalytics.co.uk katie.lawlor@bioanalytics.co.uk lewis.couchman@bioanalytics.co.uk 0208 7255345	Send upon arrival	mg/L No therapeutic range provided.	Results are emailed as a pdf attachment to the DB. Email report to carys.lipgatti@nhs.net and jamesbooth@nhs.net who will report the result.	This assay is not UKAS-accredited. Need to add analysis location autocomment	5 days	
Neurone specific enolase (NSE)	Superset LNSE - adds NSE1R and SA1R Superset JNSE - adds NSE1R and JCHM2L	serum - must not be haemolysed	2 mL	fridge	First class post (ambient)	Yes - vetting by DB required.	Sheffield PRU	Immunology / Protein Reference Unit, Northern General Hospital, Herries Road, Sheffield S5 7AU	General enquiries 0114 226 9196 Result enquiries 0114 271 5552 nsv-v.bloodsciences@nhs.net	daily	Send upon arrival, Mon - Thurs	0 - 12.5 ug/L	Results returned by post. Report results on telepath.	Tumour markers are not diagnostic and are of most use in monitoring response to treatment and early detection of relapse. Normal values do NOT exclude malignancy. Quoted ranges are only valid for serum. This sample was analysed at: Protein Reference Unit (PRU), Sheffield	3 working days
Nickel	PROBL1 (comment NRSOT) & SA1R	trace element tube (ball, dark blue top). Centrifuge and transfer plasma into any secondary tube without an O-ring.		fridge	First class post (ambient)	Yes - test not routinely available.	Southampton	Department of clinical biochemistry (ICP-MS lab) Level D Southampton General Hospital Tremona Road Southampton SO16 9YD	0238120-6675 or -6237		1.7 - 22.0 nmol/L	Results returned by post. Report results as a comment on the PROBL set + AMEND			
Nortriptyline (Reported as Nortriptyline + Amitriptyline)	LNATR / JNATR supersets (NTRP2R & SA1R)	EDTA plasma	1 mL	frozen	First class post (ambient)	Yes - vetting by DB required.	Cardiff toxicology Laboratories	Cardiff Toxicology Laboratory, 4th floor Routeledge Academic Centre University Hospital Llandough Penlan Road, Llandough CF64 2XX	Results Enquiries: 029 2071 6894 Lab number 02921 826894 Office manager = Mrs Emma Taylor, 02920 716894, emma.taylor@wales.nhs.uk Mrs Joanne Rogers, Joanne.rogers@wales.nhs.uk www.ctlabs.co.uk	Send upon arrival, Mon - Thur	80 - 200 ug/L (Amitriptyline + Nortriptyline)	Results returned by post. Enter result in telepath.		7 days	
NSAID screen - Cardiff stopped offering this in 2019	NSA1R - also adds SA1R. No supersets	EDTA plasma - confirmed 24/19	2 mL	fridge (or frozen if longer term)	First class post (ambient)	Yes - vetting by DB required.	Cardiff toxicology Laboratories	Cardiff Toxicology Laboratory, 4th floor Academic Centre University Hospital Llandough Penlan Road, Llandough CF64 2XX	Results Enquiries: 029 2071 6894 Office manager = Mrs Emma Taylor, 02920 716894, emma.taylor@wales.nhs.uk Mrs Joanne Rogers, Joanne.rogers@wales.nhs.uk www.ctlabs.co.uk		NA		This sample was analysed at: Cardiff Toxicology Laboratories, Penarth	1 week	
N-telopeptide (NTX)	NTXU1R & SA1R														
Oestradiol (sensitive)	Supersets LOESE / JOESE OESE1J	Serum (or lithium heparin plasma)	0.6 mL	fridge (or frozen if longer term)	First class post (ambient)	Send all	Wythenshawe	Biochemistry Dept Clinical Science Building Wythenshawe Hospital Southmoor Road Manchester M23 9LT	0161 291 5084 0161 291 2126 (enquiries) 0161 291 2136 (Duty Biochemist) mft.biochemistry@wythenshawe@nhs.net (DB email) Duty Biochemist in the first instance: Dr Jo Adaway, Consultant Clinical Scientist	Fortnightly, on a Tuesday	Pre-menopausal adult female 11-969 proMLL Post-menopausal female 7-77 proMLL Adult male 29-154 proMLL	PDF attachment emailed to SLM, Endo Lab, on request. Report result on telepath.	Leeds SAS Steroid Centre (Tel: 0113 20 64717)	8 days	
Olanzapine	OLAN2R - also adds SA1R	EDTA plasma. Collect sample 12h post dose. Separate within 7 h of collection. Protect from light. Serum (gel-free) also acceptable. Trough sample (pre-dose) or minimum 12h post-dose.	0.5 mL	separate plasma and store in the fridge at 4 C	First class post (ambient)	Yes - vetting by DB required.	Birmingham City Hospital (part of Sandwell and West Birmingham)	Department of Clinical Biochemistry, City Hospital, Dudley Road, Birmingham B18 7QH	0121 507 4138 swbh.toxicology@nhs.net http://www.clyassays.org.uk/	Send upon arrival, Mon - Thurs	Maximum drug efficacy 20-40 ug/L Risk of severe toxicity >100 ug/L. Trough specimen taken pre-dose or minimum 12 hrs post dose.	PDF attachment emailed to the Duty Biochemist. Report result on telepath. Check therapeutic range.	This sample was analysed at: Regional Toxicology Laboratory, City Hospital, Birmingham	5 working days	
Oxalate (plasma)	Superset LOXLP - adds OXLP1R & SA1R Superset JOXLP - adds OXLP1R & JCHM2L	EDTA plasma. centrifuge, separate and freeze plasma within 2h. This assay is not for serum samples.	5 mL	Frozen	Courier on dry ice	Yes - vetting by DB required.	HSL analytics (UCLH, Royal Free & TDL)	Health Services Laboratories (HSL) analytics, Specimen reception - Biochemistry, 60 Whitfield Street, London W1T 4EU	020 7307 8400 Robin.Pryke@hslpathology.com biochemistry.helpdesk on 020 344 79405 uoh.enquiry.biochemistry@hsl@nhs.net UCLH.pathology@nhs.net Duty Biochemist@hslpathology.com Simon.Saier@hslpathology.com (Consultant Clinical Scientist)	Send upon arrival, Mon - Thur	< 10 umol/L (NB serum oxalate = 33 umol/L)	Results returned by post. Report result on telepath. Check reference range.	This sample was analysed at: Chemical Pathology, University College Hospital, London	10 days	

Oxcarbazepine / 10-Hydroxycarbazepine	No telepath code - currently booked in as a PROB1L (comment NRSOT) & SA1R	EDTA plasma. Gel tubes are not suitable.	1 mL	separate plasma and store at -20	First class post (ambient)	Yes - vetting by DB required.	Cardiff toxicology Laboratories	Cardiff Toxicology Laboratory, 4th floor, Royal Glamorgan Academic Centre, University Hospital Llandough, Penlan Road, Llandough CF64 2XX	Results Enquiries: 029 2071 6894 Lab number 02921 826894 Office manager - Mrs Emma Taylor, 02920 716894, emma.taylor@wales.nhs.uk Mrs Joanne Rogers, joanne.rogers@wales.nhs.uk www.ctlabs.co.uk	Hydroxycarbazepine: 3 - 35 mg/L	Results returned by post. Report result as a comment on the PROB set + AMEND	7 days (letter & website)			
Oxysterol - available for monitoring. For diagnosis of NPC, oxysterol has been replaced with palmitoyl phosphocholineserine as of 01/10/22.	PROB1L (comment NRSOT) & SA1R	EDTA plasma	2 mL	Separate plasma and freeze at -20 on the same day as collection	Courier on dry ice	Yes - vetting by DB required.	Willink	Willink Biochemical Genetics Laboratory, Manchester Centre for Genomic Medicine, 6th floor, pod 1, St Mary's Hospital, Oxford Road, Manchester, M13 9WL	Duty Biochemist at Willink - 0161 7018612 Willink lab 0161 7012306 or 0161 7012137/8 Enquiries for copy reports: mtf.willink-enquiries@nhs.net james.cooper@mtf.nhs.uk	Normal: 8.1-37.7 ng/ml (95% CI 9.6-37.6) NPC1: 33.3-1170 ng/ml (95% CI 39.3-811.9)	Results returned by post. Report result as a comment on the PROB set + AMEND	4 weeks (lab handbook)			
Palmitoyl phosphocholineserine (PPCS, lysosphingomyelin-508)	PROB1L (comment NRSOT) & SA1R until set up on telepath	EDTA whole blood Stable for at least 1 week in whole blood and at least 2 weeks in separated plasma at ambient temperature	1 mL	fridge	First class post (ambient)	Yes - vetting by Rob Barski required.	Willink	Willink Biochemical Genetics Laboratory, Manchester Centre for Genomic Medicine, 6th floor, pod 1, St Mary's Hospital, Oxford Road, Manchester, M13 9WL	Duty Biochemist at Willink - 0161 7018612 Willink lab 0161 7012306 or 0161 7012137/8 Enquiries for copy reports: mtf.willink-enquiries@nhs.net	1 - 200 ng/ml. Reported to 1 decimal place. Secondary metabolites - Only reported in the event of increased PPCS. Lyso-sphingomyelin - 50 nmol/L (1 dp) (differentiates from ASMD). Hexosyl-sphinganine < 10 nmol/L (1 dp) (differentiates from Gaucher Disease)	Results returned by post. Report result as a comment on the PROB set + AMEND (until telepath set up)	20 working days (4 weeks)			
Paraquat	PQTR & SA1R	Lithium heparin plasma or urine	plasma 10 mL urine 2 mL		discuss with DB	Yes - vetting by DB (or on-call consultant) required.	Sheffield Northern General Hospital Service also offered by Hull and Manchester if required.	Department of Clinical Chemistry Laboratory Medicine Centre (North Lane) Northern General Hospital Herries Road Sheffield S5 7AU	0114 271 4716	Discuss with DB / on call consultant	Results returned by post. Report result on telepath.	2 days (48h)			
Parathyroid hormone related protein (PTHrp)	PTH2R. No supersets. Does not add SA1R	Must be discussed in advance with the Duty Biochemist. Collect within normal working hours. Prior to taking sample, collect a special EDTA tube containing protease inhibitor (aprotinin, aka trasylol) from Endocrinology lab, block 46, S.U.H. 47/143. The sample must be collected into this special tube, and placed on wet ice back to the Endocrinology lab within 30 min. The sample should be booked in by the Endocrinology BMS. Spin a refrigerated centrifuge, separate plasma into a labelled secondary tube and freeze. Add comment on notespad that sample was processed correctly. Scan request card. Send the tube containing frozen plasma on dry ice to LCI specimen reception, marked to store in reference section of freezer.	1 mL	dry ice	Courier on dry ice	Yes - vetting by DB required.	Biomnis	Eurofins Biomnis UK Centre Eurofins Clinical Diagnostics Surrey Research Park 90 Priestley Road Guildford GU2 7AU	JamesKnowles@eurofins.co.uk JonathanPopoola@eurofins.com customerservice@eurofins-biomnis.com Laboratory: 01483 450388 Link for Biomnis results: https://results.biomnis.ie Username: sgibbons Password: Leedspath1	<1.4 pmol/L	Result will be retrieved by Stephen Gibbons or Eleanor McLaughlin from online results server. Link for Biomnis results: https://results.biomnis.ie Username: sgibbons Password: Leedspath1 Report results on telepath.	New reference range in use from 10/06/2021. This sample was analysed at : Biomnis, Paris, France	2 weeks		
Phenylalanine loading test	PHL1R & SA1R	Heparin plasma taken at baseline, and 1, 2, 4 and 6h post dose.		Separate plasma and freeze	Courier on dry ice	No	Neurometabolic unit, Institute of Neurology, London	Neurometabolic Unit 6th floor Institute of Neurology Queen Square House Queen Square London WC1N 3BG	0203 448 3818 simon.hales@nhs.net uch.enquiry.neurometabolic@nhs.net website: https://www.uch.nhs.uk/our-services/ind-service/neurology-and-neurosurgery/neurometabolic-unit	Send upon arrival, Mon - Thurs.	Results returned by post. Report result on telepath.	1 week			
Phospholipase-2 receptor antibodies	SIMM1L - an Immunology test										NA				
Placental alkaline phosphatase (PIALP, serum reference assay)	PAP2R - also adds SA1R	serum (with or without gel acceptable)	1.0 mL	frozen - avoid repeated freeze thaw cycles (can store in fridge and send ambient only if likely to be received in Charing Cross within 3 days).	Courier on dry ice	Send all	Charing Cross (NW London Pathology)	Central Specimen Reception, 1st Floor Laboratory Block, North West London Pathology, Charing Cross Hospital, Fulham Palace Road, London, W6 8RF Dr Edmund Wilkes (Consultant) edmund.wilkes@nhs.net	General enquiries 020 8383 8906 Lab 020 331 33848 Duty Biochemist 020 3313 0348 Oncology lab 020 3311 5185 Dr Edmund Wilkes (Consultant) edmund.wilkes@nhs.net	Send upon arrival, Mon-Thurs	<100 mU/L	Results returned by post. Report result on telepath. This sample was analysed at Medical Oncology, Charing Cross Hospital, London This assay is not UKAS-accredited.	4 weeks		
Plasmalogens	PGEN1R (adds SA1R)	EDTA whole blood (at least 2 mL). Centrifuge then remove and discard plasma & buffy coat. Wash red cell pellet x3 with equal volume of saline. Store packed red cells in fridge and send same day by FCP. If longer, freeze and send by courier on dry ice.	2 mL	fridge	If sample can be sent on the day of collection, send by first class post. Phone lab before sending to let them know. Otherwise, send on dry ice by courier.	yes - vetting by DB required.	Sheffield Children's Hospital	Paediatric Chemical Pathology, Sheffield Children's Hospital NHS Trust, Western Bank, Sheffield, S10 2TH	Switchboard 0114 271 7000 Biochemistry lab 0114 271 7305 Metabolic section: 0114 271 7445 results enquiries: metabolic.ac@nhs.net Claire.hart10@nhs.net (Clinical Scientist)	Not programmed into telepath, need typing as a comment. C16:1 palmitate 0.08 - 0.14 C19:1 stearate 0.150 - 0.28 Please note these are ratios and therefore there is no unit of measurement.	Results returned by post. Report on telepath. Type results and reference ranges in as a comment. Alternatively can upload to PPM.	This sample was analysed at: Clinical Chemistry, Children's Hospital, Sheffield	3-6 weeks		
Pompe screen	POMP1R Superset LPOMP Superset JPOMP	dried blood spot (BSD) - can spot from EDTA whole blood using squeeze pipette - one hanging drop in each circle.	NA	Ambient	First class post (ambient)	Send all	Willink	Willink Biochemical Genetics Laboratory, Manchester Centre for Genomic Medicine, 6th floor, pod 1, St Mary's Hospital, Oxford Road, Manchester, M13 9WL	Duty Biochemist at Willink - 0161 7018612 Willink lab 0161 7012306 or 0161 7012137/8 Enquiries for copy reports: mtf.willink-enquiries@nhs.net	Send upon arrival, Mon - Thurs	blood spot α-glucosidase 7.3 - 39.0 pmol/hpunch/hour	Results returned by post. Report result on telepath. Type result for alpha galactosidase (measured as a reference enzyme) as a comment. Include any other comments.	This sample was analysed at: Willink Unit, Royal Manchester Children's Hospital		
Porphobilinogen (PBG, urgent, for analysis at block 46)	LPBG - adds PBG1J	urine - protect from light													
Porphyrins (blood)	Blood: Superset LPORBR adds PORBR1R and SA1R. Superset JPORBR adds PORBR1R and JCHML. EDTA whole blood. Two samples should be received. Send one whole blood, and one plasma (centrifuged). If only one sample received, do not centrifuge, send whole blood. PROTECT FROM LIGHT. Haemolysed samples not suitable for analysis. Can send if not protected from light, but only up to 6h. If >6h, do not send.	5 - 10 mL	fridge	First class post. Protect from light.	Protect from light.	DB should ensure clinical details on request form indicate ?cutaneous or ?acute porphria.	Cardiff porphyrin service	Cardiff porphyrin service, Department of medical biochemistry & immunology, University Hospital of Wales, Heath Park, Cardiff, CF14 4XW	To chase results: CAV_porphyrin@wales.nhs.uk (secure domain) For Laboratory enquiries: 029 21843565 (Lucy Bentley) For Genetics enquiries: 029 21842811 (Michelle Wood) For clinical advice: 029 21846588 (Dr Danja Schlenburg-Brand) Danja.Schlenburg-brand@wales.nhs.uk Website: www.cardiff-porphyrin.org	Send upon arrival, Mon - Thurs.	Plasma porphyrin screen: Not increased RBC porphyrin screen: Negative Total porphyrin: 0.4 - 1.7 umol/L	Results returned by post. Upload results to PPM. On telepath, use PPM coded comment. Type any concluding comments. Ensure this is done for all sample numbers (blood plasma, urine and faeces may have been sent and are often reported on a single report from Cardiff).	This test was performed by the Porphyrin Service, Cardiff. The full report has been uploaded to PPM+. No results are on ICE.	10 working days (15 if RBC total porphyrin required)	
Porphyrins (faeces)	Faeces: Superset LPORFR adds PORFR1R and SA1R. Superset JPORFR adds PORFR1R and JCHML. faeces PROTECT FROM LIGHT. Can send if not protected from light, but only up to 6h. If >6h, do not send.	5g	fridge	First class post. Protect from light.	Protect from light.	DB should ensure clinical details on request form indicate ?cutaneous or ?acute porphria.	Cardiff porphyrin service	Cardiff porphyrin service, Department of medical biochemistry & immunology, University Hospital of Wales, Heath Park, Cardiff, CF14 4XW	To chase results: CAV_porphyrin@wales.nhs.uk (secure domain) For Laboratory enquiries: 029 21843565 (Lucy Bentley) For Genetics enquiries: 029 21842811 (Michelle Wood) For clinical advice: 029 21846588 (Dr Danja Schlenburg-Brand) Danja.Schlenburg-brand@wales.nhs.uk Website: www.cardiff-porphyrin.org	Send upon arrival, Mon - Thurs.	Total faecal porphyrin <200 nmol/dry weight	Results returned by post. Upload results to PPM. On telepath, use PPM coded comment. Type any concluding comments. Ensure this is done for all sample numbers (blood plasma, urine and faeces may have been sent and are often reported on a single report from Cardiff).	This test was performed by the Porphyrin Service, Cardiff. The full report has been uploaded to PPM+. No results are on ICE.	15 working days	
Porphyrins (urine)	Urine: Superset LPORUR adds PORUR1R and SA1R. Superset JPORUR adds PORUR1R and JCHML. urine. Preferably early morning sample. PROTECT FROM LIGHT. Can send if not protected from light, but only up to 6h. If >6h, do not send.	10 mL	fridge	First class post. Protect from light.	Protect from light.	DB should ensure clinical details on request form indicate ?cutaneous or ?acute porphria.	Cardiff porphyrin service	Cardiff porphyrin service, Department of medical biochemistry & immunology, University Hospital of Wales, Heath Park, Cardiff, CF14 4XW	To chase results: CAV_porphyrin@wales.nhs.uk (secure domain) For Laboratory enquiries: 029 21843565 (Lucy Bentley) For Genetics enquiries: 029 21842811 (Michelle Wood) For clinical advice: 029 21846588 (Dr Danja Schlenburg-Brand) Danja.Schlenburg-brand@wales.nhs.uk Website: www.cardiff-porphyrin.org	Send upon arrival, Mon - Thurs.	urine total urine porphyrin < 40 nmol/mmol creat total porphobilinogen < 1.5 umol/mmol creat Adult ALA < 5.8 umol/mmol creat Child ALA < 5.2 umol/mmol creat	Results returned by post. Upload results to PPM. On telepath, use PPM coded comment. Type any concluding comments. Ensure this is done for all sample numbers (blood plasma, urine and faeces may have been sent and are often reported on a single report from Cardiff).	This test was performed by the Porphyrin Service, Cardiff. The full report has been uploaded to PPM+. No results are on ICE.	10 working days (15 if HPLC or ALA required)	
Prednisolone	No telepath code - currently booked in as a PROB1L (comment NRSOT) & SA1R	Serum (or lithium heparin plasma)	50 uL	Frozen	First class post (ambient)	Yes	Wythenshawe	Biochemistry Dept Clinical Science Building Wythenshawe Hospital Southmoor Road Manchester M23 9LT	0161 291 5084 0161 291 2126 (enquiries) 0161 291 2136 (Duty Biochemist) mtf.biochemistry@wythenshawe@nhs.net (DB email) Duty Biochemist in the first instance Dr Jo Adaway, Consultant Clinical Scientist Brian Keevil 0161 291 2135, brian.keevil@mtf.nhs.uk	Send upon arrival, Mon - Thurs	ug/L None - for compliance checking only.	Results returned by post. Report as a comment on PROB set + AMEND.	7 days		
Procollagen type 1 N propeptide (PINP)	Superset LPINP - adds PINP2R and SA1R Superset JPINP adds PINP2R and JCHML	EDTA plasma. Single sample can be sent for PINP and CTX. Don't send very haemolysed samples as they won't be tested. (serum also acceptable for PINP but not for CTX)	0.5 mL	freezer (can be sent ambient if no CTX)	courier, on dry ice (with CTX)	Send all	Norfolk & Norwich University Hospital (Eastern Pathology Alliance)	Eastern Pathology Alliance, Laboratory Medicine East Block, Level 1 Norfolk & Norwich University NHS Foundation Trust Colney Lane Norwich NR4 7UY	Hospital switchboard 01603 286286 Biochemistry lab 01603 286229 Endocrinology lab 01603 289419 Allison.chipchase@nhs.uk (secure), 01603 287945 nicola.slones@nhs.net susanne.mc Murray@nhs.net holie.barett@nhs.net (trainee BMS in Endo) Duty Biochemist: 01603 646885 DB email nru.r.nuhdutybiochemist@nhs.net done lab: SANSBonesMetaboliem@nhs.uk	Wednesdays Mondays	Male 20 - 76 ug/L Female 19 - 69 ug/L (Above are adult ranges only, to add paed ranges into new LIMS 02/2023)	Results returned by post. Report result on telepath.	Reference Range: Male 20 - 76 ug/L Female 19 - 69 ug/L Sample analysed at Norfolk and Norwich University Hospital	PINP1 - PINP within normal limit. PINP2 - Low PINP - response to Rx? PINP3 - Elevated PINP - high collagen formation. PINP4 - if on anti-resorptive, PINP shows good response to therapy.	2 weeks (user guide on website)

