Scientific Research and Innovation Services assay repertoire

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Routine tests

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Cytokine Panel CY-19 - Interleukin 1 beta (IL-1β), Interleukin 6 (IL-6), Interleukin 8 (IL-8) and Tumour necrosis factor alpha (TNF-α).	CY19	Blood (serum)	SST	500uL	Allow samples to clot for 30 - 60 minutes at room temperature or up to 8 hours at 4°C. Centrifugation for 15 min at 1000×g. Aliquot and store at -80°C.	Frozen (-80°C) - stable for 18 months. Samples can be freeze thawed up to 5 times.	Protein Simple Ella	IL-1b: 0.00 - 0.66 IL-6: 0.00 - 3.26 IL-8: 2.20 - 21.87 TNFa: 6.10 - 13.58	pg/mL	Batches of 29	1 week
Cytokine Panel CY20 - Interferon gamma (IFN-γ), Interleukin 10 (IL-10), Interleukin 17A (IL-17A) and Interleukin 2 receptor alpha chain (IL-2RA).	CY20	Blood (serum)	SST	500uL	Allow samples to clot for 30 - 60 minutes at room temperature or up to 8 hours at 4°C. Centrifugation for 15 min at 1000×g. Aliquot and store at -80°C.	Frozen (-80°C) - stable for 18 months. Samples can be freeze thawed up to 5 times.	Protein Simple Ella	IFN-γ: 423.52 - 1843.81 IL-10: 0.96 - 3.20 IL-17: 0.00 - 2.10 INFg: 0.00 - 1.76	pg/mL	Batches of 29	1 week
Cytokine Panel CY21 - Chemokine ligand 2/monocyte chemoattractant protein 1 (CCL2/MCP-1), GranuLocyte-macrophage colony-stimuLating factor (GM-CSF), Interleukin 15 (IL-15), VascuLar endothelial growth factor A (VEGF-A)	CY21	Blood (serum)	SST	500uL	Allow samples to clot for 30 - 60 minutes at room temperature or up to 8 hours at 4°C. Centrifugation for 15 min at 1000×g. Aliquot and store at -80°C.	Frozen (-80°C) - stable for 18 months. Samples can be freeze thawed up to 5 times.	Protein Simple Ella	CCL2/MCP-1: 64.0 - 514.4 GM-CSF: 0.0 - 6.3 IL-15: 0.0 - 5.4 VEGF-A: 0.0 - 450	pg/mL	Batches of 11	1 weeks
Cytokine Panel CY23 - Interleukin 5 (IL-5) and Interleukin 13 (IL-13)	CY23	Blood (serum)	SST	500uL	Allow samples to clot for 30 - 60 minutes at room temperature or up to 8 hours at 4°C. Centrifugation for 15 min at 1000×g. Aliquot and store at -80°C.	Frozen (-80°C) - stable for 18 months. Samples can be freeze thawed up to 5 times.	Protein Simple Ella	IL-5: 0.087 – 0.657 IL-13: ND – 80.1	pg/mL	Batches of 11	2 weeks
Heart muscle creatine kinase MB (CK-MB) (mass)	CKMB	Blood (serum or plasma)	SST or heparinised plasma	500uL	Allow samples to clot for 30 - 60 minutes at room temperature or up to 8 hours at 4°C. Centrifugation for 15 min at 1000×g. Aliquot and store at -20°C.	2-8 °C for 1 day or 30 days at -20 °C.	ImmuLite 2000	Males: <6.74 ng/ml Females: <4.02 ng/ml	ng/mL	On request	2 weeks
25-hydroxyvitamin D2	25D2	Send-away test see: https://www.synnovis.co.uk/our-tests/25-oh-vitamin-d								On request	N/A
25-hydroxyvitamin D3	25D3	Send-away test see: https://www.synnovis.co.uk/our-tests/25-oh-vitamin-d								On request	N/A
Total 25-hydroxyvitamin D (D2+D3)	D2D3	Send-away test see: https://www.synnovis.co.uk/our-tests/25-oh-vitamin-d								On request	N/A

Research tests

NB: May require validation, not always immediately available, this list is not exhaustive, please contact us to enquire about any other test you require

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1,5-anhydroglucitol	15AG	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum - allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	2-8°C for 7 days -20°C for longer storage, samples my be freeze thawed up to three times.	Glycomark kit	Males: 10.7-32.0 Females: 6.8-29.3 All: 9.7-31.4	ug/mL	On request	N/A
17-OH-Progesterone	17PG	Blood (serum or plasma)	SST or EDTA plasma	500uL	The usual precautions for venipuncture should be observed. It is important to preserve the chemical integrity of a blood specimen from the moment it is collected until it is assayed. Do not use grossly hemolytic, icteric or grossly lipemic	2-8°C for 7 days -20°C (Aliquots) for 3 months Keep away from heat or direct sunlight. Avoid repeated freeze-thaw cycles.	Werfen DS2 (IBL kit)	Females: FolliculAr phase - 0.3-1.0 Luteal phase - 0.2-2.9 Post ACTH stim. -	ng/mL	On request	N/A
a1-acid glycoprotein	AGP	Blood (serum or plasma) urine	SST, EDTA plasma, heparin plasma or urine	500uL	Serum - allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection. Urine - Aseptically collect the first urine of	Aliquot serum/plasma/urine and store samples at ≤ -20 °C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (Biotechne kit)	Serum: 301-1136 Plasma: 322-1143 Urine: 68-19100	ug/mL (serum/ plasma) ng/mL (urine)	On request	N/A
Activin A	ACTA	Blood (serum or plasma)	SST or EDTA plasma	300uL	Serum - Allow samples to clot for 30 minutes at room temperature before centrifugation for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Aliquot serum/plasma/urine and store samples at ≤ -20 °C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (Biotechne kit)	Serum: 142-753 Plasma: 115-665	pg/mL	On request	N/A
Adiponectin	ADIP	Blood (serum or plasma)	SST or EDTA or heparin Plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature before centrifugation for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Aliquot serum/plasma and store samples at ≤ -20 °C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 5344-14,425 EDTA plasma: 3051-12,506 Heparin plasma: 2373-15,202	pg/mL	On request	N/A
Adrenomedullin	ADM	Blood (serum or plasma)	SST or EDTA or heparin Plasma	500uL	Serum: Allow samples to clot for 2 hours at room temperature or overnight at 4℃ before centrifugation for 15 min at 1000×g at 2~8℃. Blood collection tubes	-20℃ (≤1 month) or -80℃ (≤3 months). Avoid repeated freeze-thaw cycles. Hemolysed samples are not suitable	Werfen DS2 (Novus kit)	-	pg/mL	On request	N/A

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Aflibercept	AFIB	Blood (serum or plasma)	SST or EDTA or heparin plasma	500uL	Serum: Allow samples to clot for 2 hours at room temperature or overnight at 4℃ before centrifugation for 15 min at 1000×g at 2~8℃. Blood collection tubes shouLd be disposable and be non endotoxin. Plasma: Collect plasma using EDTA or heparin as an anticoaguLant. Centrifuge samples for 15 min at 1000×g at 2~8℃ within 30 min of collection. Do not use grossly hemolytic, icteric or grossly lipemic specimens. Samples appearing turbid should be centrifuged before testing	Storage: 2-8°C, Stability: 3d	Werfen DS2 (Eagle Bio kit)	-	ng/mL	On request	N/A
a-klotho	AKLO	Blood (serum or plasma) or urine	SST, EDTA plasma or urine	500uL	Test samples should be measured soon after collection. Urine samples are less stable than serum, therfore freeze urine samples rapidly after collection and avoid refreezing.	Store frozen, avoid repeated freeze-thaw cycles.	Werfen DS2 (IBL kit)	-	pg/mL	On request	N/A
alpha 2-macroglobuLin	A2M	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum - allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	-20℃ or -80℃. Avoid repeated freeze-thaw cycles.	Werfen DS2 (Biotechne kit)	-	pg/mL	On request	N/A
Amylin	AMLN	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum - allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	-20℃ (≤1 month) or -80℃ (≤3 months)	Werfen DS2 (Novus kit)	-	pg/mL	On request	N/A
Amyloid b protein	AMBP	CSF	Universal container	500uL	Use local CSF collection protocol	Freeze sample at ≤ -70 °C. within one hour of collection	Werfen DS2 (R&D Systems kit)	ND-711	pg/mL	On request	N/A
Angiopoietin-2	AP02	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	-20℃ (≤1 month) or -80℃ (≤3 months)	Protein Simple Ella	-	pg/mL	On request	N/A

