

Scientific Research and Innovation Services

assay repertoire

Document No:CR&D-LI-234Author:David CardRevision:1.2Approved:Tracey MareDate active:28/04/2023Review date:28/04/2024

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

					Research tests						
	NB: May req	uire valida	tion, not always	immediatel	y available, this list is not exhaustive, please	contact us to enquire about any o	other test you re	equire			
Test Description	Test	Sample	Sample tube	Minimum	Processing requirements	Storage requirements	Method	Reference	Units	Frequency	Guide TA
	code	type		volume	(pre-analysis)	(pre-analysis)		ranges			
1,5-anhydroglucitol	15AG	Blood	SST or	500uL	Serum - allow samples to clot for 30	2-8°C for 7 days	Glycomark kit		ug/mL	On request	N/A
		(serum	EDTA plasma		minutes at room temperature, centrifuge	-20°C for longer storage,		Females: 6.8-29.3			
		or			for 15 minutes at 1000 x g.	samples my be freeze thawed		All: 9.7-31.4			
		plasma)			Plasma - Centrifuge for 15 minutes	up to three times.					
					at 1000 x g within 30 minutes of collection.						
17-OH-Progesterone	17PG	Blood	SST or	500uL	The usual precautions for venipuncture	2-8°C for 7 days	Werfen DS2	Females:	ng/mL	On request	N/A
		(serum	EDTA plasma		should be observed. It is important to	-20°C (Aliquots) for 3 months	(IBL kit)	FollicuLar phase -			
		or			preserve the chemical integrity of a blood	Keep away from heat or direct		0.3-1.0			
		plasma)			specimen from the moment it is collected	sunlight. Avoid repeated freeze-		Luteal phase -			
					until it is assayed. Do not use grossly	thaw cycles.		0.2-2.9			
					hemolvtic. icteric or grossly lipemic			Post ACTH stim		-	
a1-acid glycoprotein	AGP	Blood	SST,	500uL	Serum - allow samples to clot for 30	Aliquot serum/plasma/urine	Werfen DS2	Serum: 301-1136	ug/mL	On request	N/A
		(serum	EDTA plasma,		minutes at room temperature, centrifuge	and store samples at ≤ -20 °C.	(Biotechne	Plasma: 322-1143	(serum/		
		or	heparin		for 15 minutes at 1000 x g.	Avoid repeated freeze-thaw	kit)	Urine: 68-19100	plasma)		
		plasma)	plasma		Plasma - Centrifuge for 15 minutes	cycles.			ng/mL		
		urine	or urine		at 1000 x g within 30 minutes of collection. Urine - Aseptically collect the first urine of				(urine)		
Activin A	АСТА	Blood	SST or	300uL	Serum - Allow samples to clot for 30	Aliquot serum/plasma/urine	Werfen DS2	Serum: 142-753	pg/mL	On request	N/A
		(serum	EDTA plasma	30002	minutes at room temperature before	and store samples at \leq -20 °C.	(Biotechne	Plasma: 115-665	P6/111	onrequest	
		or	20 m plaonia		centrifugation for 15 minutes at $1000 \times g$.	Avoid repeated freeze-thaw	kit)	1 10011101 220 000			
		plasma)			Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection.	-,					
Adiponectin	ADIP	Blood	SST or	500uL	Serum - Allow samples to clot for 30	Aliquot serum/plasma and	Protein	Serum:	pg/mL	On request	N/A
		(serum	EDTA or		minutes at room temperature before	store samples at ≤ -20 °C. Avoid	Simple Ella	5344-14,425			
		or	heparin		centrifugation for 15 minutes at 1000 x g.	repeated freeze-thaw cycles.		EDTA plasma: 3051-			
		plasma)	Plasma		Plasma - Centrifuge for 15 minutes at 1000			12,506			
					x g within 30 minutes of collection.			Heparin plasma:			
								2373-15.202			
Adrenomedullin	ADM	Blood	SST or	500uL	Serum: Allow samples to clot for 2 hours at	-20°C (≤1 month) or -80°C (≤3	Werfen DS2	-	pg/mL	On request	N/A
		(serum	EDTA or		room temperature or overnight at 4°C	months). Avoid repeated freeze-	(Novus kit)				
		or	heparin		before centrifugation for 15 min at	thaw cycles. Hemolysed					
		plasma)	Plasma		1000×g at 2~8°C. Blood collection tubes	samples are not suitable					

Test Description	Test		Sample tube		Processing requirements	Storage requirements	Method	Reference	Units	Frequency	Guide TAT
	code	type		volume	(pre-analysis)	(pre-analysis)		ranges			
Aflibercept	AFIB	Blood	SST or	500uL	Serum: Allow samples to clot for 2 hours at	Storage: 2-8°C, Stability: 3d	Werfen DS2		ng/mL	On request	N/A
		(serum	EDTA or		room temperature or overnight at 4°C		(Eagle Bio kit)				
		or	heparin		before centrifugation for 15 min at						
		plasma)	plasma		1000×g at 2~8°C. 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°C						
					within 30 min of collection.						