Proinsulin	No telephax code. Book in as PROB1L (comment NRSOT) + SA1R	Serum Separate and freeze as soon as possible (e.g. <1h) Lith hep plasma also accepted	100 uL	Frozen. Labile, so please centrifuge and freeze within 1h of sample collection.	Courier on dry ice with samples for insulin & C-peptide.	Yes - vetting by DB required.	Guldford	SAS Peptide Hormones section Clinical Laboratory Level B Royal Surrey Hospital Egerton Road Guldford Surrey GU2 7XX	http://www.nhs.uk/pathology/fph.nhs.uk 01483 406715 enquiries: rsch.peptideslab@nhs.net business manager = berni.mallo@nhs.net Lisa Boyle BMS2 Dr Owen Wark Consultant Clinical Scientist	Send Mon or Wed with samples for insulin & C-peptide.	For hypoglycaemia Proinsulin levels should be <10pmol/L.	Results returned by post or emailed to the Duty Biochemist. Report result as a comment on the PROB set + AMEND	5-10 working days			
Purines and Pyrimidines	Supersets LPURN / JURIN PURNR - also adds SA1R	Urine is first line screen (changed on ICE to urine as of 16/6/20). 5 mL plain urine (minimum 2 mL). EDTA whole blood - do not separate. Store in fridge. Must reach referral lab within 3 days	2 mL	Urine - frozen EDTA whole blood - fridge	First class post (ambient)	Send first request. Subsequent requests should be vetted by the Duty Biochemist.	Synnovis > was Viapath (Kings College Hospital (St. Thomas'))	Purine research laboratory 4th floor, North Wing St Thomas' Hospital Westminster Bridge Road London SE1 7EH	Results/customer services: 0204 5137300 (option 2) Metabolic lab: 020 3299 4128 Duty Scientist: 020 3299 0359 Purine lab: 020 7188 1266 http://www.viapath.co.uk/our-tests/purine-pyrimidine-screen-blood lynette.fairbanks@viapath.co.uk jule.dance@nhs.net (senior BMS in purines lab) Viapath Purine@nhs.net customerservices@synnovis.co.uk	EDTA blood should only be sent Mon - Wed as must reach referral lab within 3 days of collection.	Urate: 100 - 260 umol/L No RRR provided for other analytes.	Results returned by post. Upload report to FPM. Report on telephax with FPM coded comment.	This sample was analysed at : Purine Research Laboratory, Guy's Hospital, London	3 weeks		
Pyruvate kinase	PROB1L (comment NRSOT) & SA1R	1mL EDTA blood. Also requires FBC and reticulocyte count, send results with sample for PK. Any red cell transfusion within the last 4 months must be declared on the request form. Samples must be received within 3 days of collection. Collect and send Mon/Tue/Wed only.	1 mL	Fridge / ambient	First class post (ambient)	Yes - vetting by DB required.	Synnovis > was Viapath (Kings College Hospital (London))	Red cell centre - protein laboratory c/o Central Specimen Reception Blood Sciences Laboratory Ground floor, Bessemer Wing King's College Hospital Denmark Hill London SE5 8RS	Tel 020 3299 2455 kch-fr.redcellab@nhs.net https://www.synnovis.co.uk/our-tests/pyruvate-kinase-assay customerservices@synnovis.co.uk	Mon / Tue / Wed	11.0 - 19.0 IU/g Hb	Report result as a comment on the PROB set + AMEND	10 working days (2 weeks)			
Retinol binding protein (RBP)	RBP1R Supersets LRBP - adds RBP1R, SA1R and ALQTS1 Supersets JRBP - adds RBP1R, JCHM1L and ALQTS1.	serum Can also be measured in urine	2 mL serum (0.5 mL actually enough) 20 mL urine	fridge	First class post (ambient)	Send all	Sheffield PRU	Immunology / Protein Reference Unit, Northern General Hospital, Herries Road, Sheffield S5 7AU	General enquiries 0114 226 9196 0114 271 5552 an-r.biodiagnosisc@nhs.net	Run weekly but not on a specific day	Send upon arrival, Mon - Thurs	Serum: 20-40 mg/L Urine: <15 mg/L	Results returned by post. Report result on telephax.	This sample was analysed at : Protein Reference Unit (PRU), Sheffield.	1 week	
Stone (calculus) analysis	STON2R - also adds SA1R	renal stone (CAL) in a sterile container	fridge	fridge	First class post (ambient)	Send all	Birmingham City Hospital (part of Sandwell and West Birmingham)	Department of Clinical Biochemistry, City Hospital, Dudley Road, Birmingham B18 7QH	0121 507 5162 (Biochem & Haem call centre) 0121 507 5441 http://www.citysaysays.org.uk pevaz.mohammed@nhs.net	Send upon arrival, Mon - Thurs	NA	Results returned as pdf attachment emailed to Duty Biochemist. Report as comments on telephax.	This sample was analysed at : Clinical Biochemistry Dept, City Hospital, Birmingham	5 days		
Sulphonylurea (serum) (sulfonylurea)	Supersets LSUR adds SUR2R & SA1R Supersets JSUR adds SUR2R & JCHM2L	Serum Separate and freeze as soon as possible (e.g. <1h) Lith hep plasma also accepted	350 uL	frozen	First class post or on dry ice with samples for insulin & C-peptide.	yes - vetting by DB required.	Guldford	SAS Peptide Hormones section Clinical Laboratory Level B Royal Surrey Hospital Egerton Road Guldford Surrey GU2 7XX	http://www.nhs.uk/pathology/fph.nhs.uk 01483 406715 enquiries: rsch.peptideslab@nhs.net business manager = berni.mallo@nhs.net Lisa Boyle BMS2 Dr Owen Wark Consultant Clinical Scientist	Send Mon or Wed with samples for insulin & C-peptide.	Results reported as Negative, Positive No reference ranges quoted on Guldford's report	Results returned by post or emailed to the Duty Biochemist. Report result on telephax.	The following sulphonylurea drugs have been screened for: chlorpropamide, glibenclamide, gliclazide, gimepiride, glipizide, tolazamide and tolbutamide. This sample was analysed at : Guldford SAS Hormone Centre, Royal Surrey County Hospital	5-10 working days		
Sulphonylurea (urine) (sulfonylurea)	Supersets LSURU adds SUR2R & SA1R Supersets JSURU adds SUR2R & JCHM2L	Plain urine Basic acid sample also accepted Freeze as soon as possible	350 uL	frozen	First class post or on dry ice with samples for insulin & C-peptide.	yes - vetting by DB required.	Guldford	SAS Peptide Hormones section Clinical Laboratory Level B Royal Surrey Hospital Egerton Road Guldford Surrey GU2 7XX	http://www.nhs.uk/pathology/fph.nhs.uk 01483 406715 enquiries: rsch.peptideslab@nhs.net business manager = berni.mallo@nhs.net Lisa Boyle BMS2 Dr Owen Wark Consultant Clinical Scientist	Send Mon or Wed with samples for insulin & C-peptide.	Results reported as Negative, Positive No reference ranges quoted on Guldford's report Unable to enter result in Telephax as positive or negative, only numeric results accepted so have to report in a comment	Results returned by post or emailed to the Duty Biochemist. Report result on telephax.	This sample was analysed at : Guldford SAS Hormone Centre, Royal Surrey County Hospital	5-10 working days		
Thioguanine nucleotides (TGN) aka thiopurine metabolites	Supersets LTGN - adds TGN1R and SA1R Supersets JTGN - adds TGN1R and JCHM1L	EDTA whole blood Please ensure only a single sample is sent for TGN. Should reach Birmingham for analysis within 5 days.	0.5 mL	fridge MUST NOT FREEZE	First class post (ambient)	Yes - vetting by DB required.	Birmingham City Hospital (part of Sandwell and West Birmingham)	Department of Clinical Biochemistry, City Hospital, Dudley Road, Birmingham B18 7QH	Laura Eccles 0121 507 5345 info@citysaysays.org.uk	send upon arrival, Monday - Friday Samples are received on a Saturday. No service over BH Samples should arrive within 5 days of collection	6-TGN 235 - 450 pmol/8x10 ⁹ RBCs (maximum drug efficacy) 6-MMPs < 5700 pmol/8x10 ⁹ RBCs. If > 5700, increased risk of hepatotoxicity.	Results returned as pdf attachment emailed to Duty Biochemist. Report result on telephax.	Maximum drug efficacy: 235-450 pmol 6-TGN/8x10 ⁹ RBCs. Increased risk of hepatotoxicity >5700 pmol 6-MMP/8x10 ⁹ RBCs This sample was analysed at : Clinical Chemistry, City Hospital, Birmingham	2 working days		
Thiopentone aka thiopental, pentobarbitone. Only for brainstem death testing, not therapeutic drug monitoring	TPEN2R. Also adds SA1R	EDTA plasma. Gel tubes are not suitable. Separate and freeze plasma at -20 within 12 hours.	1 mL	frozen	Courier on dry ice	Yes - vetting by DB required. Must contact Cardiff before sending	Cardiff Toxicology Laboratories	Cardiff Toxicology Laboratory, 4th floor Routeledge Academic Centre University Hospital Llandough Penlan Road, Llandough CF94 2XX	Results Enquiries: 029 2071 6894 Lab number 02921 826994 Office manager = Mrs Emma Taylor, 02920 716894, emma.taylor@wales.nhs.uk Mrs Joanne Rogers, Joanne.rogers@wales.nhs.uk www.ctlabs.co.uk	Mon - Fri, 9-5. At weekends or bank holidays, must arrange via on-call consultant for Biochemistry at Cardiff.	Send asap, see left.	reference range removed by Cardiff 18/8/20. No RRR reported on telephax.	Results returned by post. Report result on telephax.	This sample was analysed at : Toxicology Laboratory, Llandough Hospital, Penarth	ZB0107 - Combined thiopentone plus pentobarbitone levels in range 15 - 40 ZB0108 - mg/L usually sufficient for assisted ventilation. Levels <5 mg/L ZB0109 - are not usually associated with significant sedation.	24h (letter & website)
Thiopurine Methyl Transferase (TPMT) activity	TPMT3R Supersets LTPMT - adds TPMT3R and SA1R Supersets JTPMT - adds TPMT3R and JCHM1L	EDTA whole blood. Can also be used for TGN. Lithium heparin whole blood also acceptable for TPMT (but not for TGN). Please ensure only a single sample is sent for TPMT. Needs to arrive in Birmingham within 8 days of collection.	2 mL	fridge	First class post (ambient)	Only send if no previous.	Birmingham City Hospital (part of Sandwell and West Birmingham)	Department of Clinical Biochemistry, City Hospital, Dudley Road, Birmingham B18 7QH	Laura Eccles 0121 507 5345 info@citysaysays.org.uk	send upon arrival, Monday - Friday. Samples are received on Saturdays. Sample needs to arrive within 8 days from collection. No service over BH.	DEFICIENT: Less than 10. LOW: 20-67 NORMAL: 68-150. HIGH: Greater than 150. Note: recent blood transfusion can misclassify TPMT status and may mask a deficient TPMT result.	Result returned as pdf attachment emailed to Duty Biochemist. Report result on telephax. NB TPMT genotype should be reported under TPGMTR set.	ZB0293 - Patient has undetectable TPMT activity and should not receive ZB0294 - thiopurine drugs. Please send a second sample to confirm	1 working day with electronic reporting available		
Thiopurine methyl transferase (TPMT) genotype - test reflexed by Birmingham lab (see notes).	TPMG1R. Introduced Aug 2022 No supersets required.	EDTA whole blood, 2 mL. This test is reflexed by the Birmingham lab and no additional sample is required.	2mL	fridge	First class post (ambient)	No - test is reflexed by Birmingham lab.	Birmingham City Hospital (part of Sandwell and West Birmingham)	Department of Clinical Biochemistry, City Hospital, Dudley Road, Birmingham B18 7QH	Laura Eccles 0121 507 5345 info@citysaysays.org.uk	send upon arrival, Monday - Friday. Samples are received on Saturdays. Sample needs to arrive within 8 days from collection. No service over BH.	NA	Result returned as pdf attachment emailed to Duty Biochemist. Report result on telephax. Enter COM in result field (see comment below) then enter information from Birmingham's report as free text comments, using coded comments where appropriate.	This sample was analysed at Clinical Biochemistry Dept, City Hospital, Birmingham.	TPMG1 - No TPMT mutations detected (wild type). TPMT genotype generally associated with normal TPMT activity, however does not exclude low or deficient activity due to rare mutations not screened for. TPMG2 - Sample screened for common mutations: TPMT*3A/*3C and TPMT*2 only, which account for 60-95% of all mutant alleles for deficient TPMT activity.		
Thyroid function test Interference Investigation - Cambridge	Book in as PROB1L (comment NRSOT), AINT1L & SA1R	Serum	1 mL	fridge	First class post (ambient)	Yes - vetting by DB required.	Cambridge Addenbrooke's	Endocrine laboratory, Level 4 Blood Sciences & Immunology, Addenbrookes Hospital Hills Road Cambridge CB2 0QQ	Lab tel 01223 217157 susan.oddy@nhs.net 01223 256656 kevin.taylor@nhs.net (Endocrine lab manager)	Send upon arrival, Mon - Thurs	DELTA TSH 0.4-4.0mIU/L DELTA FT4 9.0-20.0 pmol/L Aetlica FT3 3.5-6.5pmol/L Aetlica FT4 10.5-21pmol/L TBG 14.0-31.0ug/mL	Results returned by post. Pass to the Duty Biochemist to report.	None	None	4-6 weeks.	
Thyroid function test Interference Investigation - Pinderfields (TSH, FT4, FT3). Don't send AINT1L to Pinderfields since they have Roche (1 step) assay. Preferably send to Hull	Book in as AINT1 (assay interference) and SA1R	serum	1 mL	fridge	internal transport	Yes - vetting by DB required.	Pinderfields	Blood Sciences Department Pathology Pinderfields Hospital Aberford Road Wakefield WF1 4DG	01924 317093 (biochemistry lab) 01924 543036 (clinical scientists team) myh-tr.pathologyref@nhs.net	Available 24/7	Send upon arrival, Mon - Thurs	TSH 0.27 - 4.20 mIU/L FT4 11 - 26 pmol/L FT3 3.1 - 6.8 pmol/L	Post / ICE OpenNet. Pass to the Duty Biochemist.	1 day (24h) (letter)		
Thyroid function tests interference Investigation - Hull (TSH, FT3, FT3)	Book in as AINT1 (assay interference) and SA1R	serum	fridge	fridge	First class post (ambient)	Yes - vetting by DB required.	Hull	Blood Sciences Pathology Building Hull Royal Infirmary Anlaby Road Hull HU3 2JZ	01482 607772 Rachel.wilm@hey.nhs.uk (Consultant) Mark.Hajaw@hey.nhs.uk (acting lab manager)	available 24/7	Send upon arrival, Mon - Thurs	TSH 0.35 - 4.7 mIU/L FT4 7.8 - 21 pmol/L FT3 3.8 - 6.0 pmol/L	Results returned by post or emailed to the Duty Biochemist. Pass to the Duty Biochemist to report.	24h		
Thyroid hormone binding studies "thyroid screen" - Queen Elizabeth, B'ham No longer offered as of 2021.	Book in as PROB1L (comment NRSOT) & SA1R	Serum	0.6 mL	fridge	First class post (ambient)	Yes - vetting by DB required.	Birmingham Queen Elizabeth Hospital	Department of Biochemistry, Queen Elizabeth Hospital Birmingham Mindelsohn Way, Edgbaston, Birmingham, B15 2GW	bioink@qubh.nhs.uk 0121 3716543	Send Mon - Thurs	Not a quantitative assay, reported as positive or negative	Pass to the Duty Biochemist.	6 weeks			
Topiramate	No telephax code - currently booked in as a PROB1L (comment NRSOT) & SA1R	EDTA plasma. Gel tubes not suitable.	1 mL	separate plasma and store at -20	First class post (ambient)	Yes - vetting by DB required.	Cardiff Toxicology Laboratories	Cardiff Toxicology Laboratory, 4th floor Routeledge Academic Centre University Hospital Llandough Penlan Road, Llandough CF94 2XX	Results Enquiries: 029 2071 6894 Lab number 02921 826994 Office manager = Mrs Emma Taylor, 02920 716894, emma.taylor@wales.nhs.uk Mrs Joanne Rogers, Joanne.rogers@wales.nhs.uk www.ctlabs.co.uk	Send upon arrival, Mon - Thurs	5 - 20 mg/L	Results returned by email. Report as a comment on PROB set + AMEND.	7 days (letter & website)			