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Angiotensin 1	ANG1	Serum	SST	1000uL	Allow samples to clot for 2 hours at room temperature or overnight at 4°C. Centrifugation for 15 min at 1000×g at 2-8°C. Collect the supernatant to carry out the assay. Use nonendotoxin blood	Frozen (-80°C). Avoid repeated freeze-thaw cycles.	Sandwich ELISA	-	pg/mL	On request	N/A
Angiotensin 1-7	ANG7	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum - allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	-20°C (stability not yet evaluated). Avoid repeated freeze-thaw cycles.	Werfen DS2 (Biotechne kit)	-	pg/mL	On request	N/A
Angiotensin 1-7 (AG17)	AG17	Serum	SST	300uL	Allow samples to clot for 2 hours at room temperature or overnight at 4°C. Centrifugation for 15 min at 1000×g at 2-8°C. Collect the supernatant to carry out the assay. Use nonendotoxin blood	4°C - stable for 7 days. Frozen (-20°C) - stable for ≤1 month. Frozen (-80°C) - stable for ≤3 months. Avoid repeated freeze-thaw cycles.	Competitive ELISA	-	pg/mL	On request	N/A
Angiotensin 1-9	ANG9	Blood (serum or plasma)	SST EDTA plasma	500uL	Serum - allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	-20°C (stability not yet evaluated). Avoid repeated freeze-thaw cycles.	Werfen DS2 (Biotechne kit)	-	pg/mL	On request	N/A
Angiotensin 1-9 (AG19)	AG19	Blood (serum)	SST	1000uL	Allow samples to clot for 2 hours at room temperature or overnight at 4°C. Centrifugation for 15 min at 1000×g at 2-8°C. Collect the supernatant to carry out the assay. Use nonendotoxin blood collection tubes.	Frozen (-80°C). Avoid repeated freeze-thaw cycles.	Competitive ELISA	-	pg/mL	On request	N/A
Angiotensin 2 (ANG2)	ANG2	Blood (serum)	SST	1000uL	Allow samples to clot for 2 hours at room temperature or overnight at 4°C. Centrifugation for 15 min at 1000×g at 2-8°C. Collect the supernatant to carry out the assay. Use nonendotoxin blood	Frozen (-80°C). Avoid repeated freeze-thaw cycles.	Competitive ELISA	-	pg/mL	On request	N/A
Angiotensin converting enzyme 2	ACE2	Blood (serum or plasma)	SST EDTA plasma	500uL	Allow samples to clot for 2 hours at room temperature or overnight at 4°C. Centrifugation for 15 min at 1000×g at 2-8°C. Collect the supernatant to carry out	Frozen (-80°C). Avoid repeated freeze-thaw cycles.	Werfen DS2 (Biotechne kit)	-	pg/mL	On request	N/A
Angiotensin I Converting Enzyme (ACE)		Blood (serum)	SST	300uL	Allow samples to clot for 2 hours at room temperature or overnight at 4°C. Centrifugation for 15 min at 1000×g at 2-8°C. Collect the supernatant to carry out the assay. Use nonendotoxin blood	4°C - stable for 4 weeks. Frozen (-80°C) - stable for ≤3 months. Avoid repeated freeze-thaw cycles.	Immunoassay	-	pg/mL	On request	N/A

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Angiotensin I Converting Enzyme 2 (ACE2)		Blood (serum)	SST	300uL	Allow samples to clot for 2 hours at room temperature or overnight at 4°C. Centrifugation for 15 min at 1000×g at 2-8°C.	4°C - stable for 7 days. Frozen (-20°C) - stable for ≤1 month. Frozen (-80°C) - stable for ≤3 months.	Sandwich ELISA	-	pg/mL	On request	N/A
Anti Mullerian hormone	TAMH	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum - allow samples to clot for 1 hour or overnight at 2-8°C , centrifuge for 20 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection. Use nonendotoxin blood collection tubes, haemolysed/lipaemic samples not suitable.	4°C - stable for 7 days. Frozen (-20°C) - stable for ≤1 month. Frozen (-80°C) - stable for ≤3 months.	Werfen DS2 (Biotechne kit)	-	ng/mL	On request	N/A
Apelin Total	APLN	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum: Allow samples to clot for 2 hours at room temperature or overnight at 2-8°C. Centrifugation for 15 min at 1000×g at 2-8°C. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	4°C - stable for 7 days. Frozen (-20°C) - stable for ≤1 month. Frozen (-80°C) - stable for ≤3 months.	Werfen DS2 (Biotechne kit)	-	pg/mL	On request	N/A
Apelin-13	AP13	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum: Allow samples to clot for 2 hours at room temperature or overnight at 2-8°C. Centrifugation for 15 min at 1000×g at 2-8°C.	4°C - stable for 7 days. Frozen (-20°C) - stable for ≤1 month. Frozen (-80°C) - stable for ≤3 months.	Werfen DS2 (Biotechne kit)	-	pg/mL	On request	N/A
Apelin-17	AP17	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum: Allow samples to clot for 2 hours at room temperature or overnight at 2-8°C. Centrifugation for 15 min at 1000×g at 2-8°C. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	4°C - stable for 7 days. Frozen (-20°C) - stable for ≤1 month. Frozen (-80°C) - stable for ≤3 months.	Werfen DS2 (Biotechne kit)	-	nmol/L	On request	N/A
Apelin-36	AP36	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum: Allow samples to clot for 2 hours at room temperature or overnight at 2-8°C. Centrifugation for 15 min at 1000×g at 2-8°C. Plasma - Centrifuge for 15 minutes	4°C - stable for 7 days. Frozen (-20°C) - stable for ≤1 month. Frozen (-80°C) - stable for ≤3 months.	Werfen DS2 (Biotechne kit)	-	U/ml	On request	N/A
Apolipoprotein A1	APOA	Blood (serum or plasma) or urine	SST, EDTA plasma, heparin plasma or urine	500uL	Serum - allow samples to clot for 30 minutes at room temperature before centrifugation for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤ -20 °C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (Biotechne kit)	Serum: 1.48-3.20 EDTA plasma: 1.40-2.87 Heparin plasma: 1.19-2.97	mg/mL	On request	N/A

Apolipoprotein B	APOB	Blood (serum or plasma)	SST, EDTA plasma or Heparin Plasma	500uL	Serum - allow samples to clot for 30 minutes at room temperature before centrifugation for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤ -20 °C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (Biotechne kit)	Serum: 189-991 EDTA plasma: 189-985 Heparin plasma: 195-1033	ug/mL	On request	N/A

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Apolipoprotein E	APOE	Blood (serum or plasma)	SST, EDTA plasma, heparin plasma or CSF	500uL	Serum - allow samples to clot for 30 minutes at room temperature before centrifugation for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection. CSF: Centrifuge samples at 3000 x g for 10	Serum/plasma: store at -20°C or below for up to 3 months. CSF: store at -80°C for up to 3 months. Avoid repeated freeze-thaw	Werfen DS2 (Novus kit)	-	pg/mL	On request	N/A
Beta Endorphin	BEND	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum: Allow samples to clot for 2 hours at room temperature or overnight at 4℃ before centrifugation for 15 min at 1000×g at 2~8℃. Blood collection tubes should be non-endotoxin.	Analyse within 7 days when stored at 4℃, or aliquotte and store at -20℃ (≤1 month) or -80℃ (≤3 months). Avoid repeated freeze-thaw cycles	Werfen DS2 (Novus kit)	-	pg/mL	On request	N/A
Beta-Defensin 4	BDEF	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum: Allow samples to clot for 30 minutes. Centrifuge at 1000 x g for 15 minutes. Plasma: Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	24 hours at 4°C For a longer periods store at - 20°C to -80°C.	Werfen DS2 (Biotechne kit)	-	pg/mL	On request	N/A
Beta-nerve growth factor	BNGF	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum: Allow samples to clot for 30 minutes at room temperature before centrifugation for 15 minutes at 1000 x g. Plasma: Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: ND-4.08 EDTA plasma: ND-3.74 Heparin plasma: ND-3.94	pg/mL	On request	N/A
Bone-specific alkaline phosphatase	BAP	Blood (serum)	SST	500uL	Allow the blood to clot and separate the serum by centrifugation. Haemolysed samples unsuitable.	5 days at 2°C to 8°C 12 months at ≤ –40°C 36 months ≤ –80°C Do not subject samples to more than 3 freeze/thaw cycles.	Werfen DS2 (QUIDEL kit)	Female 25-44 yrs (premenopausal) 11.6 - 29.6 Females ≥45 yrs (postmenopausal) 14.2-42.7 Males ≥25 yrs 15.0-41.3	U/L	On request	N/A
Brain-derived neurotrophic factor	BDNF	Blood (serum or plasma)	SST, platelet poor EDTA plasma or platelet poor heparin plasma	500uL	Serum: Allow samples to clot for 30 minutes at room temperature before centrifugation for 15 minutes at 1000 x g. Plasma: Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Assay immediately or aliquot and store at ≤ -20 °C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 21,105-55,408 PP EDTA plasma: 44.3-4516 PP Heparin plasma: 352-3455	pg/mL	On request	N/A
Calcitonin gene related peptide	CGRP	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum: Allow samples to clot for 30 minutes at room temperature before centrifugation for 15 minutes at 1000 x g. Plasma: Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤ -20 °C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (Biotechne kit)	-	ng/mL	On request	N/A
Carbonic anhydrase II	CA2	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum: Allow samples to clot for 30 minutes at room temperature before centrifugation for 15 minutes at 1000 x g. Plasma: Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	≤-20 °C for up to three months. Avoid repeated freeze-thaw cycles.	Werfen DS2 (Novus kit)	-	pg/mL	On request	N/A

Carbonic anhydrase III	CA3	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum: Allow samples to clot for 30 minutes at room temperature before centrifugation for 15 minutes at 1000 x g. Plasma: Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	≤-20 °C for up to three months. Avoid repeated freeze-thaw cycles.	Werfen DS2 (Novus kit)	-	U/L	On request	N/A