					Do not use grossly hemolytic, icteric or						
					grossly lipemic specimens. Samples						
					appearing turbid should be						
					centrifuged before testing						
a-klotho	AKLO	Blood	SST, EDTA	500uL	Test samples should be measured soon	Store frozen, avoid repeated	Werfen DS2		pg/mL	On request	N/A
		(serum	plasma or		after collection. Urine samples are less	freeze-thaw cycles.	(IBL kit)				
	or plasma)	urine		stable than serum, therfore freeze urine							
		plasma)			samples rapidly after collection and avoid						
		or urine			refreezing.						
alpha 2-macroglobuLin	A2M	Blood	SST or	500uL	Serum - allow samples to clot for 30	-20°C or -80°C. Avoid repeated	Werfen DS2		pg/mL	On request	N/A
		(serum	EDTA plasma		minutes at room temperature, centrifuge	freeze-thaw cycles.	(Biotechne				
		or			for 15 minutes at 1000 x g.		kit)				
		plasma)			Plasma - Centrifuge for 15 minutes						
		[· ´			at 1000 x g within 30 minutes of collection.						
					, , , , , , , , , , , , , , , , , , ,						
Amylin	AMLN	Blood	SST or	500uL	Serum - allow samples to clot for 30	-20°C (≤1 month)	Werfen DS2	-	pg/mL	On request	N/A
		(serum	EDTA plasma		minutes at room temperature, centrifuge	or -80°C (≤3 months)	(Novus kit)				
		or			for 15 minutes at 1000 x g.						
		plasma)			Plasma - Centrifuge for 15 minutes						
		`			at 1000 x g within 30 minutes of collection.						
Amyloid b protein	AMBP	CSF	Universal	500uL	Use local CSF collection protocol	Freeze sample at ≤ -70 °C.	Werfen DS2	ND-711	pg/mL	On request	N/A
			container			within one hour of collection	(R&D Systems				
							kit)				
Angiopoietin-2	AP02	Blood	SST,	500uL	Serum - allow samples to clot for 30	-20°C (≤1 month)	Protein	-	pg/ml	On request	N/A
		(serum	EDTA plasma		minutes at room temperature, centrifuge	or -80°C (≤3 months)	Simple Ella		10/112		
		or	or heparin		for 15 minutes at 1000 x g.						
		plasma)	plasma		Plasma - Centrifuge for 15 minutes						
			plasma		at 1000 x g within 30 minutes of collection.						
					at 1000 x g within 50 minutes of conection.						