Transferrin glycoforms (isoforms, IEP)	TGLY1R - does not add SA1R Superset LTGLY - adds LGLY1R and SA1R Superset JTGLY - adds TGLY1R and JCHM2L	serum, minimum volume Lithium heparin plasma is acceptable.	0.1 mL (100 uL)	fridge or frozen if > 1 week	First class post (ambient)	Yes - vetting by DB required. Do not sent for neonates < 3 weeks old due to presence of maternal transferrin.	Neuroimmunology & CSF Lab, Queen Square, London	Neuroimmunology and CSF laboratory (NICL), Box 76, 9th floor, Institute of Neurology, Queen Square, London, WC1N 3BG	020 3448 3814 (Enquiries) 020 3448 3812 uclh-enquiry@hnm-nicl@nhs.net julie.mcperson@nhs.net 020 3448 3542 Dr Miles Chapman miles.chapman1@nhs.net	Send upon arrival, Monday - Thursday.	NA	Results emailed to Duty Biochemist. Report on telepath using appropriate code (e.g. NOR, type ?? For options).	This sample was analysed at: Neuroimmunology Dept, National Hospital for Neurology, London	9 working days		
TSH receptor antibodies (aka TRABs, TBI)	Superset JTRAB - adds TBI2R & JCHM2L Superset LTRAB - adds TBI2R & SA1R	Serum Separated, stable for 3 days at 4-8C, 1 month at -20C. Unseparated 24h. Cannot measure in very lipaemic samples	2 mL 1 mL Paeds	freezer	First class post (ambient)	Yes - vetting by DB required. Consider stability.	Newcastle Royal Victoria	Department of Blood Sciences Leazes Wing Royal Victoria Infirmary Queen Victoria Road Newcastle upon Tyne NE1 4LP	0191 282 9719 (Royal Victoria) 0191 244 8889 (Duty Biochemist) 0191 282 4028 (Endocrine lab) nuth.dutybiochemist@nhs.net	Available during full access hours. Assayed as service demands	send upon arrival, Monday - Thursday	TRAB > 1.8 IU/L is regarded as positive TRAB 1.0 to 1.8 IU/L is regarded as equivocal TRAB < 1.0 IU/L is regarded as negative. NB on telepath unit is uL.	Results returned by post. Report on telepath.	TRAB > 1.8 IU/L is regarded as positive. TRAB 1.0 to 1.8 IU/L is regarded as equivocal TRAB < 1.0 IU/L is regarded as negative. This sample was analysed at: SAS, Clinical Biochemistry, Royal Victoria Infirmary, Newcastle	2 weeks (website)	
Urine arsenic speciation	UARS2R. Does not add SA1R. No supersets	Plain urine. Tubes containing preservatives cannot be used.	3 mL	fridge	First class post. Send frozen (courier) if likely to be a delay of >24h. Please include results of total arsenic concentration in ug/L or nmol/L.	Yes - vetting by DB required. Please include results of total arsenic concentration in ug/L or nmol/L.	Buxton Health & Safety Lab	Environmental & Biomedical Measurement Service, Health & Safety Executive (HSE) Laboratory (Science division), Harpur Hill, Buxton, Derbyshire, SK17 9JN	www.hsl.gov.uk https://www.hsl.gov.uk/online-ordering/analytical-services-and-assays/biological-monitoring/arsenic-speciation Sample reception 203 028 3383 registration.sample@hse.gov.uk liz.lease@hse.gov.uk (Senior Scientist), +44 (0) 203 028 1951 Jackie.morton@hse.gov.uk (Principal Scientist)	NA	Send upon arrival, Mon - Thur	umol/mol creatinine	Results emailed to the Duty Biochemist / Carys Lippatt. Forward report to Carys Lippatt or Liz Fox for them to enter results and interpretation in telepath.	This sample was analysed at: Health & Safety laboratory, Buxton. This assay is not UKAS-accredited.	None	20 working days (letter)
Urine bile acids (bile salts) (Sheffield) - used between May 2021 and March 2023. No longer in use.	Superset LBACU (adds BACU2R & SA1R) Superset JBACU (adds BACU2R & JCHM2L)	Plain urine (2 mL) Can also analyse lithium heparin plasma or serum (0.5 mL).	2 mL	freezer	First class post (ambient)	yes - vetting by DB required.	Sheffield Children's Hospital	Clinical Chemistry - metabolic laboratory, Sheffield Children's Hospital, Western Bank, Sheffield, S10 2TH	Lab telephone 0114 2717445 email Metabolic.sch@nhs.net Contacts Claire Hart (Lead Clinical Scientist) Louisa Smith (Chief BMS) Stephen Mcswaney (Chief/Senior BMS)			urine (umol/mmol creat): G-DHC = 0.02 - 0.47 G-THC = 0.04 - 1.39 T-DHC = 0.01 - 0.08 T-THC = 0.01 - 0.08 Interpretive comment will be added to report. plasma (umol/L): G-DHC = <6 G-THC = <2 T-DHC = <2 T-THC = <2	Results returned by email. Report on telepath.	This sample was analysed at: Clinical Chemistry, Children's Hospital, Sheffield.	3-6 weeks	
Urine bile acids (UCL) in use again from March 2023.	BACU1R - also adds SA1R. Faby to reconfigure supersets.	urine	2 mL	freezer	courier, dry ice. Re-instated normal service on 1st July 2020. BUT - Send on Tuesdays and Wednesdays only, to arrive on Wed or Thur for processing.	yes - vetting by DB required	Institute of Child Health, London	UCL Translational Mass Spectrometry Research Group, UCL Great Ormond Street Institute of Child Health, 30 Guilford St, London WC1N 1EH	Peter Clayton 020 7905 2628 peter.clayton@nhs.net or peter.clayton@ucl.ac.uk Clinical enquiries 020 7905 2628 Routine enquiries (Dr Yousef Khalil) 020 7905 2148, y.khalil@ucl.ac.uk https://www.ucl.ac.uk/child-health/research/genetics-and-genomic-medicine-programme/biological-mass-spectrometry-centre/bioanalytical	Send upon arrival, Mon - Thur DO NOT SEND IF UNIVERSITY LAB IS LIKELY TO BE CLOSED (Bank holidays etc)	not quantitative. Interpretation provided on report	reports returned by email. To be uploaded to PPM.	This sample was analysed at: Institute of Child Health, Great Ormond Street Hospital, London	2019 median TAT 73 days, 'at least 2 months'		
Urine cannabinoids	SCAN2R & SA1R	Urine in a plain universal. Can also analyse EDTA plasma or serum (gel-free tube)	0.5 mL	fridge frozen if there is likely to be a delay in sending.	First class post (ambient)	vetting by DB required	Birmingham City Hospital (part of Sandwell and West Birmingham)	Department of Clinical Biochemistry, City Hospital, Dudley Road, Birmingham B18 7QH	0121 507 4138 swbh.toxicology@nhs.net http://www.citysaysays.org.uk/	Send upon arrival, Mon - Thurs	Reported on telepath as negative or positive. Interpretation provided on report.	Results returned as pdf email attachment to Duty Biochemist. Forward email with report to carys.lippatt@nhs.net and elizabeth.fox@nhs.net. Result will go into toxicology section's NPCL queue. MCO2 for transcription check (not the referrals NPCL queue).	The detection window for synthetic cannabinoids is approximately 1-2 days. Please note this test is not currently UKAS accredited. This sample was analysed at: Regional Toxicology Laboratory, City Hospital, Birmingham. This test is not UKAS accredited.	2-3 working days		
Urine citrate	CITX1R & SA1R	urine (plain or acidified accepted)	10 mL	Fridge	First class post (ambient)	Yes - vetting by DB required.	HSL analytics (UCLH, Royal Free & TDL)	Health Services Laboratories (HSL) analytics, Specimen reception - Biochemistry, 60 Whitfield Street, London W1T 4EU	020 7307 9400 Robin.Pryke@hslpathology.com biochemistry.helpdesk on 020 344 79405 uclh-enquiry.biochemhelpdesk@nhs.net UCLH.pathology@nhs.net DutyBiochemist@hslpathology.com	Send upon arrival, Mon - Thur		Report on telepath.		5 days		
Urine C-peptide (urine C-peptide:creatinine ratio, UCPCR)	UCPE1R	urine in red-topped boric acid tube. Measure on a post-prandial sample taken approx 2h after meal. Stable for 24h in a plain tube at room temp. Stable for 3d in a boric acid tube at room temp.		frozen	First class post (ambient)	Yes - vetting by DB required. Only available to secondary care, or for Dr Ian McDermott from primary care.	Exeter	Department of Blood Sciences - Reception Level 2, Area A Royal Devon & Exeter Hospital Barrack Road Exeter EX2 3DW	www.exeterlaboratory.com General enquiries: 01392 402934 Clinical enquiries (DS): 01392 402935 rde-tr.biochem@nhs.net Result enquiries: rde-tr.baadon@nhs.net clinical enquiries: rde-tr.biochemconsultants@nhs.net Angie Cooper: Tel: 01392 402948 E-mail: angie.cooper@nhs.net Mandy Perry	Send upon arrival, Mon-Thurs	No reference ranges quoted on Exeter's report.	Results returned by post (NB may go to immunology lab). Report on telepath. Main result field is the urine C-peptide:creatinine ratio. Type other results as a comment.	For advice and interpretation, see www.diabetesgenes.org/content/urine-c-peptide-creatinine-ratio This sample was analysed at: Clinical Biochemistry, Royal Devon & Exeter Hospital	7 days (website)		
Urine Drugs of Abuse (psychoactive screen) - more extensive panel compared to LHT. Deactivated in telepath May 2022. Use urine cannabinoids or urine toxicology screen instead.	UPDS1R & SA1R	Urine. Can also do screen on oral fluid.	2 mL	fridge	first class post unless required urgently.	Yes - vetting by DB required.	Birmingham City Hospital (part of Sandwell and West Birmingham)	Department of Clinical Biochemistry, City Hospital, Dudley Road, Birmingham B18 7QH	http://www.citysaysays.org.uk/ swbh.toxicology@nhs.net	Send upon arrival, Mon - Thurs	Cut-offs and interpretation provided on report.	PDF attachment emailed to DB. Forward emailed reports to carys.lippatt@nhs.net and elizabeth.fox@nhs.net		1-2 days		
Urine glycolate	Book in as PROB1L (comment NRSOT) + SA1R	urine	10 mL	Fridge	First class post (ambient)	Yes - vetting by DB required.	HSL analytics (UCLH, Royal Free & TDL)	Health Services Laboratories (HSL) analytics, Specimen reception - Biochemistry, 60 Whitfield Street, London W1T 4EU	020 7307 9400 Robin.Pryke@hslpathology.com biochemistry.helpdesk on 020 344 79405 uclh-enquiry.biochemhelpdesk@nhs.net UCLH.pathology@nhs.net DutyBiochemist@hslpathology.com	Send upon arrival, Mon - Thur		Report as a comment on PROB set + AMEND.		10 days		
Urine haemosiderin	SJUH superset JHSD, HSD1R & SA1R LGI superset LHSD	urine Stable for 24h, send same day	10 - 20 mL	ambient or fridge	Trust transport, ambient	No vetting required.	York	Haematology Dept, Laboratory Medicine York Hospital Wigginton Road York YO31 8HE	Richard Adams, Chief BMS for Haem & Coag 01904725642 richard.adams@york.nhs.uk 01904 724113 Lab phone 01904 725620	Upon receipt of sample.	Mon - Thurs.	NA. Reported as 'detected' or 'not detected'.	Results will be available on ICE OpenNet and also posted. Report results on telepath using D (detected) or ND (not detected). Email scan of paper copy to Sharon.Roadford. Results will trap in JAUT NPCL queue for transcription check.	This sample was analysed at: York Teaching Hospitals NHS Foundation Trust. This test is not UKAS-accredited.	none	24h
Urine polyols See referred tests SOP for international shipping requirements.	UPOL1R & SA1R	urine (frozen)	1 mL	freezer	International courier on dry ice Send samples with UMC request form: https://www.amc.nl/web/laboratory-genetic-metabolic-diseases-lgmd/metabolites.htm	Rob Barski to vet request	Amsterdam UMC	Use label from form. Laboratory Genetic Metabolic Diseases (FG-132) Amsterdam UMC, location AMC Meibergdreef 9 1105 AZ Amsterdam The Netherlands	+31 20 4442880 https://www.amc.nl/web/laboratory-genetic-metabolic-diseases-lgmd/metabolites.htm amc_metab@amc.nl	analysed monthly	Mon/Tue - should not arrive over the weekend.	Interpretation provided with report.	Upload report to PPM. Report on telepath with PPM coded comment.	This sample was analysed at: Dept of Clinical Biochemistry, Metabolic Unit, VU UMC Amsterdam	none	4 weeks
Urine steroid profile (USP)	LSTFU / JSTPU STPU1R - also adds SA1R	plain random urine or aliquot from 24h collection (note total volume)	20 mL	Frozen	First class post (ambient)	Yes - vetting by DB required.	Synnovis - was Viapath (Kings College Hospital London)	Biochemistry (steroid laboratory) Ground Floor Bessemer Wing King's College Hospital Denmark Hill London SE5 9RS	020 3299 4131 norman.taylor1@nhs.net Synnovis customer service enquiries 0204 513 7300 (option 2) Duty Scientist: 0203 3299 0359 customerservices@synnovis.co.uk	(usually sent from block 46)		Results returned by post. Reports should go back to block 46. Forward to stephen.gibbons@nhs.net	This sample was analysed at: Clinical Biochemistry Dept, Kings College Hospital, London	21 days if urgent, sample can be prioritised and results over the phone in 3 days.		
Urine toxicology screen (unknown drug screen by TOP-MS)	TOXU1R & SA1R	urine Can also analyse EDTA plasma, serum (gel-free), oral fluid, tablets, powders and smoking products.	0.5 mL	fridge	first class post unless required urgently. Usually sent directly from block 46 (SLM)	Yes - vetting by DB required.	Birmingham City Hospital (part of Sandwell and West Birmingham)	Department of Clinical Biochemistry, City Hospital, Dudley Road, Birmingham B18 7QH	0121 507 4138 swbh.toxicology@nhs.net http://www.citysaysays.org.uk/	send upon arrival, Mon - Thurs	Qualitative analysis. Interpretation provided on report.	Results emailed as pdf attachment to DB / Carys, forward email with report to carys.lippatt@nhs.net and elizabeth.fox@nhs.net. Result will go into toxicology section's NPCL queue. MCO2 for transcription check (not the referrals NPCL queue).	This sample was analysed at: Regional Toxicology Laboratory, City Hospital, Birmingham	24-48h from sample receipt (letter, 2022)		
Urine trimethylamine	TMAU2R (adds SA1R)	choline load required prior to collection (e.g. eggs & baked beans). See SCH lab handbook for more information on procedure. https://www.sheffieldchildrens.nhs.uk/laboratory-medicine/clinical-chemistry/metabolic-biochemistry/ urine, 10 mL. Ideally from 24h collection collected into 10 mL 6 M HCl. Can also send 10 mL random urine, acidified to pH 2 with HCl. Nitrite positive samples will not be analysed.	10 mL	frozen at -80	First class post (ambient)	Yes - vetting by DB required.	Sheffield Children's Hospital	Chemical pathology - metabolic section, Sheffield Children's Hospital, Western Bank, Sheffield S10 2TH	Switchboard 0114 271 7000 Biochemistry lab 0114 271 7305 Metabolic section: 0114 271 7445 results enquiries: metabolic.sch@nhs.net Claire.hart10@nhs.net (Clinical Scientist)			Urine creatinine: mmol/L Free TMAI creat ratio: < 7.7 umol/mmol creat. TMA-N:Oxide / creat ratio: < 119 umol/mmol creat. % N-Oxidation: > 94% Additional interpretation will be given in the report NEEDS UPDATING IN TELEPATH.	Results returned by post. Report on telepath. Check reference range. If not correct report as a comment with correct reference range.	Please note new reference ranges (needs removing). Measurements made by mass spectrometry. This sample was analysed at: Clinical Chemistry, Children's Hospital, Sheffield	6-8 weeks (lab handbook)	
Urine alpha-aminoadipic semialdehyde (AASA)	AASA1R	urine. Freeze immediately (stable at room temp for 16h).	1 mL	frozen	courier, dry ice. Re-instated normal service on 1st July 2020. BUT - Send on Tuesdays and Wednesdays only, to arrive on Wed or Thur for processing.	Send first request. Subsequent requests should be vetted by the Duty Biochemist.	Institute of Child Health, London	UCL Translational Mass Spectrometry Research Group, UCL Great Ormond Street Institute of Child Health, 30 Guilford St, London WC1N 1EH	Peter Clayton 020 7905 2628 peter.clayton@nhs.net or peter.clayton@ucl.ac.uk philippa.mills@nhs.net Clinical enquiries 020 7905 2628 Routine enquiries (Dr Yousef Khalil) 020 7905 2148, y.khalil@ucl.ac.uk https://www.ucl.ac.uk/child-health/research/genetics-and-genomic-medicine-programme/biological-mass-spectrometry-centre/bioanalytical	Send upon arrival, Mon - Thur DO NOT SEND IF UNIVERSITY LAB IS LIKELY TO BE CLOSED (Bank holidays etc)	interpretation provided on report. Asked DM to remove control ranges from autoconfirm whilst they are running with new mass spec.	Results returned by email to eleanor.mclaughan@nhs.net or DB. Upload report to PPM. Report on telepath with PPM coded comment.	This sample was analysed at: The Biochemistry Department, Institute of Child Health, London. This assay is not UKAS-accredited.	6 weeks. From experience, long TAT > 2m		