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Carbonic anhydrase IX	CA9	Blood (serum or plasma) or urine	SST, EDTA plasma, heparin plasma, citrate plasma or urine	500uL	Serum: Allow samples to clot for 30 minutes at room temperature before centrifugation for 15 minutes at 1000 x g. Plasma: Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	≤-20 °C for up to three months. Avoid repeated freeze-thaw cycles.	Werfen DS2 (Novus kit)	-	pg/mL	On request	N/A
Cardiotrophin 1	CAR1	Blood (serum or plasma)	SST or EDTA plasma	500uL	Plasma: Centrifuge samples at 3000 x g for 10 minutes. Serum: After clot formation, centrifuge samples at 3000 x g for 10 minutes.	≤-20 °C for up to three months. Avoid repeated freeze-thaw cycles.	Werfen DS2 (Novus kit)	-	nmol/L	On request	N/A
Cartilage Oligomeric Matrix Protein	COM	Blood (serum or plasma)	SST serum, EDTA plasma or heparin plasma	500uL	Serum: Allow samples to clot for 30 minutes at room temperature before centrifugation for 15 minutes at 1000 x g. Plasma: Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Assay immediately or aliquot and store at ≤ -20 °C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 72,611-328,847 EDTA plasma: 108,529-331,703 Heparin plasma:	pg/mL	On request	N/A
Cholecystokinin	CCK	Blood (serum or plasma)	Plain serum (no additive) SST or EDTA plasma	500uL	Serum: Allow samples to clot for 2 hours at room temperature or overnight at 4℃ before centrifugation for 15 min at 1000×g at 2~8℃. Blood collection tubes should be non-endotoxin.	Assay immediately or aliquot and store at ≤ -20 °C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (Novus kit)	-	ng/mL	On request	N/A
Circulating immune complex	CIQ	Blood (serum or plasma)	SST or EDTA plasma	500uL	All specimens should be collected aseptically and prepared using standard techniques for clinical laboratory testing. Do not heat-inactivate the specimens.	2°-8°C for up to 7 days –20°C or below for longer periods	Werfen DS2 (Novus kit)	<4.0	ug Eq/mL	On request	N/A
Clusterin	CLUS	Blood (serum or plasma) or urine	SST serum, EDTA plasma, heparin plasma or urine	500uL	Serum: Allow to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma: Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store serum/plasma samples at ≤-20°C. Avoid repeated freeze-thaw cycles. Urine: store at ≤-80°C	Protein Simple Ella	Serum: 178-235 EDTA: 187-272 Heparin: 147-238 Urine: 126-552	ug/mL	On request	N/A
Colony stimulating factor 2 GMCSF	CSF2	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Normally undetectable.	ng/mL	On request	N/A
Complement factor 3a-desArg	C3A	Blood (serum or plasma)	SST or EDTA plasma	500uL	-	-	Werfen DS2 (Quidell kit)	-	ng/mL	On request	N/A

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Complement factor B b	CBB	Blood (serum or plasma) or urine	SST, EDTA plasma or urine	500uL	-	-	Werfen DS2 (Quidell kit)	-	ng/mL	On request	N/A
Complement Factor D/Adipsin	ADPS	Blood (serum or plasma)	SST serum, EDTA plasma, heparin plasma or	500uL	Serum - Allow samples to clot for 30 minutes at room temperature centrifuge for 15 minutes at 1000 x g. store samples at ≤ -20 °C.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (Biotechne kit)	Serum: 1729-3238 EDTA: 1468-3657 Heparin: 906-2545 Urine: ND-7.32	ng/mL	On request	N/A
Corin	CORN	Blood (serum or plasma)	SST, EDTA plasma or heparin Plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (Biotechne kit)	Serum: 578-3138 EDTA: 489-3032 Heparin: 568-3058	pg/mL	On request	N/A
Corticotropin releasing factor	CTRF	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum - Allow samples to clot for 2 hours at room temperature centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	7 days at 2-8℃ ≤1 month -20℃ ≤3 months -80℃ Avoid repeated freeze-thaw cycles	Werfen DS2 (Novus kit)	-	pg/mL	On request	N/A
Cotinine	COTS	Blood (serum), urine or saliva	SST, urine or saliva	500uL	-	-	Werfen DS2 (Novus kit)	-	ng/mL	On request	N/A
C-Peptide - Clinical Trials	TCP	Blood (serum or plasma)	SST or heparin plasma	500uL	Serum - Allow samples to clot for 2 hours at room temperature centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	30 days at -80°C. Avoid multiple freeze thaw cycles.	Siemens ImmuLite	0.9-7.1	ng/mL	On request	N/A
Cross-linked C-telopeptide of type I collagen	CTX	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum: Allow samples to clot for 2 hours at room temperature or overnight at 4℃ before centrifugation for 15 min at 1000×g at 2~8℃. Blood collection tubes	7 days at 2-8℃ ≤1 month -20℃ ≤3 months -80℃ Avoid repeated freeze-thaw	Werfen DS2 (Novus kit)	-	ng/mL	On request	N/A
Cytokeratin-18	CY18	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: ND-2049 EDTA: ND-2159 Heparin: ND-2810	pg/mL	On request	N/A
Dehydroepiandrosterone	DHEA	Blood (serum)	SST	500uL	Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g.	Stable for 4 days at 2-8°C and 3 months at ≤-20°C. Do not use grossly hemolytic, icteric or lipemic specimens. Samples appearing turbid should be centrifuged. Avoid repeated freeze-thaw cycles.	Werfen DS2 (IBL International kit)	Males: 0.52 – 5.18 Females: 0.36 – 7.82	ng/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Dehydroepiandrosterone Sulphate (DHEAS)	DHEAS	Blood (serum or	SST or EDTA plasma	500uL	Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g.	Stable for 7 days at 2-8°C and 6 months at ≤-20°C. Do not use grossly hemolytic, icteric or	Werfen DS2 (IBL International	Women: 0.37 – 2.71 Men: 0.73 – 3.81	ug/mL	On request	N/A
Dickkopf related protein 1	DKK1	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 2343-4999 EDTA: 327-1015 Heparin: 306-1035	pg/mL	On request	N/A
Endoglin/CD105	EDOG	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 4030-6207 EDTA: 3786-6004 Heparin: 3601-5308	pg/mL	On request	N/A
Endothelin-1	END1	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. store samples at ≤ -20 °C. Avoid repeated freeze-thaw cycles.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 0.92-1.58 EDTA: 0.9-1.4 Heparin: 0.78-1.48	pg/mL	On request	N/A
Eotaxin/CCL11	EO11	Blood (serum or plasma)	SST, EDTA plasma or citrate plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (Biotechne kit)	Serum: 50-642 EDTA: 32-272 Citrate: 47-399	pg/mL	On request	N/A
Eotaxin-3/CCL26	EO3	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 4.75-61.6 EDTA: 3.7548.5 Heparin: 38.9-222	pg/mL	On request	N/A
Epidermal growth factor	EGF	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Randox Investigtor	-	pg/mL	On request	N/A
Epithelial neutrophil activating peptide 78 (CXCL5/ENA-78)	EN78	Blood (serum or plasma)	SST, platelet poor EDTA plasma or platelet poor heparin	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 469-4713 EDTA: 13.8-97.8 Heparin: 35.8-439	pg/mL	On request	N/A
E-Selectin/CD62E	SELE	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 6051-77637 EDTA: 11298-49085 Heparin: 9787-48946	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Estrone	ESTR	Blood (serum)	SST	300uL	Collect 4–5 mL of blood into an appropriately labelled tube and allow it to clot. Centrifuge and carefully remove the serum layer.	Room temperature: ≤3 days 2-8°C ≤7 days -20°C ≤ 1 month	Werfen DS2 (IBL kit)	Female Premenopausal: 27.1 - 230.6 Premenopausal: 1 – 10 days: 18.9-148.5 11 – 20 days:	pg/mL	On request	N/A
Fatty acid binding protein 2	FABP	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 509-1585 EDTA: 471-1638 Heparin: 479-1648	pg/mL	On request	N/A
Fetuin A	FETA	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (R&D Systems kit)	Serum: 303-671 EDTA plasma: 274-631 Heparin plasma: 285-617	ng/mL	On request	N/A
Fibroblast growth factor 19	FG19	Blood (serum or plasma)	SST EDTA plasma Heparin plasma	500µL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 40.8-227 EDTA Plasma: 65.8-423 Heparin Plasma:	pg/mL	On request	N/A
Fibroblast growth factor 21	FG21	Blood (serum or plasma)	SST EDTA plasma Heparin plasma	500µl	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (R&D Systems kit)	Serum: ND-914 EDTA plasma: ND-1155 Heparin plasma: ND-1012	pg/mL	On request	N/A
Fibroblast growth factor 23	FG23	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 48-131 EDTA: 70.6-210 Heparin: 72.4-183	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Fibronectin	FNCT	Blood (serum or plasma) or	Blood: SST, EDTA plasma, citrated plasma or heparin	500µl	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (R&D Systems kit)	Serum: 0.083-0.539 EDTA: 0.116-0.601 Heparin: 0.048-0.527 Citrate:	ng/mL	On request	N/A
Follistatin-related gene protein	FLRG	Blood (serum or plasma) Urine	Blood: SST, EDTA plasma Urine: sterile universal	500µL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (R&D Systems kit)	Serum: 3142-8554 EDTA plasma: 3329-8808 Heparin plasma: 3214-8953	pg/mL	On request	N/A
Galectin-3	GAL3	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500µL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 3078-12,465 EDTA Plasma: 3185-8201 Heparin plasma:	pg/mL	On request	N/A
Gastric Inhibitory Polypeptide (GIP)	GIP	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500µL	Serum: Allow samples to clot for 2 hours at room temperature or overnight at 4°C before centrifugation for 15 min at 1000×g at 2~8°C. Blood collection tubes should be non-endotoxin.	2°-8°C for up to 7 days –20°C or below for longer periods	Werfen DS2 (Novus kit)	-	pg/mL	On request	N/A
Pro-gastrin releasing peptide	GRP	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500µL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 17.9-41.0 EDTA Plasma: 16.2-40.2 Heparin plasma: 16.3-40.2	pg/mL	On request	N/A
Ghrelin	GHRE	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500µL	no more than 10 IU heparin per mL of blood		Werfen DS2 (Novus kit)		pg/mL	On request	N/A
Ghrelin (acylated)	GHRA	Blood (plasma)	EDTA plasma or heparin plasma	500µL	Serum: Allow samples to clot for 2 hours at room temperature or overnight at 4°C before centrifugation for 15 min at 1000×g at 2~8°C. Blood collection tubes should be non-endotoxin.	2°-8°C for up to 7 days –20°C or below for longer periods	Werfen DS2 (IBL International kit)	-	pg/mL	On request	N/A
Glucagon	GLUG	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (Biotechne kit)	Serum: ND-224 EDTA: ND-226 Heparin: ND-221	pg/mL	On request	N/A