Test Description	Test	Sample	Sample tube		Processing requirements	Storage requirements	Method	Reference	Units	Frequency	Guide TAT
	code	type		volume	(pre-analysis)	(pre-analysis)		ranges			
Angiotensin 1	ANG1	Serum	SST	1000uL	Allow samples to clot for 2 hours at room	· · · ·	Sandwich	-	pg/mL	On request	N/A
					temperature or overnight at 4°C.	freeze-thaw cycles.	ELISA				
					Centrifugation for 15 min at 1000×g at 2-						
					8°C. Collect the supernatant to carry out						
					the assay. Use nonendotoxin blood						
Angiotensin 1-7	ANG7	Blood	SST or	500uL	Serum - allow samples to clot for 30	-20°C	Werfen DS2	-	pg/mL	On request	N/A
		(serum	EDTA plasma		minutes at room temperature, centrifuge	(stability not yet evaluated).	(Biotechne				
		or			for 15 minutes at 1000 x g.	Avoid repeated freeze-thaw	kit)				
		plasma)			Plasma - Centrifuge for 15 minutes	cycles.					
					at 1000 x g within 30 minutes of collection.						
Angiotensin 1-7 (AG17)	AG17	Serum	SST	300uL	Allow samples to clot for 2 hours at room	4°C - stable for 7 days. Frozen (-	Competitive		pg/mL	On request	N/A
	/ 102/	oc. am		00042	temperature or overnight at 4°C.	20° C) - stable for ≤ 1 month.	ELISA		P6/	onrequest	,
					Centrifugation for 15 min at 1000×g at 2-	Frozen (-80°C) - stable for ≤ 3	ELISIT				
					8°C. Collect the supernatant to carry out	months. Avoid repeated freeze-					
					the assay. Use nonendotoxin blood	thaw cycles.					
Angiotensin 1-9	ANG9	Blood	SST	500uL	Serum - allow samples to clot for 30	-20°C	Werfen DS2		pg/mL	On request	N/A
Anglotensin 1 9		(serum	EDTA plasma	JUUUL	minutes at room temperature, centrifuge	(stability not yet evaluated).	(Biotechne		P6/1112	Onrequest	
		or			for 15 minutes at 1000 x g.	Avoid repeated freeze-thaw	kit)				
		plasma)			Plasma - Centrifuge for 15 minutes	cycles.	KIC)				
		plasmaj			at 1000 x g within 30 minutes of collection.	· · · · · · · · · · · · · · · · · · ·					
					at 1000 x g within 30 minutes of conection.						
Angiotensin 1-9 (AG19)	AG19	Blood	SST	1000uL	Allow samples to clot for 2 hours at room	Frozen (-80°C). Avoid repeated	Competitive	-	pg/mL	On request	N/A
		(serum)			temperature or overnight at 4°C.	freeze-thaw cycles.	ELISA				
					Centrifugation for 15 min at 1000×g at 2-						
					8°C. Collect the supernatant to carry out						
					the assay. Use nonendotoxin blood						
					collection tubes.						
Angiotensin 2 (ANG2)	ANG2	Blood	SST	1000uL	Allow samples to clot for 2 hours at room	Frozen (-80°C). Avoid repeated	Competitive	-	pg/mL	On request	N/A
		(serum)			temperature or overnight at 4°C.	freeze-thaw cycles.	ELISA				
					Centrifugation for 15 min at 1000×g at 2-						
					8°C. Collect the supernatant to carry out						
					the assay. Use nonendotoxin blood						
Angiotensin converting enzyme 2	ACE2	Blood	SST	500uL	Allow samples to clot for 2 hours at room	Frozen (-80°C). Avoid repeated	Werfen DS2	-	pg/mL	On request	N/A
		(serum	EDTA plasma		temperature or overnight at 4°C.	freeze-thaw cycles.	(Biotechne				
		or			Centrifugation for 15 min at 1000×g at 2-		kit)				
		plasma)			8°C. Collect the supernatant to carry out						
Angiotensin I Converting Enzyme (ACE)		Blood	SST	300uL	Allow samples to clot for 2 hours at room	4°C - stable for 4 weeks. Frozen	Immunoassay	-	pg/mL	On request	N/A
		(serum)			temperature or overnight at 4°C.	(-80°C) - stable for ≤3 months.					