Vascular endothelial growth factor (VEGF)	Not set up as a sandwich test. Request should be discussed with the Duty Biochemist. Book in as PROB1L or PROB1J and SA1R.	serum	0.5 mL (500 uL)	fridge	First class post (ambient)	yes - requests should be discussed with the DB.	Neuroimmunology & CSF lab, Queen Square, London	Neuroimmunology and CSF laboratory (NICL), Box 76, 9th floor, Institute of Neurology, Queen Square, London, WC1N 3BG	020 3448 3814 (Enquiries) 020 3448 3812 ujh.enquiry.rhnn-nic@nhs.net ujh.mcherson@nhs.net 020 3448 3542 Dr Miles Chapman miles.chapman1@nhs.net	< 771 pg/mL	Report result as a comment on the PROB set + AMEND	n/a	10 working days		
Very long chain fatty acids (VLCFA), phytanate, pristanate	Superset VLFA adds VLF1R and SA1R. Superset JVLFA adds VLF1R and JCHM1L.	serum or lithium heparin plasma or EDTA plasma	0.5 mL	freezer	First class post (ambient)	send all	Sheffield Children's Hospital	Paediatric Chemical Pathology, Sheffield Children's Hospital, Western Bank, Sheffield S10 2TH	Switchboard 0114 271 7000 Biochemistry lab 0114 271 7305 Metabolic section: 0114 271 7445 results enquiries: metabolic.sch@nhs.net Clara.hart10@nhs.net (Clinical Scientist)	Docosanoate (C22) 15 - 112 umol/L Tetracosanoate (C24) 14 - 80 umol/L Hexacosanoate (C26) 0.33 - 1.50 umol/L C28/C22 0.44 - 0.97 C26/C22 0.005 - 0.030 Phytanate 0.2 - 19.3 umol/L Pristanate < 1.88 umol/L	Results returned by email to DB inbox / referred tests inbox / eleanor.mclaughlin@nhs.net. Report results on telepath.	This sample was analysed at: Clinical Chemistry, Children's Hospital, Sheffield.	3-6 weeks (metabolic lab manual)		
Vitamin B1 (thiamine)	VTB12R Superset LVTB1 - adds VTB12R and SA1R Superset JVTB1 - adds VTB12R and JCHM1L.	EDTA whole blood. Lithium heparin whole blood also accepted. Ideally protect from light, but stable for at least 48h at room temp at ambient light conditions. Cuenq et al, ACB 2015, 52(2). Freeze asap after collection.	0.1 mL (100 uL)	freeze whole blood (confirmed with lab)	First class post (ambient)	Yes - vetting by DB required.	Rotherham	Department of Biochemistry, The Rotherham NHS Foundation Trust, Moorgate Road Rotherham S60 2UD	Rotherham Biochemistry secretary: 01709 424051 Clinical Scientist: 01709 424103 Laboratory: 01709 424241 rgh.biochemistry@nhs.net	Run weekly but not on any particular day.	Results returned by post. Report results on telepath.	This sample was analysed at: Clinical Biochemistry, Rotherham Hospital, Rotherham.	2 weeks		
Vitamin B2 (riboflavin) (red cell FAD)	LVTB2 - adds VTB22R and SA1R JVTB2 - adds VTB22R and JCHM1L.	Lithium heparin (no gel) or EDTA tube. Gel tubes not suitable. Preferably fasting. Protect from light (stable for 1h in direct sunlight, or 72h in ambient light). If sample can be sent so as to arrive in Glasgow within 72h of collection, store whole blood (ambient) and send whole blood (minimum 1 mL). Otherwise, centrifuge, remove plasma and buffy coat and freeze packed red cells at -20. Minimum 400 uL. BE can be measured on the same sample.	1 mL whole blood or 400 uL red cells.	See left	First class post (ambient)	Yes - vetting by DB required. Indications: malabsorption, sore mouth, cracked lips, normocytic normochromic anaemia, dermatitis	Glasgow Royal Infirmary	Department of Clinical Biochemistry, Macewen building, Glasgow Royal Infirmary, Castle Street, Glasgow, G4 0SF	https://www.trace-elements.co.uk/ Duty Biochemist 0141 242 9500, option 2 STEMDRL@ggc.scot.nhs.uk Anthony.Catchpole@ggc.scot.nhs.uk	Analysed once weekly or more often, no specific day.	Send Mon - Thurs	1.0 - 3.4 nmol FAD/g Hb	Results returned by post. Report results on telepath.	This sample was analysed at: Clinical Biochemistry, Glasgow Royal Infirmary	2 weeks (10 days) Mean turnaround time 3.3 days
Vitamin B6 (pyridoxine) (red cell PLP)	LVTB6 - adds VTB62R and SA1R JVTB6 - adds VTB62R and JCHM1L.	Lithium heparin (no gel) or EDTA tube. Gel tubes not suitable. Preferably fasting. Protect from light (stable for 1h in direct sunlight, or 72h in ambient light). If sample can be sent so as to arrive in Glasgow within 72h of collection, store whole blood (ambient) and send whole blood (minimum 1 mL). Otherwise, centrifuge, remove plasma and buffy coat and freeze packed red cells at -20, minimum 400 uL. B2 can be measured on the same sample. For diagnosis of hypophosphatasia, EDTA plasma is required (600 uL). Fasting sample required. Separate and store plasma at -20. Write 'plasma PLP/PA ratio' on request form. NOT vit B6. Light sensitive.	1 mL whole blood or 600 uL plasma for ? hypophosphatasia.	See left	First class post (ambient)	Yes - vetting by DB required. Indications: malabsorption, on isoniazid, penicillamine and hydrocortisone, sore tongue/mouth, anaemia, hyperhomocysteinaemia. If hypophosphatasia, need EDTA plasma.	Glasgow Royal Infirmary	Department of Clinical Biochemistry, Macewen building, Glasgow Royal Infirmary, Castle Street, Glasgow, G4 0SF	https://www.trace-elements.co.uk/ Duty Biochemist 0141 242 9500, option 2 STEMDRL@ggc.scot.nhs.uk Anthony.Catchpole@ggc.scot.nhs.uk	Analysed once weekly or more often, no specific day.	Send Mon - Thurs	Red cell PLP: 250 - 680 pmol PLP/g Hb <200 pmol/g Hb (At risk of deficiency) >2000 pmol/g Hb (over supplementation) >4000 pmol/g Hb (risk of toxicity) Plasma (for diagnosis/investigation of hypophosphatasia) PLP 20 - 140 nmol/L PA 3 - 60 nmol/L PLP:PA ratio <5	Results returned by post. Report results on telepath.	This sample was analysed at: Clinical Biochemistry, Glasgow Royal Infirmary	2 weeks (10 days) Mean turnaround time 4.5 days
Vitamin C	Superset LVITC adds VTC2R and SA1R Superset JVTIC adds VTC2R and JCHM1L.	lithium heparin without gel. Should be protected from light. Ideally process within 1h of sample collection (accept up to 3h). MPS tubes stored in freezer. Adults: centrifuge sample and add 500 uL plasma to adult MPS tube containing 200 uL MPS. Mix. Freeze. Paediatrics and small samples: centrifuge sample and add 250 uL plasma to paed MPS tube containing 100 uL MPS. Mix. Freeze. Cuenq et al, ACB 2015, 52(2).	250 uL	freezer	Courier on dry ice	vetting by DB required Not routinely sent from primary care due to delay Add CRP to serum request.	Rotherham	Department of Biochemistry, The Rotherham NHS Foundation Trust, Moorgate Road Rotherham S60 2UD	Rotherham Biochemistry secretary: 01709 424051 Duty Biochemist 0141 242 9500, option 2 For MPS tubes: emily.watts@nhs.net, holly.neill@nhs.net, richard.eyre@nhs.net	Run weekly but not on any particular day.	Results returned by post. Report results on telepath.	This sample was analysed at: Clinical Biochemistry, Rotherham Hospital, Rotherham.	ZB412 Plasma vitamin C is low in smokers.	on demand, usually 7 days	
Vitamin K (and PIVKA-II)	VTK2R Superset LVITK - adds VTK2R and SA1R Superset JVTIK - adds VTK2R and JCHM1L.	Serum, protect from light. Vitamin K is sensitive to UV light and levels fall rapidly upon exposure to a strong UV source. Ideally samples should be light protected (e.g. wrap in foil) as soon as possible. A few hours' exposure to normal indoor lighting should not significantly affect results.	1 mL	fridge	First class post (ambient)	vetting by DB required	Synnovis > was Viapath (St Thomas' Haemostasis and Thrombosis lab)	Nutrastasis Unit 4th floor North Wing St Thomas' Hospital Westminster Bridge Road London SE1 7EH	Dr Agata Sobczynska-Malefora, Consultant Clinical Scientist, 0207 188 9543 nutrastasis lab 0207 188 8815 haemostasis lab 0207 188 2799 - can email copy reports. GSTS GSTS-4h-thrombosis@nhs.net Pricing etc: russell.strickson@viapath.org Synnovis enquiries 0204 513 7300 option 2 customerservices@synnovis.co.uk	Mon - Thurs	Vitamin K: 0.15 - 1.55 ug/L PIVKA-II: 17.36 - 50.50 nMol/mL	Results returned by post. Report results and comments on telepath.	This sample was analysed at: Haemostasis Laboratories, St Thomas's Hospital, London	VTK2R3: PIVKA-II (undercarboxylated FII, functional marker of vitamin K status) within the reference range indicating adequate Vitamin K status in respect to coagulation function if present. VTK2R2: Serum Vitamin K is below the lower limit of the reference range (undetectable) suggestive of very low tissue stores. PIVKA-II (undercarboxylated FII, functional marker of vitamin K status) is raised above the upper limit of the reference range, consistent with low tissue stores and showing impairment of FII carboxylation, at a level that may be clinically significant. Results indicate Vitamin K deficiency, suggest Vitamin K1 supplementation. VTK2R1: Vitamin K1 within the reference range, suggestive of adequate tissue stores. PIVKA-II (undercarboxylated FII, functional marker of vitamin K status) is slightly elevated above the upper limit of the reference range, however this level is clinically insignificant to coagulation.	10 working days
Warfarin	Book in as PROB1L (comment NRSOT) & SA1R	serum or citrated plasma	1 mL	Freezer	First class post (ambient)	Yes - vetting by DB required.	Synnovis > was Viapath (St Thomas' Haemostasis and Thrombosis lab)	Nutrastasis Unit 4th floor North Wing St Thomas' Hospital Westminster Bridge Road London SE1 7EH	Clinical Scientist, 0207 188 9543 Nutrastasis lab 0207 188 8815 Haemostasis lab 0207 188 2799 Pricing etc: russell.strickson@viapath.org Synnovis enquiries 0204 513 7300 option 2 customerservices@synnovis.co.uk			mg/L		10 working days	
White cell enzymes (WCE)	Superset RWCE adds WCE1R & SA1R	EDTA whole blood. Needs to arrive at Willink within 72h of collection.	3 mL (ideally 5 mL)	fridge	First class post (ambient)	Send all if > 3mL. Please check volume!	Willink	Willink Biochemical Genetics Laboratory, Manchester Centre for Genomic Medicine, 6th floor, pod 1, St Mary's Hospital, Oxford Road, Manchester, M13 9WL	Duty Biochemist at Willink - 0161 7018612 Willink lab 0161 7012306 lysosomal disorders: Heather.Church@nhs.net Enquiries for copy reports: mlt.willink-enquiries@nhs.net	Must reach the Willink within 72h of collection. Only send on mon / tue / wed.	Results returned by post. Upload report to PPM. Report on telepath with PPM coded comment.	This sample was analysed at: Willink Unit, Royal Manchester Children's Hospital	4 weeks (lab handbook)		
Xanthine - See Purines & Pyrimidines															
α-galactosidase (confirmatory test for Fabry disease)	AGSD1R. Also adds SA1R. Supersets LAGSD - adds AGSD1R and SA1R. JAGSD - adds AGSD1R + JCHM1L.	EDTA whole blood, to reach the Willink within 72h of venepuncture.	3 mL	fridge	First class post (Mon - Thur only) Must reach lab within 72 h of collection	Yes - vetting by DB required.	Willink	Willink Biochemical Genetics Laboratory, Manchester Centre for Genomic Medicine, 6th floor, pod 1, St Mary's Hospital, Oxford Road, Manchester, M13 9WL	Duty Biochemist at Willink - 0161 7018612 Willink lab 0161 7012306 or 0161 70121378 Enquiries for copy reports: mlt.willink-enquiries@nhs.net	Send upon arrival, Mon - Thur		plasma: 3-20 nmol/mL/h leucocytes: 10 - 50 nmol/mg/h	Results returned by post. Report results on telepath.	This sample was analysed at: Willink Unit, Royal Manchester Children's Hospital	1 week
α-glucosidase (suspected Pompe disease)	AGLS2R - also adds SA1R. Supersets LAGLS - adds AGLS2R + SA1R. Supersets JAGLS - adds AGLS2R + JCHM1L.	EDTA whole blood		fridge	First class post (Mon - Thu only) Must reach lab within 48h of collection	Yes - vetting by DB required.	Willink	Willink Biochemical Genetics Laboratory, Manchester Centre for Genomic Medicine, 6th floor, pod 1, St Mary's Hospital, Oxford Road, Manchester, M13 9WL	Duty Biochemist at Willink - 0161 7018612 Willink lab 0161 7012306 or 0161 70121378 Enquiries for copy reports: mlt.willink-enquiries@nhs.net	Send upon arrival, Mon - Thur		3 - 20 nmol/mg/h - acarbose 2 - 15 nmol/mg/h - acarbose	Results returned by post. Report results on telepath.	This sample was analysed at: Willink Unit, Royal Manchester Children's Hospital	2 weeks
β-carotene	BCAR1R & SA1R	serum or heparin plasma. Separate and keep serum / plasma in the dark.	0.6 mL	freezer, light-protected	Courier on dry ice	Yes - vetting by DB required.	St Helier Hospital	Chemical Pathology Department, 3rd floor, block D, St Helier Hospital, Whythe lane, Carshalton, Surrey, SM5 1AA	Mr Hitesh Gokani, 0208 296 3360, h.gokani@nhs.net davidfernandes@nhs.net esth.bloodscience@nhs.net (typo?)	Send upon arrival, Mon-Thurs		0.19 - 1.58 umol/L	Results returned by post. Report results on telepath.		21 days (letter)