Glucagon-like peptide-1 (GLP-1)	GLP1	Blood (plasma)	EDTA plasma or heparin plasma	500µL	Results may vary widely in samples from fasting/non-fasting/glucose induced donors. Samples should not be taken from donors taking biotin, e.g. dietary supplements at least 48 hours prior to specimen collection. BD™ P700 Blood Collection and Preservation System must be used for sample collection.	Plasma samples should be stored at 2–8°C if tested within 3 hours of collection. For long term storage store at -70°C. Aliquot samples before freezing if necessary.	Werfen DS2 (IBL International kit)	-	pmol/L	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Glycerol	GLYL	Blood (serum or plasma)	SST or EDTA plasma	-	-	-	-	-	umol/L	On request	N/A
Glycogen phosphorylase BB/GPBB	GPIB	Blood (serum or plasma)	SST or citrate plasma	500uL	Serum - Allow samples to clot for 2 hours at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	7 days at 2-8℃ ≤1 month -20℃ ≤3 months -80℃ Avoid repeated freeze-thaw cycles	Werfen DS2 (Novus kit)	-	pg/mL	On request	N/A
Glycolytic pyruvate kinase isoenzyme type M2 dimer (M2PK)	M2PK	Faeces	Sterile universal stool universal	Walnut sized formed stool	-	-	Werfen DS2 (kit)	-	U/mL	On request	N/A
Granulocyte colony stimulating factor	GCSF	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	100uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: ND-4.98 EDTA: ND-4.60 Heparin: ND-1.90	pg/mL	On request	N/A
Growth differentiation factor 15	GF15	Blood (serum or plasma) or urine	SST, EDTA plasma, heparin plasma or urine	100uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. store samples at ≤ -20 °C. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 295-854 EDTA: 310-906 Heparin: 345-1024	pg/mL	On request	N/A
Growth-regulated alpha protein (CXCL1/GRO alpha)	GROA	Blood (serum or plasma)	SST, EDTA plasma, heparin plasma or citrate	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	24 hours at 4°C -20°C to -80°C for longer periods	Werfen DS2 (Novus kit)	-	µg Eq/mL	On request	N/A
Hemopexin	HEPX	Blood (serum or plasma)	SST, citrate plasma or urine	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	-20°C or below for up to 3 months. Avoid repeated freeze-thaw cycles	Werfen DS2 (Novus kit)	-	pg/mL (serum & plasma) ng/mL	On request	N/A
Hepatocyte growth factor (HGF)	HEGF	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	-20°C or below for up to 3 months. Avoid repeated freeze-thaw cycles	Protein Simple Ella	Serum: 944-1668 EDTA: 481-1004 Heparin: 377-885	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Hepcidin-25	HPCD	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500µL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	-20°C or below for up to 3 months. Avoid repeated freeze-thaw cycles	Protein Simple Ella	Serum: 1554-34,763 EDTA Plasma: 1775-44,577 Heparin Plasma: 1391-31,968	pg/mL	On request	N/A
Insulin - clinical trials	TINS	Blood (serum or plasma)	SST or heparin plasma	300uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store at -80°C. Avoid repeated freeze-thaw cycles	Siemens ImmuLite	4.4 – 26.0	uIU/mL	On request	N/A
Insulin-like growth factor binding protein 1 (IGFBP-1)	IGBP	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	-20°C or below. Avoid repeated freeze-thaw cycles	Protein Simple Ella	Serum: 1153-33875 EDTA: 971-36429 Heparin: 943-31133	pg/mL	On request	N/A
IntercelluLar Adhesion MolecuLe 1	ICAM	Blood (serum or plasma) or CSF	SST, EDTA plasma, heparin plasma or universal container	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Serum/plasma: -20°C or below. Avoid repeated freeze-thaw cycles Cerebrospinal Fluid: Freeze sample within one hour of collection to avoid aggregation. Store samples at ≤ -70 °C.	Protein Simple Ella	Serum: 169962-538956 EDTA: 160056-473867 Heparin: 186416-368415 CSF: 2382-9921	pg/mL	On request	N/A
Interferon-alpha	IFNA	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500µL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	-20°C or below. Avoid repeated freeze-thaw cycles	Protein Simple Ella	Serum: ND-4.68 EDTA Plasma: ND-5.54 Heparin Plasma: ND-6.04	pg/mL	On request	N/A
Interferon-beta	IFNB	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500µL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	-20°C or below. Avoid repeated freeze-thaw cycles	Protein Simple Ella	-	pg/mL	On request	N/A
Interferon-gamma	IFNY	Blood (plasma), CSF, occuLar fluid or	EDTA plasma, universal container, syringe or	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	423.52 - 1843.81	pg/mL	On request	N/A
Interleukin 1 alpha	IN1A	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	ND	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Interleukin 1 beta	IN1B	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	0.00 - 0.66	pg/mL	On request	N/A
Interleukin 1 beta	IL1B	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	0.00 - 0.66	pg/mL	On request	N/A
Interleukin 1 beta H.Sens.	I1BH	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	-	pg/mL	On request	N/A
Interleukin 1 receptor antagonist	I2RA	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 225-682 EDTA: 138-348 Heparin: 137-682	pg/mL	On request	N/A
Interleukin 10	IN10	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	0.96 - 3.20	pg/mL	On request	N/A
Interleukin 11	IL11	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: ND-362 EDTA: ND-329 Heparin: ND-324	pg/mL	On request	N/A
Interleukin 12	IN12	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: ND-1.96 EDTA: 1.28-1.76	pg/mL	On request	N/A
interleukin 12 P40	IP40	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	-	pg/mL	On request	N/A
Interleukin 12 P70	IP70	Blood (serum or plasma)	SST or EDTA plasma	500µL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: ND-1.96 EDTA: 1.28-1.76	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Interleukin 13	IL13	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500µL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: ND-80.1 EDTA Plasma: ND-83.3 Heparin Plasma: ND-68.4	pg/mL	On request	N/A
Interleukin 15	IL15	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	0.0 - 5.4	pg/mL	On request	N/A
interleukin 16	IL16	Blood (serum or	SST, EDTA plasma or heparin	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	-	pg/mL	On request	N/A
Interleukin 17	IN17	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	ND	pg/mL	On request	N/A
Interleukin 1-Receptor 1	I1R1	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 5397-36527 EDTA: 5201-36891 Heparin: 4883-37865	pg/mL	On request	N/A
Interleukin 1-Receptor 2	I1R2	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	-	pg/mL	On request	N/A
Interleukin 2	IN2	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	-	pg/mL	On request	N/A
Interleukin 22	IL22	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: ND-30.7 EDTA: ND-20.3 Heparin: ND-20.3	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Interleukin 23	IN23	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	-	pg/mL	On request	N/A
Interleukin 23	IL23	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	-	pg/mL	On request	N/A
Interleukin 3	IL3	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	-	pg/mL	On request	N/A
Interleukin 33	IL33	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	ND	pg/mL	On request	N/A
Interleukin 4	IN4	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	ND	pg/mL	On request	N/A
Interleukin 5	IL5	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	0.087 – 0.657	pg/mL	On request	N/A
Interleukin 6	IN6	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	0.00 - 3.26	pg/mL	On request	N/A
Interleukin 6 (Siemens)	SIL6	Blood (serum)	SST	250uL	Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g.	1 day at 2–8°C or 6 months at –20°C.	Siemens ImmuLite	ND - 5.9	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Interleukin 6 high sensitivity	IN6H	Blood (serum or plasma) or urine	SST, EDTA plasma or heparin plasma	500µL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (R&D Systems kit)	Serum: 0.495-3.92 EDTA plasma: 0.351-3.48 Heparin plasma: 0.414-3.97 Urine: ND-3.48	pg/mL	On request	N/A
Interleukin 6R-a	IL6R	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 34742-68077 EDTA: 33037-63147 Heparin: 26517-55504	pg/mL	On request	N/A
Interleukin 7	IL7	Blood (serum or plasma) or saliva	SST, EDTA plasma or heparin plasma	500µL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 6.81-22.4 EDTA Plasma: 0.660-4.73 Heparin Plasma: 1.89-5.87	pg/mL	On request	N/A
Interleukin 8	IN8	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 6.7-16.2 EDTA: 3.06-5.06 Heparin: 4.64-10.6	pg/mL	On request	N/A
Interleukin 8	IL8	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 6.7-16.2 EDTA: 3.06-5.06 Heparin: 4.64-10.7	pg/mL	On request	N/A
Interleukin 9	IL9	Blood (serum or plasma)	SST, EDTA plasma, citrate plasma or heparin	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store at –20°C to avoid loss of bioactive human IL-9. If samples are to be run within 24 hours, they may be stored at 2–8°C	Werfen DS2 (Novus kit)	ND	pg/mL	On request	N/A
Interleukin-18	IL18	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	-	pg/mL	On request	N/A
Kidney Injury Molecule 1	KIM1	Blood (serum or plasma) or urine	SST, EDTA plasma, heparin plasma or univeral	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 20.8-106 EDTA: 23.6-105 Heparin: 25.8-88.0 Urine: 328-1928	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Leptin	LEPT	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500µL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 8914-67,394 EDTA Plasma: 7897-70,208 Heparin Plasma:	pg/mL	On request	N/A
Leptin receptor	LEPR	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Frozen (-80°C) - stable for 18 months. Samples can be freeze thawed up to 5 times.	Protein Simple Ella	-	pg/mL	On request	N/A
Lipoprotein a	LPA	Blood (serum or plasma)	SST or citrate plasma	500µL	Serum - Allow samples to clot , centrifuge for 10 minutes at 3000 x g Plasma - Centrifuge for 10 minutes at 3000 x g	Store samples at ≤-20°C - strable for three months. Avoid repeated freeze-thaw cycles.	Werfen DS2 (Novus kit)	60-180	µg/ml	On request	N/A
L-Selectin/CD62L	SELL	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (Biotechne kit)	-	pg/mL	On request	N/A
Macrophage Inflammatory protein 1a	MIPA	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	-	pg/mL	On request	N/A
Macrophage Inflammatory protein 1b	MIPB	Blood (serum or plasma) or urine	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection. Urine: Aseptically collect the first urine of the day (mid stream), voided directly into a sterile container. Centrifuge to remove particulate matter	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 295-854 EDTA: 310-906 Heparin: 345-1024 Urine: 623-21960	pg/mL	On request	N/A
Macrophage inflammatory protein 2	MIP2	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 39.9-149 EDTA: 11.4-58.4 Heparin: 9.4-57.9	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Macrophage migration inhibitory factor	MIF	Blood (serum or plasma)	SST, platelet poor EDTA plasma or platelet poor heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 16536-34567 EDTA: 19580-41305 Heparin: 9379-29723	pg/mL	On request	N/A
Matrix metalloproteinase 7	MMP7	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 1094-6619 EDTA: 1403-5119 Heparin:	pg/mL	On request	N/A
Matrix metalloproteinase 9	MMP9	Blood (serum or plasma)	SST, platelet poor EDTA plasma or platelet poor heparin plasma	500µL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 167,760-469,934 PP EDTA Plasma: 34,588-136,743 PP heparin Plasma: 21,154-67,670	pg/mL	On request	N/A
Matrix metalloproteinase-1	MMP1	Blood (serum or plasma)	SST or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (R&D Systems kit)	Serum: 0.912-9.340 Heparin: 0.179-1.000	ng/mL	On request	N/A