					Centrifugation for 15 min at 1000×g at 2-	Avoid repeated freeze-thaw					
					8°C. Collect the supernatant to carry out	cycles.					
					the assay. Use nonendotoxin blood						

Test Description	Test		Sample tube		Processing requirements	Storage requirements	Method	Reference	Units	Frequency	Guide TAT
	code	type		volume	(pre-analysis)	(pre-analysis)		ranges			
Angiotensin I Converting Enzyme 2 (ACE2)		Blood	SST	300uL	Allow samples to clot for 2 hours at room	4°C - stable for 7 days. Frozen (-	Sandwich	-	pg/mL	On request	N/A
		(serum)			temperature or overnight at 4°C.	20°C) - stable for ≤1 month.	ELISA				
					Centrifugation for 15 min at 1000×g at 2-	Frozen (-80°C) - stable for ≤3					
	TABALL	Disad	CCT	F00I	8°C.	months.	M/			0	NI / A
Anti Mullerian hormone	ТАМН	Blood	SST or	500uL	Serum - allow samples to clot for 1 hour or	4°C - stable for 7 days. Frozen (-	Werfen DS2	-	ng/mL	On request	N/A
		(serum	EDTA plasma		overnight at 2-8 $^{\circ}$ C , centrifuge for 20	20° C) - stable for ≤ 1 month.	(Biotechne				
		or			minutes at 1000 x g. Plasma - Centrifuge for	Frozen (-80°C) - stable for ≤3	kit)				
		plasma)			15 minutes at 1000 x g within 30 minutes of	months.					
					collection. Use nonendotoxin blood						
					collection tubes, haemolysed/lipaemic						
					samples not suitable.						
Apelin Total	APLN	Blood	SST or	500uL	Serum: Allow samples to clot for 2 hours at	4°C - stable for 7 days. Frozen (-	Werfen DS2	-	pg/mL	On request	N/A
		(serum	EDTA plasma		room temperature or overnight at 2-8°C.	20°C) - stable for ≤1 month.	(Biotechne				
		or			Centrifugation for 15 min at 1000×g at 2-	Frozen (-80°C) - stable for ≤3	kit)				
		plasma)			8°C.	months.					
					Plasma - Centrifuge for 15 minutes						
					at 1000 x g within 30 minutes of collection.						
					Ŭ						
Apelin-13	AP13	Blood	SST or	500uL	Serum: Allow samples to clot for 2 hours at	4°C - stable for 7 days. Frozen (-	Werfen DS2	-	pg/mL	On request	N/A
		(serum	EDTA plasma		room temperature or overnight at 2-8°C.	20°C) - stable for ≤1 month.	(Biotechne				
		or			Centrifugation for 15 min at 1000×g at 2-	Frozen (-80°C) - stable for ≤3	kit)				
		plasma)			<u> </u>	months.					
Apelin-17	AP17	Blood	SST or	500uL	Serum: Allow samples to clot for 2 hours at	4°C - stable for 7 days. Frozen (-	Werfen DS2	-	nmol/L	On request	N/A
		(serum	EDTA plasma		room temperature or overnight at 2-8°C.	20°C) - stable for ≤1 month.	(Biotechne				
		or			Centrifugation for 15 min at 1000×g at 2-	Frozen (-80°C) - stable for ≤3	kit)				
		plasma)			8°C.	months.					
					Plasma - Centrifuge for 15 minutes						
					at 1000 x g within 30 minutes of collection.						
Apelin-36	AP36	Blood	SST or	500uL	Serum: Allow samples to clot for 2 hours at	4°C - stable for 7 days. Frozen (-	Werfen DS2	-	U/ml	On request	N/A
		(serum	EDTA plasma		room temperature or overnight at 2-8°C.	20°C) - stable for ≤1 month.	(Biotechne				
		or			Centrifugation for 15 min at 1000×g at 2-	Frozen (-80°C) - stable for ≤3	kit)				
		plasma)			8°C.	months.					