Price charged by referral lab (£)	Notes on price	method	EQA	ICE code	ICE pop-up text	NPEX available / set up?	Other notes
33.28	2022	IDS ISYS method since 11/1/21	DEQAS	L12SD J12SD	(not searchable, available under Adult Endo > Bone)		Also available at Doncaster (see email) put on ICE end of Sept 2021. made non-searchable a little while after.
11.73		Waters Acquity UPLC-Quattro Premier XE liquid chromatography-tandem mass spectrometry (LCMS/MS)					
25.02		Tandem Mass Spectrometry					
4.17		Roche immunoassay		Not requestable on ICE	NA - not available to request on ICE	Yes	went live 3 Oct 2022. Siemens reimbursing up to 200 / week.
103.39	2023	Agilent GCMS		Not on ICE 13/03/23	Not on ICE 13/03/23		Used in diagnosis of Smith-Lemli-Opitz syndrome. Includes quantitative measurement of 5-dehydrocholesterol and cholesterol. Also includes a full sterol profile which can detect the presence of Desmosterol, Lathosterol, Lanosterol, 8(9)-cholestenol, and the 4-methyl-sterols.
18.91	2023	Sebia Hydrasys Phoresis System, supplier method measurement by gel electrophoresis/ Lectin binding		LAPIE / JAPIE	No pop up (09/03/2023)		
8.75	2023	In house documented procedures based on Abbott Architect i-2000SR		Reference AFP not requestable on ICE	NA - not available to request on ICE		Sent alongside CSF for AFP and hCG analysis.
38.33	2022	HPLC using the Perkin Elmer Photo Diode Array (PDA)		LAMIO / JAMIO	None		
		Electrophoresis (Helena Biosciences)					
				NA	NA - not available to request on ICE	Not set up	Introduced as a sendaway May 2023.
		ICP-MS, Thermo iCap-Q					
44.38	2022	Beckman Access CMA	UK NEQAS	Not requestable on ICE	NA - not available to request on ICE		
8.95	2022	Abbott Architect Chemistry (spectrophotometric)		LAPLA1 / JAPLA1	Only routinely available for lipid clinic, requests from other locations will only be processed if discussed with the Duty Biochemist		
8.95	2022	Abbott Architect Chemistry (spectrophotometric)		LAPLB / JAPLB	Only routinely available for lipid clinic, requests from other locations will only be processed if discussed with the Duty Biochemist		
180.20	2021						
							See BSF2RAD029 - centrifuge use in pathology R&D.
							Test no longer available. See entry for copeptin
							Batten disease aka Neuronal Ceroid Lipofuscinoses. Measures enzyme activity of PPT and TPP.

		HPLC with UV/vis detection					Not accredited - research purposes only. Changed address to Institute of Neurology from 6/7/21		
58.09	2022	Radioimmunoassay (Wallac/LKB Multigamma counter)					Please note, results should be interpreted along with the serum LH, FSH and TSH results and renal function tests. ASU levels may be raised mid-cycle, and also in renal failure.		
37.51	2022	Brahma Kryptor using fluorescent immunoassay		LCOPT / JCOPT	No pop up but test named 'Copeptin - Endocrinology Only'		Copeptin has replaced measurement of AVP from 5, 10, 15. https://secure.newcastlelaboratories.com/test-directory/test/Copeptin/ Please file all reports in Carys' green folder.		
31.23		LCMS cortisol: £14.88 (2023), £16.35 (2023)	LCMS	LCODX (not searchable, on Endo tab only)	No pop-ups	Yes			
31.67	2022	Electrophoresis using the Sebia system		Not requestable on ICE	NA - not available to request on ICE		Used to be sent to GOSH. Send to Charing Cross from 1st March.		
8.75	2023	In house documented procedures based on Abbott Architect i200SR		RAFPC	No pop ups (27/03/23)		See also CSF hCG. Should also be sent with serum sample		
40.72	2020	LC-MS	inter-laboratory comparison scheme				Stopped doing in-house in 2020. Changed address to Institute of Neurology 5/7/21.		
8.75	2023	in-house RIA		LHCGC / JHCGC	No pop ups (27/03/23)		See also CSF AFP. Should also be sent with a serum sample.		
438.00	2019	HPLC with electrochemical or fluorescence detection	ERNDIM				Clinical team should complete two forms - one for Neurometabolic Unit at Queen Square and one for our records. Analytes measured: pyridoxal phosphate, homovanillic acid, 5-hydroxyindoleacetic acid, HVA:5-HIAA ratio, 5-methyltetrahydrofolate, dihydrobiopterin, tetrahydrobiopterin, total neopterin Changed address to Institute of Neurology from 5/7/21. (from national hospital for neurology & neurosurgery) Sept 2022 - autoreply for email indicates they are currently unable to meet their quoted TAT. Oct 2022 - not UKAS accredited, EIS in progress.		
50.00	2023	Radioimmunoassay	No EQA	Not on ICE	Not on ICE				
20.75	2023			Not on ICE	Not on ICE		Not UKAS accredited.		
		Jasco V650 Spectroscopy					No longer offered. Advise clinician to consult NPIS or tobase. Have asked DM to disable. ? Can measure cyanide or thiocyanate or isocyanate in urine at HSE lab, Buxton? https://www.hsl.gov.uk/media/73350/1510055%20analytical%20services%20booklet%202017_18.pdf		
12.95	2022	Roche Tina-QUANT	Equalis EQA scheme				eGFR by CKD-EPI ₁₈₅ equation reported for adults		
							for peroxisomal disorders. No information in the Willink lab handbook.		
112.00	2021	The glucose liberated from lactose, sucrose and maltose is quantitated using a glucose oxidase reaction followed by reaction of the hydrogen peroxide product with 4-hydroxyphenylacetic acid (4-HPAA), which is oxidised to a highly fluorescent compound.					Not UKAS accredited.		
28.78	2022		No EQA scheme available						
							Screen for risk of 5-fluorouracil toxicity for Oncology patients. Reports should go in the internal mail to Tracy Scott, Genetics, Ashley Wing, Block 10, SJUH.		
33.31		flow cytometry				Yes	screen for hereditary spherocytosis not recommended for use on infants who are <1 year old as there is an increased likelihood of a false positive result.		