Matrix metalloproteinase-2	MMP2	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (R&D Systems kit)	Serum: 139-356 EDTA: 141-278 Heparin: 155-342	ng/mL	On request	N/A
Matrix metalloproteinase-3	MMP3	Blood (serum or plasma)	SST or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (R&D Systems kit)	Serum: 2.10-64.4 Heparin: 1.88-45.9	ng/mL	On request	N/A
Melatonin	MELA	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500µL	Do not use grossly hemolytic, icteric or grossly lipemic specimens. Samples appearing turbid should be centrifuged before testing.	Stable for 24h at 2-8°C, 3 months at ≤-20°C and 12 months ≤70°C	Werfen DS2 (IBL International kit)	03:00 AM: 18.5-180 08:00 AM: 3.8–80.4	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Monocyte chemotactic protein 3	MCP3	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: ND-5.97 EDTA: ND-0.77 Heparin: ND-3.12	pg/mL	On request	N/A
Monocyte chemotactic protein-1	MCP1	Blood (serum or plasma)	SST, EDTA plasma, heparin plasma urine or CSF	500µL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 163-485 EDTA plasma: 106-429 Heparin plasma: 157-459	pg/mL	On request	N/A
Monokine induced by gamma interferon (CXCL9/MIG)	MIGI	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 144-464 EDTA: 164-564 Heparin: 236-700	pg/mL	On request	N/A
Myelin basic protein	MBP	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (R&D Systems kit)	-	pg/mL	On request	N/A
Myostatin	MYO	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500µL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (R&D Systems kit)	Serum: 1264-8588 EDTA:1220-7300 Heparin: 1200-7640	pg/mL	On request	N/A
N-acetyl glucosaminidase	NAG	Blood (serum or plasma) or urine	Blood: SST, EDTA plasma, heparin plasma Urine: Sterile container	500µL	Serum: Allow samples to clot for 2 hours at room temperature or overnight at 4°C before centrifugation for 15 min at 1000×g at 2~8°C. Blood collection tubes should be non-endotoxin. Plasma: Centrifuge samples for 15 min at 1000×g at 2~8°C within 30 min of collection. Hemolysed samples are not suitable	2°-8°C for up to 7 days –20°C or below for longer periods	Werfen DS2 (Novus kit)	-	ng/mL	On request	N/A
Neopterin	NEOP	Blood (serum or plasma) or urine	SST, EDTA plasma or urine.	-	-	-	Manual	-	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Neurofilament Light	NFL	Blood (serum or plasma)	SST or EDTA plasma	500ul	Venous Primary sample collection tube should be centrifuged within 1 hour from venepuncture.		Protein Simple Ella		pg/mL	On request	N/A
Neuropeptide Y	NPY	Blood (serum or plasma)	SST or EDTA plasma	-	-	-	Werfen DS2 (R&D Systems kit)	-	ng/mL	On request	N/A
Nitric oxide	NO	Blood (serum or plasma), urine or CSF	Blood: SST, EDTA plasma or heparin plasma Urine/CSF: Sterile container	500µL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (R&D Systems kit)	Serum: 13-97 EDTA plasma: 10-92 Heparin plasma: 10-90 Citrate plasma: 11-81 Urine: 369-2684	umol/L	On request	N/A
Non-esterified fatty acid	NEFA	Send-away test, see: http://www.viapath.co.uk/our-tests/non-esterified-fatty-acids-nefa-0								On request	N/A
Occludin	OCLN	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum - Allow samples to clot for 2 hours at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	7 days at 2-8°C ≤1 month -20°C ≤3 months -80°C Avoid repeated freeze-thaw cycles	Werfen DS2 (Novus kit)	-	ng/mL	On request	N/A
Osteocalcin	OCN	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Osteocalcin is unstable. Keep blood at 2-8°C immediately after collection and during processing. Serum should be processed and frozen at ≤–20°C within 4 hours of collection. If collection and processing is performed at ambient temperature, serum must be processed and tested or frozen (≤ –20°C) within 2 hours of collection. Serum should be frozen at ≤ –70°C for storage > 1 month	Werfen DS2 (QUIDEL kit)	-	ng/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Osteopontin	OPN	Blood (serum or plasma), urine or	SST, EDTA plasma, heparin plasma, urine or CSF	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Serum/plasma: Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles. Urine: Aseptically collect the first urine of the day (mid	Protein Simple Ella	Serum: 24200-63800 EDTA: 57200-94100 Heparin:	pg/mL	On request	N/A
Oxidative LDL	OLDL	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Samples can be stored at –80°C for at least 6 months. Avoid repeated freezing and thawing.	Werfen DS2 (Mercodia kit)	-	pg/mL	On request	N/A
Oxytocin	OXYT	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum - Allow samples to clot for 2 hours at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	7 days at 2-8℃ ≤1 month -20℃ ≤3 months -80℃ Avoid repeated freeze-thaw cycles	Werfen DS2 (Novus kit)	-	ng/mL	On request	N/A
P53 protein	P53P	Blood (serum)	SST	500uL	Serum - Allow samples to clot for 2 hours at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (IBL kit)	ND	pg/mL	On request	N/A
Pancreatic polypeptide	PPP	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum - Allow samples to clot for 2 hours at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	7 days at 2-8℃ ≤1 month -20℃ ≤3 months -80℃ Avoid repeated freeze-thaw cycles	Werfen DS2 (Novus kit)	-	pg/mL	On request	N/A
Pentraxin-3 (TSG-14)	PTX3	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 747-2846 EDTA: 272-2219 Heparin: 396-2062	pg/mL	On request	N/A
Peptide YY	PYY	Blood (serum or plasma)	SST serum EDTA plasma Heparin plasma	500µL	Serum - Allow samples to clot for 2 hours at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	7 days at 2-8℃ ≤1 month -20℃ ≤3 months -80℃ Avoid repeated freeze-thaw cycles	Werfen DS2 (Novus kit)	-	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Periostin	OSF2	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500µL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 11,944-28,847 EDTA Plasma: 10,675-28,419 Heparin plasma: 10,567-28,935	pg/mL	On request	N/A
Placental growth factor	PlGF	Blood (serum or plasma) or urine	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection. e: Aseptically collect the first urine of the day (mid stream), voided directly into a sterile container. Centrifuge to remove particulate matter.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 295-854 EDTA: 310-906 Heparin: 345-1024 Urine: 623-21960	pg/mL	On request	N/A
Platelet-derived GF BB	PDBB	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	-	pg/mL	On request	N/A
Podocin	PDCN	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum - Allow samples to clot for 2 hours at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	7 days at 2-8°C ≤1 month -20°C ≤3 months -80°C Avoid repeated freeze-thaw cycles	Manual / Werfen	-	pg/mL	On request	N/A
Pregnancy-specific beta-1-glycoprotein 1	PSG1	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (R&D Systems kit)	ND	ng/mL	On request	N/A
Procollagen I C-Terminal Propeptide	P1CP	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500µL	Serum - Allow samples to clot for 2 hours at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	7 days at 2-8°C ≤1 month -20°C ≤3 months -80°C Avoid repeated freeze-thaw cycles	Werfen DS2 (Novus kit)	-	pg/mL	On request	N/A
Procollagen type III N-terminal propeptide	P3P	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500µL	Serum - Allow samples to clot for 2 hours at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	8 days at 2-8°C ≤1 month -20°C ≤3 months -80°C Avoid repeated freeze-thaw cycles	Werfen DS2 (Novus kit)	-	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
P-Selectin	SELP	Blood (serum or plasma)	SST, EDTA plasma, heparin plasma or citrate plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (R&D Systems kit)	Serum: 43.5-119 EDTA: 18.3-57.4 Heparin: 18.6-50.6 Citrate: ND-37.9	ng/mL	On request	N/A
Randox Cytokine Array (Custom X): Interleukin-2 (IL-2), Interleukin-4 (IL-4), Interleukin-6 (IL-6), Interleukin-8 (IL-8), Interleukin-10 (IL-10), Vascular Endothelial Growth Factor (VEGF), Interferon Gamma (IG), Tumour Necrosis Factor Alpha (TNFa), Interleukin 1 Alpha (IL-1-a), Interleukin 1 Beta (IL-1B), Monocyte Chemotactic Protein-1 (MCP-1), Epidermal Growth Factor (EGF), Interleukin 1 Receptor Antagonist (IL-1 RA)	CYTX	Blood (serum or plasma)	SST or EDTA plasma	500ul	Carry out sample preparation in accordance with collection tube manufacturer's instructions. Ideally samples should be non-haemolysed and non-lipaemic.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Randox Evidence Investigator	IL-2: 0.00 - 2.76 IL-4: 0.15 - 1.28 IL-6: 0.00 - 2.19 IL-8: 0.00 - 24.56 IL-10: 0.00 - 0.34 VEGF: 0.0 - 153.40 INF-γ: 0.00 - 0.11 TNFα: 0.46 - 2.19 IL-1α: 0.00 - 0.53 IL-1β: 0.04 - 1.56 MCP-1: 0 - 280.53 EGF 8.77 - 95.11 IL1RA:	pg/mL	On request	N/A
Randox Cytokine Array (High Sensitivity): Interleukin-2 (IL-2), Interleukin-4 (IL-4), Interleukin-6 (IL-6), Interleukin-8 (IL-8), Interleukin-10 (IL-10), Vascular Endothelial Growth Factor (VEGF), Interferon Gamma (IG), Tumour Necrosis Factor Alpha (TNFa), Interleukin 1 Alpha (IL-1-a), Interleukin 1 Beta (IL-1B), Monocyte Chemotactic Protein-1 (MCP-1), Epidermal Growth Factor (EGF)	CYHS	Blood (serum or plasma)	SST or EDTA plasma	500ul	Carry out sample preparation in accordance with collection tube manufacturer's instructions. Ideally samples should be non-haemolysed and non-lipaemic.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Randox Evidence Investigator	-	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Randox Cytokine Array 1 (Normal Sensitivity): Interleukin-2 (IL-2), Interleukin-4 (IL-4), Interleukin-6 (IL-6), Interleukin-8 (IL-8), Interleukin-10 (IL-10), Vascular Endothelial Growth Factor (VEGF), Interferon Gamma (IG), Tumour Necrosis Factor Alpha (TNFa), Interleukin 1 Alpha (IL-1-a), Interleukin 1 Beta (IL-1B), Monocyte Chemotactic Protein-1 (MCP-1), Epidermal Growth Factor (EGF)	CYA1	Blood (serum or plasma)	SST or EDTA plasma	500ul	Carry out sample preparation in accordance with collection tube manufacturer's instructions. Ideally samples should be non-haemolysed and non-lipaemic.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Randox Evidence Investigator	Serum &plasma IL-2: 0.00 - 2.42 0.69 - 2.22 IL-4: 0.88 - 2.63 0.82 - 2.98 IL-6: 0.00 - 2.13 0.00 - 2.21 IL-8: 0.95 - 14.11 0.05 - 6.70 IL-10: 0.04 - 1.05 0.14 - 1.08 VEGF: 0.00 - 211.65 0.00 - 56.17 IFN-γ: 0.00 - 1.24 0.03 - 0.58 TNF-α: 2.28 - 7.81 1.47 - 5.93 IL-1α: 0.00 - 0.27 0.02 - 0.27 IL-1β: 0.00 - 2.34 0.00 - 2.65 MCP-1: 44.62 - 395.52 12.98 - 136.18 EGF: 54.06 - 196.88	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Randox Cytokine Array V: Interleukin-3 (IL-3), Interleukin-7 (IL-7), Interleukin-12 P70 (IL-12 P70), Interleukin-13 (IL-13), Interleukin-23 (IL-23)	CYA5	Blood (serum or plasma)	SST or EDTA plasma	500ul	Carry out sample preparation in accordance with collection tube manufacturer's instructions. Ideally samples should be non-haemolysed and non-lipaemic.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Randox Evidence Investigator	Serum & plasma IL-3: <9.544 <8.41 IL-7: 3.35 - 33.82 1.82 - 16.04 IL-12: <3.19 <3.24 IL-13: <1.68 <1.98 IL-23: <0.0098 ng/ml <0.01 ng/ml	pg/mL	On request	N/A
Rantes	RANT	Blood (serum or plasma)	SST, platelet poor EDTA plasma or platelet poor heparin	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 18678-119117 EDTA: 203-1899 Heparin: 752-9720	pg/mL	On request	N/A
Receptor for advanced glycation end product (RAGE)	RAGE	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 538-2096 EDTA: 818-1777 Heparin: 668-1764	pg/mL	On request	N/A
Regenerating islet-derived-3-alpha (REG3)	REG3	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 3136-22856 EDTA: 3455-24482 Heparin: 3522-25352	pg/mL	On request	N/A
Resistin	RESI	Blood (serum or plasma)	SST serum EDTA plasma Heparin plasma	500µL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 4511-10,534 EDTA plasma: 4473-10,822 Heparin plasma: 4733-11,185	pg/mL	On request	N/A