					Plasma - Centrifuge for 15 minutes						
Apolipoprotein A1	APOA	Blood	SST, EDTA	500uL	Serum - allow samples to clot for 30	Store samples at ≤ -20 °C. Avoid	Werfen DS2	Serum: 1.48-3.20	mg/mL	On request	N/A
		(serum	plasma,		minutes at room temperature before	repeated freeze-thaw cycles.	(Biotechne	EDTA plasma:	_		
		or	heparin		centrifugation for 15 minutes at 1000 x g.		kit)	1.40-2.87			
		plasma)	plasma or		Plasma - Centrifuge for 15 minutes			Heparin plasma:			
		or urine	urine		at 1000 x g within 30 minutes of collection.			1.19-2.97			

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

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
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)	Ē	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°C before centrifugation for 15 min at 1000×g at 2~8°C. Blood collection tubes should be non-endotoxin.	Analyse within 7 days when stored at 4°C, or aliquotte and store at -20°C (≤1 month) or -80°C (≤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	ВАР	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	SST or	500uL	Serum: Allow samples to clot for 30	≤-20 °C for up to three months.	Werfen DS2	-	U/L	On request	N/A
		(serum	EDTA plasma		minutes at room temperature before	Avoid repeated freeze-thaw	(Novus kit)				
		or	1		centrifugation for 15 minutes at 1000 x g.	cycles.					
		plasma)	1		Plasma: Centrifuge for 15 minutes at 1000 x					1	
					g within 30 minutes of collection.						

Test Description	Test	Sample	Sample tube		Processing requirements	Storage requirements	Method	Reference	Units	Frequency	Guide TAT
	code	type		volume	(pre-analysis)	(pre-analysis)		ranges			
Carbonic anhydrase IX	CA9	Blood	SST, EDTA	500uL	Serum: Allow samples to clot for 30	≤-20 °C for up to three months.	Werfen DS2	-	pg/mL	On request	N/A
		(serum	plasma,		minutes at room temperature before	Avoid repeated freeze-thaw	(Novus kit)				
		or	heparin		centrifugation for 15 minutes at 1000 x g.	cycles.					
		plasma)	plasma,		Plasma: Centrifuge for 15 minutes at 1000 x						
		or urine	citrate		g within 30 minutes of collection.						
			plasma or								
Condicturation 1	CAR1	Dired		500uL		≤-20 °C for up to three months.	Werfen DS2			O	N/A
Cardiotrophin 1	CARI	Blood	SST or		Plasma: Centrifuge samples at 3000 x g for			-	nmol/L	On request	N/A
		(serum	EDTA plasma		10 minutes.	Avoid repeated freeze-thaw	(Novus kit)				
		or			Serum: After clot formation, centrifuge	cycles.					
		plasma)			samples at 3000 x g for 10 minutes.						
Cartilage Oligomeric Matrix Protein	СОМ	Blood	SST serum,	500uL	Serum: Allow samples to clot for 30	Assay immediately or aliquot	Protein	Serum:	pg/mL	On request	N/A
		(serum	EDTA plasma		minutes at room temperature before	and store at \leq -20 °C.	Simple Ella	72,611-328,847	1.0,		ŕ
		or	or heparin		centrifugation for 15 minutes at 1000 x g.	Avoid repeated freeze-thaw		EDTA plasma:			
		plasma)	plasma		Plasma: Centrifuge for 15 minutes at 1000 x	cycles.		108,529-331,703			
		prasma,	plasina		g within 30 minutes of collection.	eyeleel		Heparin plasma:			
Cholecystokinin	ССК	Blood	Plain serum	500uL	Serum: Allow samples to clot for 2 hours at	Assay immediately or aliquot	Werfen DS2	-	ng/mL	On request	N/A
		(serum	(no additive)		room temperature or overnight at 4°C	and store at ≤ -20 °C.	(Novus kit)				
		or	SST or		before centrifugation for 15 min at	Avoid repeated freeze-thaw					
		plasma)	EDTA plasma		1000×g at 2~8°C. Blood collection tubes	cycles.					