169.28	€195 (2022) converted to GBP 10/5/23	GC-FID			No			
44.15	2023	MS			Not on ICE	Not on ICE		
234.00	E234 if within normal working hours. E520 outside normal working hours. (2022)	GC		LEGLY / JEGLY		available	Link for label: http://www.cityassays.org.uk/swbhtoxology/index_html_files/UrgentToxicology/SampleLabelSWBH.pdf	
		GCMS						
							for contraceptive implants which cannot be located.	
52.42	£52.42 from 1 Jan 2023. Previously covered by Sanofi.	Enzyme assay with fluorescent detection using Biotech Synergy Microplate reader					Samples from female patients are referred from Willink to Archimed Life in Vienna for testing, and the report & RR will be different.	
34.06	2022	Immupoints Immunoassay	None	FGFR	Fasting sample required. Patient must not be ferritin deficient. Sample should be sent to the lab within one hour of collection. 6/3/23 (Note - 1 hour stated so that intact can be added if required)		Not UKAS accredited.	
39.22	2022	Radioimmunoassay Diasorin Liaison Immunoassay	None	FGFI	Fasting sample required. Patient must not be ferritin deficient. Sample should be sent to the lab within one hour of collection. 6/3/23		Not UKAS accredited.	
55.14	2022	HPLC Varian fluorescence Perkin Elmer Flexar		LFLEC / JFLEC	None		Also available at Liverpool Children's hospital	
85.76	FFA £65.92 (2022) B.OHB £19.84 (2022)	Both FFA & BOHB: Abbott c8000 analyser, detected by Photometry		LFAP/JFAP	*This test is only available under special circumstances. Please click on More info... If you wish to proceed please click on Yes * More info button links to T&T homepage 17/01/23		Free fatty acids also known as non-esterified fatty acids. Moved from Royal Hospital for sick children (Glasgow) to Edinburgh as of July 2019.	
1.69	2019	Measurement by electrochemiluminescence immunoassay (Roche Cobas)	UK NEQAS scheme for prostate specific antigen (PSA).				Ratio of free bound PSA High dose biotin may cause false low results for this assay. Please discuss if further information is required.	
12.75	2019	Beckman AU5800 Chemistry analyser with RANDOX enzymatic assay					ICE request has a pop-up box: "does the diabetic patient have an Hb variant or other condition that makes HbA1c unreliable" - information transcribed to telepath. Previous subcomment upon assay reformulation: Due to a reformulation, fructosamine results are now on average 25% lower (from 14/02/19). Predicted HbA1c values have been adjusted in line with this change. This is an interim measure pending revalidation of the equation. Although this adjustment increases total error, in-house checks show the quoted range is comparable with previous.	
		LC-MS/MS	Yes - LGC TDM				Urine gabapentin (drugs of abuse indications) available at block 46, SLM Therapeutic drug monitoring of gabapentin not recommended.	
80.00	2023	GC-MS	Special assays Urine ERNDIM	RGATU	Remember to put spare labels for the laboratory in the bag with the sample(s).		a.k.a. galactokinase deficiency screen, congenital cataracts screen	
200.00	2023	HPLC-MS/MS from 4/1/2021 liquid scintillation counter-LKB-1209-C14 radioactive conversion of labelled substrate to product using OPAE-oxidase ion exchange chromatography followed by radiometric detection and quantitation	Sample Swap	RGALK	No pop-ups		Indication: cataract screen, galactokinase deficiency An easier screen for kinase deficiency is urine galactitol	

60.30	2022		NA	RGAI1P	yellow banner: important contact lab before venipuncture	galactosaemia monitoring		
125.00					available	Not UKAS accredited.		
57.00	2022	in-house RIA		LGAST / JGAST	ICE pop-up: sample must be collected after an overnight fast, and must reach the laboratory within 15 minutes of collection.	Samples should be sent to the Charing Cross address even though they are analysed at Hammersmith.		
97.00	2022	in-house RIA		LGUTH / JGUTH	banner: gastrin, glucagon, pancreatic polypeptide, somatostatin, vasoactive intestinal peptide. Pop-up: Gut hormones profile: sample must be collected into a chilled tube and transferred to the laboratory on ice IMMEDIATELY. Please note this test(s) will only be performed if appropriate clinical details are supplied. Has the patient fasted? Yes/No (request allowed either way)	Panel includes VIP, PP, gastrin, glucagon, CART, somatostatin, chromogranin A, chromogranin B. If request is for chromogranin A only, send to Sheffield. Chromogranin A & B / gut hormones go to Charing Cross. Samples should be sent to the Charing Cross address even though they are analysed at Hammersmith.		
108.59	2021	Enzyme assay using Perkin Elmer fluorescent spectrophotometer						
8.75	2023	in-house RIA (they also have an immulite method)		Reference HCG not requestable on ICE	NA - not available to request on ICE	Sent alongside CSF for AFP and HCG analysis.		
		Serum by Immulite Urine by in-house RIA						
31.12	2023	Beckman Coulter ELISA		INBB2R	No pop ups 27/02/23			
61.59	£23.19 (insulin, 2022) £38.40 (C-peptide, 2022)	Merodia Insulin Enzyme Linked Immunosorbent Assay (ELISA)		LINSL / JINSL	This test is for the investigation of unexplained hypoglycaemia. Please request and send a concomitant sample for plasma glucose, or provide a point-of-care glucose meter result in the clinical details. Requests are vetted by the duty biochemist. 15/2/23			
38.40	2022	Biomerica Isletest ELISA		IINS	None 15/2/23			
38.40	2022	in-house competitive RIA		LIGF2 / JIGF2	None 15/2/23	Can also request IGF-1 to determine IGF1:I ratio There was a known delay to processing results in March/April 2020. There is a known delay to processing samples in Oct/Nov/Dec 2022 due to reagent supply issues. The Guildford team are working up a IIS assay.		
38.40	2022	IDS iSYS, chemiluminescence		LIGFP / JIGFP	None 15/2/23	Reference ranges need updating in telepath - some age related ranges in but not all correct and not gender specific		
26.00	2022	Beckman Coulter AU480. Enzyme immunoassay method.		LLAMO / JLAMO	None	Change in methodology and lower limit of reporting from 15/3/21		
16.00		Immunoassay on AutoDELFIA						
26.00	2022	Beckman Coulter AU480. Enzyme immunoassay method.		RLEVE	None			
1.69	2019	spectrophotometry (Roche Cobas analyser)						
36.75	2022	In house assay using ultracentrifugation (Beckman) and Roche cholesterol/triglyceride assays (Cobas 8000) also lipoprotein fractionation using Sebia Hydrasys electrophoresis		LLIPFR / JLIPFR	Only routinely available for lipid clinic, requests from other locations will only be processed if discussed with the Duty Biochemist			

15.79	2022	Roche Cobas 8000 c702 Module : Immunoturbidimetric	LLIPA / JLIPA	Only routinely available for lipid clinic, requests from other locations will only be processed if discussed with the Duty Biochemist					
		in-house method using fluorimetry							For Wolman Disease / Cholesterol Ester Storage Disease
27.89	2022	LC-MS/MS	LMADP / JMADP	Collect from the patient after 30 minutes in the supine position. Sample must arrive in the lab within 30 minutes of collection.					
125.00		£125 (2022) if within normal working hours. £300 if out of hours	Birmingham: Shimadzu headspace- GC-FID				available (alcohol, methyl)	Link for label: http://www.cityassays.org.uk/swbhtoxicology/index_html_files/UrgentToxicology/SampleLabelsWBH.pdf	
27.18	2023	LC-MS/MS (ESI)		Not on ICE	Not on ICE				
		HPLC using the Perkin Elmer Photo Diode Array (PDA)						Please note: this assay is not sensitive enough for use in brain stem death testing. Currently unavailable in Cardiff. UKAS-accredited at Birmingham Heartlands (blood or urine, LC-MS/MS). Walton Centre (serum, LC-MS/MS), Leicester (blood, LC-MS/MS)	
38.33	2022	GC-MS			Not on ICE				
106.38		Mucopolysaccharides £104.35 (2021) Oligosaccharides & sialic acids £86.21 (2021) Quantitative sialic acids £106.38 (2021)	urine glycosaminoglycans by 2D electrophoresis oligosaccharides & sialic acid residues by thin layer chromatography					Abnormal results for urine glycosaminoglycans, oligosaccharides or sialic acids found in Leeds are confirmed by analysis at the Willink. Please forward reports to Rob Barks in block 46.	
								This service is looked after by histopathology.	
75.00	2022		LGC International mycophenolate PT scheme	Not requestable on ICE	NA - not available to request on ICE			Not under the scope of UKAS accreditation.	
17.85	2022	Roche Cobas 6000 using immunoturbidometry and electrochemiluminescence	UK NEQAS scheme for tumour markers (CA-antigens)	LNSE / JNSE	No pop-ups 09/02/2023	available (Sheffield Teaching Hospitals - Blood Sciences) (Serum neuron-specific enolase measurement)		Diagnosis or monitoring of neuroendocrine tumours (neuroblastoma, SCLC, islet cell carcinoma, APUD, melanoma)	
26.30		ICP-MS							
38.33	2022	HPLC using the Perkin Elmer Photo Diode Array (PDA)		LNATR / JNATR (Nortriptyline only)	None				
		HPLC using the Perkin Elmer Photo Diode Array (PDA)						diclofenac, ibuprofen, naproxen and mefenamic acid. Stopped offering the screen in 2019. Heartlands hospital offer some NSAIDs. Can send to Birmingham for TOF-MS unknown drug screen	
28.76	2023	Tandem Mass Spectrometry		LOESE / JOESE	**PLEASE NOTE** This is not a front line test and should only be requested after consultation with the laboratory				
26.00	2022					available		No longer offered at Cardiff as of early 2020. Now sent to Birmingham City tox lab.	
		Randox Daytona+ (changed from previous method 25/1/22)	None available. Sample exchange.					Not currently analysing samples due to unavailability of reagents. Samples will be stored frozen. 21/10/22.	

38.33	2022	HPLC using the Perkin Elmer Photo Diode Array (PDA)		Not requestable on ICE			Oxcarbazepine is rapidly metabolised to 10-hydroxycarbazepine and it is this metabolite that is routinely monitored. Advised in Dec 2020 that they no longer measure oxcarbazepine.		
90.78	2021	LC-MS/MS to measure cholestane-3β, 5α, 6β-tiol					Plasma oxysterol will remain available primarily for monitoring of ERT / HSCT in patients with Lysosomal Acid Lipase Deficiency (LALD)		
60.00	2022						first-line screen for Niemann-Pick disease type C (NPC).		
		In house assay using Uvikon Spectrophotometer							
21.85	2023	Radioimmunoassay					Notified of address change 27/7/21		
120.00	2019	A dynamic function test. Measures phenylethylamine					liaise with Rob Barski regarding any requests. Protocol available in Neurometabolic Unit user manual: https://www.sdh.nhs.uk/OurServices/ServiceA-Z/NeuroNMU/Documents/Neurometabolic%20Unit%20User%20manual.pdf Changed address to Institute of Neurology from 5/7/21.		
							An immunology test. Please return results to Immunology Clinical Scientists (Anna McHugh, Sheetal Maisana)		
20.75	2023	Beckman Coulter ELISA Innotest enzyme immunoassay		Not on ICE 27/03/23	Not requestable on ICE				
180.15	2023	Shimadzu GCMS		Not on ICE 13/03/23	Not on ICE 13/03/23		Not yet on ICE For "perissomal biogenesis disorder. Please provide information on clinical context and information on VLCFA results in order to facilitate appropriate interpretation.		
52.42	£52.42 from 1 Jan 2023. Previously covered by Sanofi.	Enzyme assay with fluorescent detection using Biotech Synergy Microplate reader					Pompe = GSD II		
							Urgent PBGs are analysed at block 46. Otherwise sent to Cardiff.		
21.78	2022 prices: plasma porphyrin screen £21.78 RBC porphyrin screen £22.24 RBC total porphyrin £36.97	Agilent HPLC 1100, Perkin Elmer Fluorimeter, Spectro-fluorimetry, North star spectrophotometer, solvent extraction spectroscopy, Helena Protofluor-z fluorimeter	All assays registered for RCPA-AACB Australia and EPNET EQA	LPORBR	Info on protecting from light, request for specific clinical details, test requires 2x EDTA, link to T&T				
95.62	2022 prices: total faecal porphyrin £41.20 faecal HPLC £54.42	Agilent HPLC 1100, Perkin Elmer Fluorimeter, Spectro-fluorimetry, North star spectrophotometer, solvent extraction spectroscopy, Helena Protofluor-z fluorimeter	All assays registered for RCPA-AACB Australia and EPNET EQA	LPORFR	Info on protecting from light, request for specific clinical details, test requires sample in a universal, link to T&T Sentence about phlebotomy				
21.78	2022 prices: total urine porphyrin £21.78 urine PBG £44.37 urine ALA £46.24 urine HPLC £54.42	Agilent HPLC 1100, Perkin Elmer Fluorimeter, Spectro-fluorimetry, North star spectrophotometer, solvent extraction spectroscopy, Helena Protofluor-z fluorimeter	All assays registered for RCPA-AACB Australia and EPNET EQA	LPORUR	Info on protecting from light, request for specific clinical details, test requires 10L in a sterile universal, link to T&T, not an urgent test, if required urgently, request urine PBG Sentence about phlebotomy		Urgent urine PBGs may be analysed at block 46 (SU), contact Carys Lippatt or Liz Fox. Full porphyrin screen - no longer offered at SUH, send to Cardiff.		
16.68	2023	LC-MS		Not on ICE	Not on ICE		Used to send to Royal Brompton but not UKAS accredited. Changed to Wythenshawe in 2019.		
23.56	2022		Sample Swap	LP1NP / JP1NP	"Please ignore the request for 2 tubes, please only send one tube and send the other label to the lab for aliquoting" 6/2/23		ok to send room temp First class post, but may as well send with samples for CTX.		