Retinol binding protein (RBP)	RBPT	Blood (serum or plasma), saliva or urine	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection. Saliva - Collect saliva using a collection device such as a Salivette or equivalent. Saliva collector must not have any protein binding or filtering capabilities. Urine - Aseptically collect the first urine of the day (mid-stream), voided directly into a sterile container.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (R&D Systems kit)	Serum: 12700-48600 EDTA: 11900-48300 Heparin: 12200-43000 Urine:16.4-252 Saliva: 3.11-29.6	ng/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Salivary 17OH-progesterone	S17P	Saliva	Saliva	500uL	Avoid sample collection within 60 minutes after eating a major meal or within 12 hours after consuming alcohol. Avoid acidic or high sugar foods, to minimise rinse mouth thoroughly with water 10 minutes before sample is collected. Collect whole saliva by unstimulated passive drool. Donors tilt the head forward, allowing the saliva to pool on the floor of the mouth, then pass the saliva through the SalivaBio Collection Aid (SCA) into a polypropylene vial.	Refrigerate sample within 30 minutes, and freeze at or below -20ºC within 4 hours of collection. (Samples may be stored at -20°C for up to 6 months.)	Werfen DS2 (Salimetrics kit)	*Guide referece ranges available from manufacturer, laboratory to establish its own range.*	pg/mL	On request	N/A
Salivary Amylase	SALA	Saliva	Salivette	500µL	Avoid sample collection within 60 minutes after eating a major meal or within 12 hours after consuming alcohol. Avoid acidic or high sugar foods, to minimise rinse mouth thoroughly with water 10 minutes before sample is collected. Collect whole saliva by unstimulated passive drool. Donors tilt the head forward, allowing the saliva to pool on the floor of the mouth, then pass the saliva through the SalivaBio Collection Aid (SCA) into a polypropylene vial.	Refrigerate sample within 30 minutes, and freeze at or below -20ºC within 4 hours of collection. (Samples may be stored at -20°C for up to 6 months.)	Werfen DS2 (Salimetrics kit)	*Guide referece ranges available from manufacturer, laboratory to establish its own range.*	U/mL	On request	N/A
Salivary androstenedione	SAND	Saliva	Saliva	500uL	Avoid sample collection within 60 minutes after eating a major meal or within 12 hours after consuming alcohol. Avoid acidic or high sugar foods, to minimise rinse mouth thoroughly with water 10 minutes before sample is collected. Collect whole saliva by unstimulated passive drool. Donors tilt the head forward, allowing the saliva to pool on the floor of the mouth, then pass the saliva through the SalivaBio Collection Aid (SCA) into a polypropylene vial.	Refrigerate sample within 30 minutes, and freeze at or below -20ºC within 4 hours of collection. (Samples may be stored at -20°C for up to 6 months.)	Werfen DS2 (Salimetrics kit)	*Guide referece ranges available from manufacturer, laboratory to establish its own range.*	pg/mL	On request	N/A