		· · ·	·		should be non-endotoxin.	·					
Circulating immune complex	CIQ	Blood	SST or	500uL	All specimens should be collected	2°-8°C for up to 7 days	Werfen DS2	<4.0	ug	On request	N/A
		(serum	EDTA plasma		aseptically and prepared using standard	–20°C or below for longer	(Novus kit)		Eq/mL		
		or			techniques for clinical laboratory testing.	periods					
		plasma)			Do not heat-inactivate the specimens.						
Clusterin	CLUS	Blood	SST serum,	500uL	Serum: Allow to clot for 30 minutes at	Store serum/plasma samples at	Protein	Serum: 178-235	ug/mL	On request	N/A
		(serum	EDTA plasma,		room temperature, centrifuge for 15	≤-20°C. Avoid repeated freeze-	Simple Ella	EDTA: 187-272			
		or	heparin		minutes at 1000 x g.	thaw cycles.		Heparin: 147-238			
		plasma)	plasma or		Plasma: Centrifuge for 15 minutes at 1000 x	Urine: store at ≤-80°C		Urine: 126-552			
		or urine	urine		g within 30 minutes of collection.						
Colony stimulating factor 2 GMCSF	CSF2	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Normally	ng/mL	On request	N/A
		(serum	plasma or		minutes at room temperature centrifuge	repeated freeze-thaw cycles.	Simple Ella	undetectable.			
		or	heparin		for 15 minutes at 1000 x g.	· · ·	·				
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
		l' í			x g within 30 minutes of collection.						
Complement factor 3a-desArg	C3A	Blood	SST or EDTA	500uL	-	-	Werfen DS2	-	ng/mL	On request	N/A
		(serum	plasma				(Quidell kit)				
		or									
		plasma)									

Test		Sample tube		Processing requirements	Storage requirements	Method	Reference	Units	Frequency	Guide TAT
				(pre-analysis)	(pre-analysis)		ranges			
CBB		ŕ	500uL	-	-		-	ng/mL	On request	N/A
	``					(Quidell kit)				
	-	urine								
	• •									
ADPS	Blood		500uL					ng/mL	On request	N/A
	(serum	EDTA plasma,				(Biotechne				
	or	heparin		for 15 minutes at 1000 x g. store samples at		kit)				
	plasma)	plasma or		≤ -20 °C.			Urine: ND-7.32			
CORN	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Werfen DS2	Serum: 578-3138	pg/mL	On request	N/A
	(serum	plasma or		minutes at room temperature centrifuge	repeated freeze-thaw cycles.	(Biotechne	EDTA: 489-3032			
	or	heparin		for 15 minutes at 1000 x g.		kit)	Heparin: 568-3058			
	plasma)	Plasma		Plasma - Centrifuge for 15 minutes at 1000						
CTRF	Blood	SST or	500uL	Serum - Allow samples to clot for 2 hours at	7 days at 2-8°C	Werfen DS2	-	pg/mL	On request	N/A
	(serum	EDTA plasma		room temperature centrifuge for 15	≤1 month -20°C	(Novus kit)				
	or			minutes at 1000 x g.	≤3 months -80°C					
	plasma)			Plasma - Centrifuge for 15 minutes at 1000	Avoid repeated freeze-thaw					
				x g within 30 minutes of collection.	cycles					
COTS	Blood	SST, urine or	500uL	-	-	Werfen DS2	-	ng/mL	On request	N/A
	(serum),	saliva				(Novus kit)				
	urine or									
	saliva									
ТСР	Blood	SST or	500uL	Serum - Allow samples to clot for 2 hours at	30 days at -80°C. Avoid multiple	Siemens	0.9-7.1	ng/mL	On request	N/A
	(serum	heparin		room temperature centrifuge for 15	freeze thaw cycles.	ImmuLite				
	or	plasma		minutes at 1000 x g.						
	plasma)			Plasma - Centrifuge for 15 minutes at 1000						
				x g within 30 minutes of collection.						