50.00	2023	Isoelectric Focusing using PhastGel Dry IEF		LTGLY / JTGLY	This test is for the investigation of Carbohydrate Deficient Glycoprotein Syndrome - only available to neonates older than 3 weeks. Maternal transferrin in younger neonates may mask any deficiency. Do not request if you want to measure transferrin. 11/04/2023		Indication: Congenital disorders of glycosylation (CDG). This is NOT a test for alcohol abuse.		
25.16	2022	Brahma Kryptor using fluorescent immunoassay		LTRAB / JTRAB	None 24/01/23		advised of delays from early Jan onwards. Sending samples to another lab until instrument is replaced.		
98.00	2022		Yes				Requires purchase order number before Buxton lab will analyse.		
£75.69 (2022)		Electrospray mass spectrometry	No EQA and no sample exchange. Only accredited UK provider.	LBACU / JBACU	No pop ups 13/03/2023		For the diagnosis of the primary bile acid biosynthesis disorders, for further investigations of probable Peroxisomal disorders, and for diagnosis of Cerebrotendinous Xanthomatosis		
150.00	£80 (website, 2019) £150 as of Sept 2021	ESI-MS/MS		JBACU / LBACU			Switched back to UCL March 2023		
62.50	2022	UPLC-MS/MS		Not requestable on ICE	NA - not available to request on ICE	available (urine cannabinoids screening test)	Cannabinoid screen (NOIDS) is for the six most popular cannabinoids in use in the UK: 3rd generation NOIDS - 5F-AKB48, 5F-PB22, MDMB-CHMICA, MDMB-CHMINICA, 4th generation NOIDS - 5F-ADB, AMB-FUBINACA. Detection window approx. 1-2 days.		
		LC-MS	WEQAS				to be brought in house?		
11.85	2023 - website	Roche Cobas 8000 modular system					Dec 2019 "due to a temporary change in equipment for measurement of C-peptide, the LoQ for the assay will be greater than our routine assay from 28/10/19 for approximately 6 weeks. Temporary change in reporting limits: plasma / serum: 3 pmol/L to 7 pmol/L, urine: 0.03 nmol/L to 0.07 nmol/L.		
35.00		LC-MS/MS				? (Drugs of abuse urine screening test (Panel 1.2.3))	This is a more extensive panel for DoA that is offered by SLM block 46. Samples are usually referred following testing at SLM block 46. See http://www.cityassays.org.uk/webtoxicology/ or http://www.cityassays.org.uk/webtoxicology/drugs%20of%20abuse%20panel.html for list of drugs detected.		
		gas chromatography – mass spectrometry	None available.						
12.83	2023	Perit's reaction	Neqas Cytochemistry (Fe)	LHSID / JHSID	No pop up (09/03/2023)	in progress	Previously done by SLUH haematology. Became a sendaway test in 2021.		
169.28	€ 105 (2022) converted to GBP 10/05/23.	GC-FID				No	Clinical indications: Transaldolase deficiency, ribose 5-phosphate isomerase deficiency		
239.55	2023	GC-MS		LSTPU / JSTPU	No pop up but banner across requesting page stating 'Not routinely available - contact steroid lab x64717' 21/2/23		Usually sent directly from Endocrinology, block 46, SLM		
135.50	2022	UPLC-TOF-MS. Detects DoA, prescription drugs, OTC meds.		Not requestable on ICE	NA - not available to request on ICE	available (Toxicology Screen (LC-QTOF-MS / time-of-flight))	qualitative analysis, not quantitative		
152.45	2023	Shimadzu Headspace GCMS		Not on ICE 13/03/23	Not on ICE 13/03/23		for diagnosis of Fish odour syndrome, aka Trimethylaminuria. (FMO3 gene defect)		
250.00	2021	ESI-MS/MS					diagnosis of pyridoxine (Vitamin B6) responsive seizures. Queries regarding sample stability should be referred to the institute of Child Health. Assay currently has technical difficulties (since Sept 2019). Large backlog. Not currently available due to the University closure, except very urgent requests, which should be discussed with Peter Clayton at UCL.		

55.00	2023	ELISA		Not on ICE	Not on ICE		May be requested in 7POEMS		
94.62	2023	Schmadzu GCMS (Q2020)		LVLFA / JVLFA	No pop ups 13/03/2023		For investigation of peroxisomal disorders such X-ALD, Zellweger syndrome, infantile Refsum's, Adult Refsum's, RCDP, D-bifunctional protein deficiency etc. Includes: Docosanoate (C22), Tetraosanoate (C24), Hexacosanoate (C26), C24/C22 ratio, C26/C22 ratio, Phytanate, Pristanate		
30.15	2023	HPLC Fluorimetric Detection (chromsystems)		LVTB1 / JVTB1	Please note the sample must be protected from light. If not collecting the blood yourself, please write "this sample must be protected from light" on the request card for the attention of the phlebotomist. 07/02/23		RR changed 12/10/2018. Updated in telepath		
20.00	2022	Waters HPLC System with fluorimetric detection	INSTAND (whole blood EDA scheme), Disseldorf, Germany (four times per year).	LVTB2 JVITB2	yellow banner: do not use gel separator tubes. Pop-up: If not collecting the blood yourself, write "this sample must be protected from light" on the request card for the attention of the phlebotomist.				
20.00	2022	Waters HPLC System with fluorimetric detection	INSTAND whole blood/plasma EDA scheme, Disseldorf, Germany (four times per year).	LVTB6 JVITB6	Pop-up: If not collecting the blood yourself, write "this sample must be protected from light" on the request card for the attention of the phlebotomist.				
25.00	2021								
114.10		Vitamin K1 E80.93 (2023) PIVKA II E33.17 (2023)	Vitamin K by reversed phase HPLC with post column in-line chemical reduction and fluorescence detection. PIVKA II by Abbott Architect 2000SR, Chemiluminescent microparticle immunoassay using in-house procedures	LVTIK / JVITK	Please note the sample must be protected from light. If not collecting the blood yourself, please write "this sample must be protected from light" on the request card for the attention of the phlebotomist. 28/02/23		reference range for PIVKAII has been updated in telepath (2018)		
210.39	2021. No proc provided in 2023	HPLC with diode array ultraviolet detection		Not on ICE 28/2/23	Not on ICE 28/2/23		Requests usually via blood bank?		
236.65	2021	Enzyme assay using Perkin Elmer fluorescent spectrophotometer					Lysosomal enzymes assayed: Plasma chitotriosidase (non-specific marker for lysosomal storage disorders); Plasma β -hexosaminidase (Sandhoff disease , I-Cell disease); Plasma β -mannosidase (β-Mannosidosis , I-Cell disease); Plasma β -hexosaminidase A (MUGS) (Tay-Sachs disease); Plasma aspartylglucosaminidase (Aspartylglucosaminuria); Leucocyte β -glucuronidase (Sly disease , MPS VII); Leucocyte β -galactosidase (GM1-gangliosidosis); Leucocyte α -mannosidase (α-Mannosidosis); Leucocyte α -galactosidase (Fabry disease); Leucocyte α -fucosidase (Fucosidosis); Leucocyte acid esterase (Wolman/Cholesterol ester storage disease); Leucocyte arylsulphatase A (Metachromatic Leucodystrophy); Leucocyte β -glucosidase (Gaucher disease); Leucocyte sphingomyelinase (Niemann-Pick types A & B); Leucocyte galactose-2-epimerase (Krabbe Leucodystrophy); Leucocyte N-acetyl- α -galactosaminidase (Schindler disease)		
143.40	2022	Enzyme assay using Perkin Elmer fluorescent spectrophotometer LS55 and LS30					B-hexosaminidase A & B measured as a reference enzyme.		
140.04	2021								
63.61	2019	HPLC with UV detection using Agilent HPLC and Jasco, Thermo AS1000					Contact lab prior to sending a sample		

Test name (& sample type)	Telepath test code
Complex serological investigations and crossmatching	RREF
Positive Kleihauer films (for Flow cytometry)	RREF
Unidentified blood groups (e.g. weak or partial RhD investigations)	RREF
Anti-D and anti-c quantitation	RREQ
Antibody titrations	RREQ
Cold agglutinin screening and titration	RREF
ffDNA screening	FDNA1

Referral code	Lab location	
RREF	RCI Laboratory, NHSBT Barnsley	
RREF	RCI Laboratory, NHSBT Barnsley	
RREF	RCI Laboratory, NHSBT Barnsley	
RREQ	RCI Laboratory, NHSBT Barnsley	
RREQ	RCI Laboratory, NHSBT Barnsley	
RREF	RCI Laboratory, NHSBT Barnsley	
FDNA1	IBGRL Labaoratory, NHSBT Bristol	

Test name (& sample type)	Telepath test code	Referral code
Serum Amyloid A	SAA1R	SHEF1L
Anti-C1q antibody	AC1Q1L	SHEF1L
C1Q	C1Q1L	SHEF1L
C3 Nephritic factor	C3NF1L	SHEF1L
Collagen type II antibody	COL1L	SHEF1L
Parathyroid antibodies	PARA1L	SHEF1L
Salivary antibodies	SAL1L	SHEF1L
AAT Genotype (Send as whole blood EDTA)	AATG1L	SHEF1L
Pituitary Ab	PIT1L	SHEF1L
Gliadin Ab (IgA and IgG)	GLI1L	SHEF1L
Enterocyte Ab	ENT1L	SHEF1L
Insulin Ab	INS1L	SHEF1L
Complement C2	CC21L	SHEF1L
ISAC testing	ISAC1R	SHEF1L
Acetylcholine Receptor antibody	ACR2R	OXFO1L
MUSK antibody	MUSK2R	OXFO1L

Voltage Gated Calcium Channel Ab Serum	VGCS1R	OXFO1L
Voltage Gated Calcium Channel Ab CSF	VCCC1R	OXFO1L
Voltage Gated Potassium Channel Ab Serum	VGKS1R	OXFO1L
Voltage Gated Potassium Channel Ab CSF	VGKC1R	OXFO1L
Fixed NMDA Receptor Ab serum	NMFS1R	OXFO1L
Fixed NMDA Receptor Ab CSF	NMFC1R	OXFO1L
NMO/Aquaporin 4 SERUM	AQP42R	OXFO1L
NMO/Aquaporin 4 CSF	AQPC1R	OXFO1L
Glycine Receptor Ab	GLYR1R	OXFO1L
MOG Ab (serum)	MOGS1R	OXFO1L
MOG Ab (CSF)	MOGC1R	OXFO1L
Anti IgA antibodies	AAB2R	OXFO1L
AMPA & GAB Ab CSF	AMPC1R	OXFO1L
AMPA & GAB Ab Serum	AMPS1R	OXFO1L

Paraneoplastic Ab CSF	CABC1R	OXFO1L
Clust AcR/MuSK/LRP4	CLUS1R	OXFO1L
Anti-GAD Ab CSF	GADC1R	OXFO1L
HMG-CoA Reductase Ab	HCOA1R	OXFO1L
LGI1/CASPR2 Ab Serum	LGCA1R	OXFO1L
LGI1/CASPR2 Ab CSF	LGCC1R	OXFO1L
Meningococcal C	MENC1L	MANC1L
Anti-GM-1 antibody	GM11L	GLAS1L
MAG antibody	MAG1L	GLAS1L
Faecal antitrypsin	AATF1L	LOND1L
Basal Cell Ganglia Ab	BCGA1L	LOND1L
Pneumococcal serotypes	PNES1L	CAMB1L
Adalimumab	ADL1R	EXTE1L

Factor H	FH1L	CAR1L
Factor I	FI1L	CAR1L
Factor B	FB1L	CAR1L

Lab location	Address
Sheffield	Supraregional Protein Reference Unit & Dept of Immunology PO Box 894 Sheffield S5 7YT
Sheffield	Supraregional Protein Reference Unit & Dept of Immunology PO Box 894 Sheffield S5 7YT
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Sheffield	Supraregional Protein Reference Unit & Dept of Immunology PO Box 894 Sheffield S5 7YT
Sheffield	Supraregional Protein Reference Unit & Dept of Immunology PO Box 894 Sheffield S5 7YT
Oxford	Immunology dept Churchill Hospital Headington Oxford OX3 7LJ
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Oxford	Immunology dept Churchill Hospital Headington Oxford OX3 7LJ
Oxford	Immunology dept Churchill Hospital Headington Oxford OX3 7LJ
Manchester	Meningococcal Reference Unit, Manchester Medical Microbiology Partnership PO Box 209 Clinical Sciences Building Manchester Royal Infirmary Manchester M13 9WZ
Glasgow	Dept of Neurology Institute of Neurological Sciences Southern General Hospital 1345 Govan road Glasgow G51 4TF
Glasgow	Dept of Neurology Institute of Neurological Sciences Southern General Hospital 1345 Govan road Glasgow G51 4TF
London (St George's)	PRU / Dept of Immunology Level 2, Jenner Wing, St George's Hospital Tooting, London SW17 OHH
London (Queen Square)	Neuroimmunology and CSF laboratory (NICL), Box 76, 9th floor, Institute of Neurology, Queen Square, London, WC1N 3BG
Addenbrooke's (Cambridge)	Clinical Immunology Level 4, Box 109 Addenbrookes Hospital Hills Road Cambridge CB22 2QQ
Exeter	?

Cardiff	Department of Medical Biochemistry & Immunology, c/o University Hospital of Wales Laboratory (Upper Ground Floor) Cardiff and Vale University Health Board Health Park Cardiff CF14 4XW
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Cardiff	Department of Medical Biochemistry & Immunology, c/o University Hospital of Wales Laboratory (Upper Ground Floor) Cardiff and Vale University Health Board Health Park Cardiff CF14 4XW

SJUH to LGI, fridge	JCHM1L			
SJUH to LGI, frozen	JCHM2L			
SJUH to Block 46, fridge	JCHM1M			
SJUH to block 46, frozen	JCHM2M			
LGI to SJUH, frozen	LSHFJ			
LGI to SJUH, ambient				
LGI to SJ block 46, ambient	LSLMAJ			
LGI to SJ block 46, frozen	LSLMFJ			
LGI to SJ block 46, fridge	LSLMRJ			

updated 2022						
30 min of band 2 time	5.40			20,270 annual salary / 250 working days in a ye		
FCP box	0.42					
Igloo	5.75					
Dry ice	9.28			1/3 of a bag	1 bag costs 27.85	
FCP postage	4.45			20 x 11 x 4 cm, 100g. (these are sent to the po		
overnight UK courier	39.25			(1 parcel 30 cm x 30 cm x 30 cm, 3 kg, UK deliv		
Courier to France	49.29					
						10.27
* CP1448 ALP electrophoresis [referred]						
P2P price Direct access price Non NHS price						
£31.53 £31.17 £47.30						
Constituent tests						
* CP1328 White Cell Enzymes [referred]						
P2P price Direct access price Non NHS price						
£256.75 £253.85 £385.13						
Constituent tests						
✓* CP2441 Methymalonic Acid [referred]						
P2P price Direct access price Non NHS price						
£36.03 £33.54 £54.05						
Constituent tests						
* CP0876 TSH Receptor Ab [referred]						
P2P price Direct access price Non NHS price						
£64.20 £63.47 £96.30						
Constituent tests						

2018 - accreditation status and turnaround

accreditation status 2018:

turnaround time review (samples from 2017):

2019 - full review of referrals service

full service review 2019:

list of tests by external lab:

accreditation check 2019:

turnaround time (data from 2018):

update of info on Tests & Tubes:

2020 - accreditation status and turnaround

Accreditation status 2020:

Turnaround time audit (samples from 2019):

2021 - accreditation status and turnaround

Accreditation status 2021:

Turnaround time audit (samples from 2020):

2022 - full review of referrals service due

Accreditation status 2022:

Turnaround time audit (samples from 2021)

Full service review: (in progress)

Outgoing letters:

Inbound letters & lab handbooks:

Tests and Tubes updates requested:

2023 - accreditation status and turnaround

Accreditation status 2023:

Turnaround time audit (samples from 2022):

[Referred tests accreditation audits\Referral Test Accreditation Status 2018.xlsx](#)

[Referred tests turnaround time audits\Referred tests TAT audit 2018 \(samples from 2017\) JS BSH4AUD076.xlsx](#)

[progress checklist](#)

[lists of tests by lab](#)

[Referred tests accreditation audits\Referral Test Accreditation Status 2019.xlsx](#)

[Referred tests turnaround time audits\Referred tests TAT audit 2019 \(samples from 2018\) EM.xlsx](#)

[T&T update log](#)

[Referred tests accreditation audits\Referral Test Accreditation Status 2020.xlsx](#)

[Referred tests turnaround time audits\Referred tests TAT audit 2020 \(samples from 2019\) EM BSH4AUD097.xlsx](#)

[Referred tests accreditation audits\Referral Test Accreditation Status 2021.xlsx](#)

[Referred tests turnaround time audits\Referred tests TAT audit 2021 \(samples from 2020\).xlsx](#)

[Referred tests turnaround time audits\Referred tests TAT audit 2021 \(samples from 2020\) - report.docx](#)

[Referred tests accreditation audits\Referral Test Accreditation Status 2022.xlsx](#)

[Referred tests turnaround time audits\Referred tests TAT audit 2022 \(samples from 2021\) - report.docx](#)

[Referred tests turnaround time audits\Referred tests TAT audit 2022 \(samples from 2021\).xlsx](#)

[Referred tests 3-yearly full audits\2022 - 2023\2022 referred tests 3-yearly review checklist.xlsx](#)

[Referred tests 3-yearly full audits\2022 - 2023\Letters outbound 2022](#)

[Referred tests 3-yearly full audits\2022 - 2023\Letters inbound 2022](#)

[Referred tests 3-yearly full audits\2022 - 2023\T&T update requests](#)

[Referred tests turnaround time audits\Referred tests TAT audit 2023 \(samples from 2022\).xlsx](#)

Did not continue to update T&T after January 2020 since new website will be taking it's place.