Salivary Cortisol	SCOR	Saliva	Salivette	500µL	Avoid sample collection within 60 minutes after eating a major meal or within 12 hours after consuming alcohol. Avoid acidic or high sugar foods, to minimise rinse mouth thoroughly with water 10 minutes before sample is collected. Collect whole saliva by unstimulated passive drool. Donors tilt the head forward, allowing the saliva to pool on the floor of the mouth, then pass the saliva through the SalivaBio Collection Aid (SCA) into a polypropylene vial.	Refrigerate sample within 30 minutes, and freeze at or below -20ºC within 4 hours of collection. (Samples may be stored at -20°C for up to 6 months.)	Werfen DS2 (Salimetrics kit)	*Guide referece ranges available from manufacturer, laboratory to establish its own range.*	ug/dL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Salivary Cotinine	SCOT	Saliva	Salivette	500µL	Avoid sample collection within 60 minutes after eating a major meal or within 12 hours after consuming alcohol. Avoid acidic or high sugar foods, to minimise rinse mouth thoroughly with water 10 minutes before sample is collected. Collect whole saliva by unstimulated passive drool. Donors tilt the head forward, allowing the saliva to pool on the floor of the mouth, then pass the saliva through the SalivaBio Collection Aid (SCA) into a polypropylene vial.	Refrigerate sample within 30 minutes, and freeze at or below -20ºC within 4 hours of collection. (Samples may be stored at -20°C for up to 6 months.)	Werfen DS2 (Salimetrics kit)	*Guide referece ranges available from manufacturer, laboratory to establish its own range.*	ng/mL	On request	N/A
Salivary C-reactive protein (CRP)	SACP	Saliva	Saliva	500uL	Avoid sample collection within 60 minutes after eating a major meal or within 12 hours after consuming alcohol. Avoid acidic or high sugar foods, to minimise rinse mouth thoroughly with water 10 minutes before sample is collected. Collect whole saliva by unstimulated passive drool. Donors tilt the head forward, allowing the saliva to pool on the floor of the mouth, then pass the saliva through the SalivaBio Collection Aid (SCA) into a polypropylene vial.	Refrigerate sample within 30 minutes, and freeze at or below -20ºC within 4 hours of collection. (Samples may be stored at -20°C for up to 6 months.)	Werfen DS2 (Salimetrics kit)	*Guide referece ranges available from manufacturer, laboratory to establish its own range.*	pg/mL	On request	N/A
Salivary dehydroepiandrosterone sulphate (DHEAS)	SDES	Saliva	Saliva	500uL	Avoid sample collection within 60 minutes after eating a major meal or within 12 hours after consuming alcohol. Avoid acidic or high sugar foods, to minimise rinse mouth thoroughly with water 10 minutes before sample is collected. Collect whole saliva by unstimulated passive drool. Donors tilt the head forward, allowing the saliva to pool on the floor of the mouth, then pass the saliva through the SalivaBio Collection Aid (SCA) into a polypropylene vial. Samples visibly contaminated with blood should be recollected.	Refrigerate sample within 30 minutes, and freeze at or below -20ºC within 4 hours of collection. (Samples may be stored at -20°C for up to 6 months.)	Werfen DS2 (Salimetrics kit)	*Guide referece ranges available from manufacturer, laboratory to establish its own range.*	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Salivary DHEA	SDEA	Saliva	Salivette	500µL	Avoid sample collection within 60 minutes after eating a major meal or within 12 hours after consuming alcohol. Avoid acidic or high sugar foods, to minimise rinse mouth thoroughly with water 10 minutes before sample is collected. Collect whole saliva by unstimulated passive drool. Donors tilt the head forward, allowing the saliva to pool on the floor of the mouth, then pass the saliva through the SalivaBio Collection Aid (SCA) into a polypropylene vial. Samples visibly contaminated with blood should be recollected.	Refrigerate sample within 30 minutes, and freeze at or below -20ºC within 4 hours of collection. (Samples may be stored at -20°C for up to 6 months.)	Werfen DS2 (Salimetrics kit)	*Guide referece ranges available from manufacturer, laboratory to establish its own range.*	pg/mL	On request	N/A
Salivary estriol	SESI	Saliva	Saliva	300uL	Avoid sample collection within 60 minutes after eating a major meal or within 12 hours after consuming alcohol. Avoid acidic or high sugar foods, to minimise rinse mouth thoroughly with water 10 minutes before sample is collected. Collect whole saliva by unstimulated passive drool. Donors tilt the head forward, allowing the saliva to pool on the floor of the mouth, then pass the saliva through the SalivaBio Collection Aid (SCA) into a polypropylene vial. Samples visibly contaminated with blood should be recollected.	Refrigerate sample within 30 minutes, and freeze at or below -20ºC within 4 hours of collection. (Samples may be stored at -20°C for up to 6 months.)	Werfen DS2 (Salimetrics kit)	Premenopausal adult females AM: 0 - 16.4 Premenopausal adult females PM: 0 - 4.8 *Guide from manufacturer, laboratory to establish its own range.*	pg/mL	On request	N/A
Salivary estrone	SESE	Saliva	Saliva	500uL	Avoid sample collection within 60 minutes after eating a major meal or within 12 hours after consuming alcohol. Avoid acidic or high sugar foods, to minimise rinse mouth thoroughly with water 10 minutes before sample is collected. Collect whole saliva by unstimulated passive drool. Donors tilt the head forward, allowing the saliva to pool on the floor of the mouth, then pass the saliva through the SalivaBio Collection Aid (SCA) into a polypropylene vial. Samples visibly contaminated with blood should be recollected.	Refrigerate sample within 30 minutes, and freeze at or below -20ºC within 4 hours of collection. (Samples may be stored at -20°C for up to 6 months.)	Werfen DS2 (Salimetrics kit)	*Guide referece ranges available from manufacturer, laboratory to establish its own range.*	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Salivary IgA	SIGA	Saliva	Salivette	500µL	Avoid sample collection within 60 minutes after eating a major meal or within 12 hours after consuming alcohol. Avoid acidic or high sugar foods, to minimise rinse mouth thoroughly with water 10 minutes before sample is collected. Collect whole saliva by unstimulated passive drool. Donors tilt the head forward, allowing the saliva to pool on the floor of the mouth, then pass the saliva through the SalivaBio Collection Aid (SCA) into a polypropylene vial. Samples visibly contaminated with blood should be recollected.	Refrigerate sample within 30 minutes, and freeze at or below -20ºC within 4 hours of collection. (Samples may be stored at -20°C for up to 6 months.)	Werfen DS2 (Salimetrics kit)	*Guide referece ranges available from manufacturer, laboratory to establish its own range.*	µg/mL	On request	N/A
Salivary melatonin	SMEL	Saliva	Salivette	500µL	Avoid sample collection within 60 minutes after eating a major meal or within 12 hours after consuming alcohol. Avoid acidic or high sugar foods, to minimise rinse mouth thoroughly with water 10 minutes before sample is collected. Collect whole saliva by unstimulated passive drool. Donors tilt the head forward, allowing the saliva to pool on the floor of the mouth, then pass the saliva through the SalivaBio Collection Aid (SCA) into a polypropylene vial. Samples visibly contaminated with blood should be recollected.	Refrigerate sample within 30 minutes, and freeze at or below -20ºC within 4 hours of collection. (Samples may be stored at -20°C for up to 6 months.)	Werfen DS2 (Salimetrics kit)	*Guide referece ranges available from manufacturer, laboratory to establish its own range.*	pg/mL	On request	N/A
Salivary oestradiol	SOES	Saliva	Salivette	500µL	Avoid sample collection within 60 minutes after eating a major meal or within 12 hours after consuming alcohol. Avoid acidic or high sugar foods, to minimise rinse mouth thoroughly with water 10 minutes before sample is collected. Collect whole saliva by unstimulated passive drool. Donors tilt the head forward, allowing the saliva to pool on the floor of the mouth, then pass the saliva through the SalivaBio Collection Aid (SCA) into a polypropylene vial. Samples visibly contaminated with blood should be recollected.	Refrigerate sample within 30 minutes, and freeze at or below -20ºC within 4 hours of collection. (Samples may be stored at -20°C for up to 6 months.)	Werfen DS2 (Salimetrics kit)	*Guide referece ranges available from manufacturer, laboratory to establish its own range.*	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Salivary progesterone	SPRO	Saliva	Polypropylene vial	500µL	Avoid sample collection within 60 minutes after eating a major meal or within 12 hours after consuming alcohol. Avoid acidic or high sugar foods, to minimise rinse mouth thoroughly with water 10 minutes before sample is collected. Collect whole saliva by unstimulated passive drool. Donors tilt the head forward, allowing the saliva to pool on the floor of the mouth, then pass the saliva through the SalivaBio Collection Aid (SCA) into a polypropylene vial. Samples visibly contaminated with blood should be recollected.	Refrigerate sample within 30 minutes, and freeze at or below -20ºC within 4 hours of collection. (Samples may be stored at -20°C for up to 6 months.)	Werfen DS2 (Salimetrics kit)	*Guide referece ranges available from manufacturer, laboratory to establish its own range.*	pg/mL	On request	N/A
Salivary testosterone	STES	Saliva	Salivette	500µL	Avoid sample collection within 60 minutes after eating a major meal or within 12 hours after consuming alcohol. Avoid acidic or high sugar foods, to minimise rinse mouth thoroughly with water 10 minutes before sample is collected. Collect whole saliva by unstimulated passive drool. Donors tilt the head forward, allowing the saliva to pool on the floor of the mouth, then pass the saliva through the SalivaBio Collection Aid (SCA) into a polypropylene vial. Samples visibly contaminated with blood should be recollected.	Refrigerate sample within 30 minutes, and freeze at or below -20ºC within 4 hours of collection. (Samples may be stored at -20°C for up to 6 months.)	Werfen DS2 (Salimetrics kit)	*Guide referece ranges available from manufacturer, laboratory to establish its own range.*	pg/mL	On request	N/A
Sclerostin	SOST	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles. Grossly haemolysed samples should not be used.	Werfen DS2 (R&D Systems kit)	Serum: 67-300 EDTA: 200-712 Heparin: 222-805	pg/mL	On request	N/A

Serotonin	SERO	Blood (serum or plasma) or urine	Blood: SST, platelet rich EDTA or heparin plasma Urine: 24h sterile collection	500µL	Patients should avoid seratonin rich foods, certain medications may stimulate seratonin levels in blood. Collect samples as per local protcol, grossly haemolysed, lipaemic or icteric samples must not be used. A platelet extract can be prepared.	Serum stable for 2h at 18-25^{o}C, 6h at 2-8^{o}C and 3 months $\leq$ -20^{o}C. Platelet rich plasma stable for 2 weeks at < -20^{o}C, platelet extract stable for 4 weeks at < -20^{o}C and for 12 months at < -80^{o}C. Urine stable for 6 months at < -20^{o}C.	Werfen DS2 (IBL International kit)	Serum: 30-200 plasma: 1.8-7.5 platelets: 217-861 ng/10^{9} platelets urine: $\leq$200 ug/d	ng/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Serpin A6/cortisol binding globulin	CBG	Blood (serum or plasma)	SST or EDTA plasma	500uL	Serum - Allow samples to clot for 2 hours at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	7 days at 2-8℃ ≤1 month -20℃ ≤3 months -80℃ Avoid repeated freeze-thaw cycles	Werfen DS2 (Novus kit)	-	pg/mL	On request	N/A
Somatostatin	SMTN	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 2 hours at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	8 days at 2-8℃ ≤1 month -20℃ ≤3 months -80℃ Avoid repeated freeze-thaw cycles	Werfen DS2 (Novus kit)	-	pg/mL	On request	N/A
ST2 (IL-1 R4)	ST2	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 5397-36527 EDTA: 5201-36891 Heparin: 4883-37865	pg/mL	On request	N/A
Stem cell factor	SCF	Blood (serum or plasma)	SST, EDTA plasma, heparin plasma or citrate	500uL	Serum - Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles. Grossly lipaemic samples should not be used.	Werfen DS2 (R&D Systems kit)	Serum (male): 2205-11149 Serum (female): 3877-77273 Values in	pg/mL	On request	N/A
Stromal cell-derived factor 1a (CXCL12/SDF-1α)	SDF1	Blood (plasma)	Platelet poor EDTA plasma or platelet poor heparin plasma	500uL	Serum: Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles. Grossly haemolysed samples should not be used.	Protein Simple Ella	EDTA: 1763-2781 Heparin: 1691-2593	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
T.Inhib. Metalloproteinases-2 (TIMP-2)	TMP2	Blood (serum or plasma), saliva or	Serum, EDTA plasma, heparin plasma, saliva or	500uL	Serum: Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Serum/plasma: Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles. Grossly icteric or haemolysed samples should not be used.	Protein Simple Ella	Serum: 33300-87100 EDTA: 35100-80500 Heparin:	pg/mL	On request	N/A
T.inhib. metalloproteinases-3 (TIMP-3)	TMP3	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum: Allow samples to clot for about 4 hours at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles. Grossly haemolysed samples should not be used.	Werfen DS2 (Novus kit)	-	pg/mL	On request	N/A
T.inhib. metalloproteinases-4 (TIMP-4)	TMP4	Blood (serum or plasma) or human milk	SST, EDTA plasma or heparin plasma	500uL	Serum: Allow samples to clot for about 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma: Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection. Human Milk: Centrifuge for 15 minutes at 1000 x g at 2-8 °C. Collect the aqueous fraction and centrifuge twice more.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (R&D Systems kit)	Serum: 460-2661 EDTA: 516-2476 Heparin: 664-2328 Milk: 25700-111000	pg/mL	On request	N/A
Thrombomodulin/BDCA-3	THMD	Blood (serum or plasma) or urine	SST, EDTA plasma, heparin plasma, citrate plasma or urine	500uL	Serum: Allow samples to clot for about 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma: Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection. Urine: Aseptically collect the first urine of the day (mid-stream), voided directly into a sterile container. Centrifuge to remove particulate matter.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (R&D Systems kit)	Serum: 2866-5318 EDTA: 2815-5407 Heparin: 2805-5479 Citrate: 2353-4541 Urine: 3540-29100	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Thrombopoeitin	THPO	Blood (serum or platelet poor plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum: Allow samples to clot for about 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Platelet-poor Plasma - Collect plasma on ice. Centrifuge at 2-8 °C for 15 minutes at 1000 x g within 30 minutes of collection. An additional centrifugation step of the plasma at 10,000 x g for 10 minutes at 2-8 °C is recommended for complete platelet removal.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (R&D Systems kit)	Serum: ND-228 EDTA: ND-196 Heparin: ND-168	pg/mL	On request	N/A
Thrombospondin-1	THP1	Blood (serum or plasma)	Serum, platelet-poor EDTA plasma or platelet-poor heparin plasma	500uL	Serum: Allow samples to clot for about 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Platelet-poor Plasma - Collect plasma on ice. Centrifuge at 2-8 °C for 15 minutes at 1000 x g within 30 minutes of collection. An additional centrifugation step of the plasma at 10,000 x g for 10 minutes at 2-8 °C is recommended for complete platelet removal.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	-	pg/mL	On request	N/A
Thromboxane	TBX	Blood (serum or plasma) or urine	SST, EDTA plasma, heparin plasma or urine	500uL	Serum: Allow samples to clot for about 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma: Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection. Urine: Aseptically collect the first urine of the day (mid-stream), voided directly into a sterile container. Centrifuge to remove particulate matter.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles. Do not use lipemic, grossly hemolyzed, or turbid samples.	Werfen DS2 (R&D Systems kit)	Serum: 1.1-11.3 EDTA: ND-10.1 Heparin: ND-9.26 Urine: 3.5-72.5	ng/mL	On request	N/A
Tissue inhibitor of metalloproteinases-1	TIMP	Blood (serum or plasma) or CSF	SST, EDTA plasma or heparin plasma	500µL	Serum: Allow samples to clot for about 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Platelet-poor Plasma - Collect plasma on ice. Centrifuge at 2-8 °C for 15 minutes at 1000 x g within 30 minutes of collection. An additional centrifugation step of the plasma at 10,000 x g for 10 minutes at 2-8 °C is recommended for complete platelet removal.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 40509-145619 EDTA plasma: 36037-168192 Heparin plasma: 38827-71776 CSF: 44071-673106	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Tissue necrosing factor a	TNFA	Blood (serum or plasma) or broncho alveolar fluid	SST, EDTA plasma or heparin plasma	500µL	Serum: Allow samples to clot for about 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Platelet-poor Plasma - Collect plasma on ice. Centrifuge at 2-8 °C for 15 minutes at 1000 x g within 30 minutes of collection. An additional centrifugation step of the plasma at 10,000 x g for 10 minutes at 2-8 °C is recommended for complete platelet removal	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 4.05-8.34 EDTA plasma: 2.45-6.16 Heparin plasma: 2.87-7.99	pg/mL	On request	N/A
TNF alpha high sensitivity	TNFH	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500µL	Serum: Allow samples to clot for about 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Platelet-poor Plasma - Collect plasma on ice. Centrifuge at 2-8 °C for 15 minutes at	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 7.78-12.2 EDTA plasma: 4.94-9.68 Heparin plasma: 5.06-9.62	pg/mL	On request	N/A
TNF receptor 1	TNR1	Blood (serum or plasma)	Serum, EDTA plasma, heparin plasma or CSF	500uL	Serum: Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles. Grossly haemolysed or icteric samples should not be used.	Protein Simple Ella	Serum: 1065-2890 EDTA: 808-2790 Heparin: 879-3040 CSF: 742-1416	pg/mL	On request	N/A
TNF receptor 2 (TNF RII/TNFRSF1B)	TNR2	Blood (serum or plasma)	Serum, EDTA plasma or heparin plasma	500uL	Serum: Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles. Grossly haemolysed or icteric samples should not be used.	Protein Simple Ella	Serum: 1743-4198 EDTA: 1320-4758 Heparin: 1263-2995	pg/mL	On request	N/A
Transforming growth factor alpha	TGFA	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum: Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (R&D Systems kit)	Serum: ND-32 Plasma: ND	pg/mL	On request	N/A
Transforming growth factor B-1	TGF1	Blood (serum or plasma)	SST, platelet poor EDTA plasma or platelet poor heparin plasma	500µL	Serum: Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 30120-61578 PP EDTA: 1046-31915 PP heparin 1217-13398	pg/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Transforming growth factor B-2	TGF2	Blood (serum or plasma)	SST, EDTA plasma, heparin plasma or citrate	500µL	Serum: Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Werfen DS2 (R&D Systems kit)	Serum: ND-873 EDTA: ND-442 Citrate: ND-320 Heparin: ND-454	pg/mL	On request	N/A
Trappin-2/elafin	ELAF	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum: Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 5971-18525 EDTA: 6374-17637 Heparin: 6571-16072	pg/mL	On request	N/A
Uromodulin	UROM	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum: Allow samples to clot for 2 hours at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	7 days at 2-8°C ≤1 month -20°C ≤3 months -80°C Avoid repeated freeze-thaw cycles	Werfen DS2 (Novus kit)	-	ng/mL	On request	N/A
Vascular cell adhesion molecule-1	VCAM	Blood (serum or plasma) or CSF	SST, EDTA plasma or heparin plasma	500µL	Serum: Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 315808-973354 EDTA: 321648-879975 Heparin: 361463-768399 CSF: 21508-74820	pg/mL	On request	N/A
VEGF Receptor 1/FLT-1	FLT1	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum: Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles. Grossly heamolysed or icteric samples not suitable.	Protein Simple Ella	Serum: 84.4-165 EDTA: 73.8-199 Heparin: 65.0-140	pg/mL	On request	N/A
VEGF receptor 2	VGR2	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500uL	Serum: Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles. Grossly heamolysed or icteric samples not suitable.	Protein Simple Ella	Serum: 8968-12737 EDTA: 8355-13394 Heparin: 8246-12767	pg/mL	On request	N/A
VEGF receptor 3	FLT4	Blood (serum or plasma)	SST or citrate plasma	500uL	Serum: Allow samples to clot for 2 hours at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	6 days at 2-8°C ≤1 month -20°C ≤3 months -80°C Avoid repeated freeze-thaw cycles	Werfen DS2 (Novus kit)	Serum: 33-167 Citrate: 31-200	ng/mL	On request	N/A

Test Description	Test code	Sample type	Sample tube	Minimum volume	Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference ranges	Units	Frequency	Guide TAT
Visfatin	VISF	Blood (serum or plasma)	SST, EDTA plasma or heparin plasma	500µL	Serum: Allow samples to clot for 2 hours at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	7 days at 2-8℃ ≤1 month -20℃ ≤3 months -80℃ Avoid repeated freeze-thaw cycles	Werfen DS2 (Novus kit)	-	ng/mL	On request	N/A
Vitamin D binding protein	VDBP	Blood (serum or plasma) or urine	Blood: SST, EDTA plasma or heparin plasma Urine: Sterile universal	500µL	Serum: Allow samples to clot for 30 minutes at room temperature, centrifuge for 15 minutes at 1000 x g. Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid repeated freeze-thaw cycles. Grossly heamolysed or icteric samples not suitable.	Protein Simple Ella	Serum: 92.9-225 EDTA: 95.0-243 Heparin: 88.4-293 Urine: 1040-75244	µg/mL	On request	N/A