All information on this spreadsheet (referred tests database) is up to date

Information from this spread sheet (referred tests database) will be used to populate the T&T section of the new website.

Analyte	accreditation status 2017	review of accreditation status 2017
11-Deoxycortisol	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
7-Dehydrocholesterol	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Alpha feto protein - CSF	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Alpha-aminoadipic semialdehyde (alpha-AASA)	Not ISO15189 accredited - Research Laboratory	approved - based on continued compliance with primary and secondary selection criteria
Alpha-galactosidase	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Alpha-glucosidase	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Amiodarone	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Amitriptyline/Nortriptyline	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Amylase Isoenzymes	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Antimony	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Apolipoprotein B	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Aryl Sulphatase	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Beta-Carotene	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
beta-galactosidase	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
beta-glucosidase	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Biopterin Deficiency Screen	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria

Caffeine	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Calcitonin	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Carbohydrate Deficient Transferrin (CDT)	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Carboxy-terminal collagen crosslinks (CTX)	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Cardiolipin / Monolysocardiolipin	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Catecholamines (plasma)	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Chitotriosidase	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Cholesterol Ester Storage Disease, Wolman Disease	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Cholinesterase Activity and Phenotype	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Chromogranin A	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Citrate (Urine)	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Clobazam	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Coenzyme Q10 (ubiquinone)	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
C-Peptide	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
C-peptide (urine)	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Creatine Kinase isoenzymes	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Cyanide	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria

Dihydropteridine Reductase deficiency	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Dihydroxy Acetone Phosphate Acyl Transferase	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Disaccharidases	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Duodenal Fluid Enzymes	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Ethylene Glycol	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
FGF 23	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Flecainide	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Free Fatty Acids	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Fructosamine	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Galactitol	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Galactokinase	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Galactose-1-Phosphate	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Gastrin	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Glucagon	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Glycollate	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Gut Hormones	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Hexosaminidase A&B	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Human chorionic gonadotrophin - Molar pregnancy	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria

Human chorionic gonadotrophin (CSF)	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Hydroxybutyrate (3-hydroxybutyrate, Beta hydroxybutyrate)	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Inhibin B	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Insulin	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Insulin Antibodies	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Insulin-like growth factor 2 (IGF-II)	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Insulin-like growth factor binding protein (IGF-BP3)	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Jejunal biopsy	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Ketones	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Lamotrogine	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Levetiracetam	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Lipase	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Lipid Electrophoresis	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Lipid Fractionation	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Macro CK	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Macroamylase	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Metanephrines (Plasma)	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria

Methanol	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Midazolam	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Monoamine Metabolites, folate and pterins	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Muscle Biopsy for Respiratory Chain Enzymes	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Neuronal Ceroid Lipofuscinoses (Batten Disease)	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Neurone Specific Enolase (NSE)	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Nortriptyline/Amitriptyline	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
NSAIDs	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Olanzapine	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Orexin	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Orexin	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Oxalate (blood, dialysate)	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Palmitoyl Protein Thioesterase	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Pancreatic polypeptide (PP)	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Paraquat	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Parathyroid Hormone Related Protein (PTHrp)	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria

Phenylalanine loading tests	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Phytanic Acid	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Placental alkaline phosphatase (CSF)	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Placental alkaline phosphatase (Serum)	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Plasmalogens	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Polyols	Not ISO15189 accredited - Research Laboratory	approved - based on continued compliance with primary and secondary selection criteria
Prednisolone	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Pristanic acid	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Procollagen 1 (P1NP)	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Pro-insulin	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Prostate specific antigen (Free PSA Index)	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Purines / Pyrimidines (blood)	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Purines / Pyrimidines (urine)	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Quantative Sialic acid	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Retinol Binding Protein	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Somatostatin	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Steroids	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria

Stone Analysis (calculi)	CPA accredited, not found on UKAS directory	approved - based on continued compliance with primary and secondary selection criteria
Sulphonylurea (urine)	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Sulphonylureas	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Tay Sachs Diagnostic Test	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
TGN	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Thiocyanate	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Thiopentone	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Thiopurine Methyl Transferase (TPMT)	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Thyroglobulin (Beckman)	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Thyroid Hormone Binding Studies	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Topiramate	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Transferrin Glycoforms/ transferrin isoforms/ isoelectric transferrin/	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Trimethylamine	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
TSH Alpha Subunit	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
TSH Receptor Antibodies (TRAbs)	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Vasoactive Intestinal Polypeptide	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria

Very long chain fatty acids (VLCFA/LCFA)	Lab accredited to ISO 15189 but referral test not in schedule of accreditation	approved - based on continued compliance with primary and secondary selection criteria
Vitamin B1 (Thiamine)	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Vitamin B2 (Riboflavin)	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Vitamin B6	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Vitamin C	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Vitamin D (1,25-OH Vitamin D)	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Vitamin K	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Warfarin	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
White Cell Enzymes	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Xanthine	CPA accredited, not accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Malaria Species	CPA accredited, not accredited to ISO15190	approved - based on continued compliance with primary and secondary selection criteria
Essential Fatty Acids	Not ISO15189 accredited - Research Laboratory	approved - based on continued compliance with primary and secondary selection criteria
EMA binding assay (for QA purposes only - not routine testing)	Test Accredited to ISO15189	approved - based on continued compliance with primary and secondary selection criteria
Urine, blood and faecal porphyrins		

rationale for rejection (where appropriate)	Turnaround time 2017 (due Jan 2018)	
n/a	sendaways TAT audits\BSH4AUD076 Sendaways TAT audit June 2018 (FINAL).xlsx	
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Analyte	full service review 2016 (hyperlink)
11-Deoxycortisol	LH 13/04/2017
7-Dehydrocholesterol	LH 15/2/17
Alpha feto protein - CSF	no response - to chase
Alpha-aminoadipic semialdehyde (alpha-AASA)	no response - to chase
Alpha-galactosidase	MC 10/02/17
Alpha-glucosidase	MC 10/02/17
Amiodarone	LH 06/02/17
Amitriptyline/Nortriptyline	LH 06/02/17
Amylase Isoenzymes	LH 13/04/17
Antimony	LH 18/04/17
Apolipoprotein B	LH 06/03/17
Aryl Sulphatase	MC 10/02/17
Beta-Carotene	MC 07/02/16
beta-galactosidase	MC 10/02/17
beta-glucosidase	MC 10/02/17
Biopterin Deficiency Screen	RL 30/11/2016
Caffeine	LH 15/2/17
Calcitonin	RL 30/11/2016
Carbohydrate Deficient Transferrin (CDT)	RL 7/12/2016
Carboxy-terminal collagen crosslinks (CTX)	LH 07/02/18
Cardiolipin / Monolysocardiolipin	LH 13/04/2017
Catecholamines (plasma)	MC 07/02/16
Chitotriosidase	MC 10/02/17
Cholesterol Ester Storage Disease, Wolman Disease	RL 7/12/2016
Cholinesterase Activity and Phenotype	LH 18/04/17
Chromogranin A	RL 7/12/2016
Citrate (Urine)	RL 7/12/2016

Clobazam	LH 06/02/17
Coenzyme Q10 (ubiquinone)	06/01/2017 RL
C-Peptide	RL 7/12/2016
C-peptide (urine)	MC 06/02/2017
Creatine Kinase isoenzymes	LH 13/04/17
Cyanide	LH 06/02/17
Dihydropteridine Reductase deficiency	RL 30/11/2016
Dihydroxy Acetone Phosphate Acyl Transferase	MC 10/02/17
Disaccharidases	RL 5/12/2016
Duodenal Fluid Enzymes	RL 5/12/2016
Ethylene Glycol	RL 7/12/2016
FGF 23	LH 07/02/17
Flecainide	LH 06/02/17
Free Fatty Acids	RL 7/12/2016
Fructosamine	LH 18/04/17
Galactitol	LH 18/04/18
Galactokinase	LH 18/04/19
Galactose-1-Phosphate	LH 18/04/20
Gastrin	MC 06/02/2017
Glucagon	MC 06/02/2017
Glycollate	RL 7/12/2016
Gut Hormones	MC 06/02/2017
Hexosaminidase A&B	MC 10/02/17
Human chorionic gonadotrophin - Molar pregnancy	RL 7/12/2016
Human chorionic gonadotrophin (CSF)	
Hydroxybutyrate (3-hydroxybutyrate, Beta hydroxybutyrate)	RL 7/12/2016
Inhibin B	no response - to chase
Insulin	RL 7/12/2016

Insulin Antibodies	RL 7/12/2016
Insulin-like growth factor 2 (IGF-II)	RL 7/12/2016
Insulin-like growth factor binding protein (IGF-BP3)	RL 7/12/2016
Jejunal biopsy	RL 5/12/2016
Ketones	RL 7/12/2016
Lamotrogine	LH 06/02/17
Levetiracetam	LH 06/02/17
Lipase	no response - to chase
Lipid Electrophoresis	no response - to chase
Lipid Fractionation	MC 07/02/16
Macro CK	LH 13/04/17
Macroamylase	LH 07/02/17
Metanephrines (Plasma)	RL 5/12/2016
Methanol	RL 7/12/2016
Midazolam	LH 06/02/17
Monoamine Metabolites, folate and pterins	18/04/17 LH
Muscle Biopsy for Respiratory Chain Enzymes	LH 07/02/17
Neuronal Ceroid Lipofuscinoses (Batten Disease)	LH 13/04/17
Neurone Specific Enolase (NSE)	RL 30/11/2016
Nortriptyline/Amitriptyline	LH 06/02/17
NSAIDs	LH 06/02/17
Olanzapine	LH 06/02/17
Orexin	MC 06/02/2017
Orexin	MC 06/02/2017
Oxalate (blood, dialysate)	RL 7/12/2016
Palmitoyl Protein Thioesterase	LH 13/04/17
Pancreatic polypeptide (PP)	MC 06/02/2017
Paraquat	RL 7/12/2016

Parathyroid Hormone Related Protein (PTHrp)	LH 07/02/17
Phenylalanine loading tests	
Phytanic Acid	LH 15/2/17
Placental alkaline phosphatase (CSF)	RL 16/12/2016
Placental alkaline phosphatase (Serum)	
Plasmalogens	LH 15/2/17
Polyols	MC 07/02/16
Prednisolone	RL 5/12/2016
Pristanic acid	LH 15/2/17
Procollagen 1 (P1NP)	LH 07/02/21
Pro-insulin	RL 7/12/2016
Prostate specific antigen (Free PSA Index)	RL 30/11/2016
Purines / Pyrimidines (blood)	RL 5/12/2016
Purines / Pyrimidines (urine)	RL 5/12/2016
Quantative Sialic acid	MC 10/02/17
Retinol Binding Protein	RL 30/11/2016
Somatostatin	MC 06/02/2017
Steroids	LH 07/02/17
Stone Analysis (calculi)	
Sulphonylurea (urine)	RL 7/12/2016
Sulphonylureas	RL 7/12/2016
Tay Sachs Diagnostic Test	MC 10/02/17
TGN	LH 18/04/16
Thiocyanate	LH 06/02/17
Thiopentone	42849
Thiopurine Methyl Transferase (TPMT)	LH 18/04/17
Thyroglobulin (Beckman)	MC 06/02/2017
Thyroid Hormone Binding Studies	no response - to chase
Topiramate	LH 18/04/17

Transferrin Glycoforms/transferrin isoforms/isoelectric transferrin/	no response - to chase
Trimethylamine	LH 15/2/17
TSH Alpha Subunit	LH 18/04/17
TSH Receptor Antibodies (TRAbs)	MC 06/02/2017
Vasoactive Intestinal Polypeptide	MC 06/02/2017
Very long chain fatty acids (VLCFA/LCFA)	LH 15/2/17
Vitamin B1 (Thiamine)	LH 13/2/17
Vitamin B2 (Riboflavin)	LH 06/03/17
Vitamin B6	LH 06/03/17
Vitamin C	LH 13/2/17
Vitamin D (1,25-OH Vitamin D)	LH 06/03/17
Vitamin K	RL 21/12/2016
Warfarin	RL 21/12/2016
White Cell Enzymes	MC 10/02/17
Xanthine	RL 5/12/2016
Malaria Species	
Essential Fatty Acids	
EMA binding assay (for QA purposes only - not routine testing)	pending - exchange established Jan 18
Urine, blood and faecal porphyrins	

accreditation status 2016	2016 TAT (performed Jan 2017)	Updated on Tests & Tubes?
CPA Accredited (13/04/17)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
Not accredited - Research Laboratory	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (13/04/17)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (06/03/2017)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (30/11/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (30/11/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (13/04/17)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
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CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	22/11/17 LH

CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
Not accredited - Research Laboratory	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (30/11/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (30/11/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (07/2/2017)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (25/06/2018)		6/25/18
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC

CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
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CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (06/03/2017)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (06/03/2017)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (06/03/2017)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	Sendaways TAT audit Jan 2017 BSH4AUD061	16/11/17 MC
CPA Accredited (26/7/2016)	N/A	23/11/2017 MC
Not accredited - Research Laboratory	N/A	23/11/2017 MC
UKAS Accredited 24/03/17	update once known	full review not yet undertaken (instated as supplier Jan 18)