СТХ	Blood	SST, EDTA	500uL	Serum: Allow samples to clot for 2 hours at	7 days at 2-8°C	Werfen DS2	-	ng/mL	On request	N/A
	(serum	plasma or		room temperature or overnight at 4°C	≤1 month -20°C	(Novus kit)		-		
	or	heparin		before centrifugation for 15 min at	≤3 months -80°C					
	plasma)	plasma		1000×g at 2~8°C. Blood collection tubes	Avoid repeated freeze-thaw					
CY18	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: ND-2049	pg/mL	On request	N/A
	(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: ND-2159			
	or	heparin		for 15 minutes at 1000 x g.			Heparin: ND-2810			
	plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
DHEA	Blood	SST	500uL	Allow samples to clot for 30 minutes at	Stable for 4 days at 2-8°C and 3	Werfen DS2	Males: 0.52 – 5.18	ng/mL	On request	N/A
	(serum)			room temperature, centrifuge for 15	months at ≤-20°C. Do not use	(IBL	Females:			
_				minutes at 1000 x g.	grossly hemolytic, icteric or	International	0.36 – 7.82			
				minutes at 1000 x g.	grossly hemolytic, icteric or lipemic specimens. Samples	International kit)	0.36 – 7.82			
				minutes at 1000 x g.	· · · ·		0.36 – 7.82			
				minutes at 1000 x g.	lipemic specimens. Samples		0.36 – 7.82			_
	code CBB ADPS CORN CORN COTS TCP CTX CY18	codetypeCBBBloodCBBSloodorplasma)or urineGreenADPSBloodADPSBloodCORNBloodCORNBloodCORNBloodCORNBloodCORNBloodCORNBloodCORNBloodCORNBloodCORNBloodCTRFBloodCTRFBloodCOTSBloodCOTSBloodCCTRBloodCCTRBloodCCTRBloodCCTRBloodCTRBloodCTRBloodCTRBloodCTRBloodCTRBloodCTRBloodCTRBloodCTRBloodCTRBloodCTRBloodCTRBloodCTRBloodCTRBloodCTRBlood	codetypeCBBBloodSST, EDTACBBBloodSST, EDTA(serumplasma oror urineor urineADPSBloodSST serum,(serumEDTA plasma,orplasma)plasma orPlasmaplasma orCORNBloodSST, EDTA(serumplasma orCORNBloodSST, EDTA(serumplasma ororheparinplasma)PlasmaCTRFBloodSST or(serum, plasma)EDTA plasmaorplasmaCTRFBloodSST or(serum, plasma)salivaCTRFBloodSST, urine or salivaTCPBloodSST orheparin or plasma)plasmaCTXBloodSST, EDTA plasmaplasma)plasmaCY18BloodSST, EDTA 	codetypevolumeCBBBloodSST, EDTA500uL(serumplasma ororurineplasma)or urineineineor urineEDTA plasma,orineADPSBloodSST serum, (serumEDTA plasma, orineplasma)plasmaorineorplasma)plasma orineCORNBloodSST, EDTA500uL(serumplasma ororheparinplasma)PlasmaorineCORNBloodSST or500uL(serumEDTA plasmaorplasma)Plasmaorplasma)PlasmaineCTRFBloodSST or(serum, plasma)salivaineCTSBloodSST, urine or salivaineTCPBloodSST, cort plasma)ineCTXBloodSST, EDTA plasmajoulor plasma)plasma or or plasmaineCTXBloodSST, EDTA plasmaineCY18BloodSST, EDTA plasmajoulDHEABloodSST500uLplasma)plasma or plasmaineDHEABloodSST, EDTA plasmaineDHEABloodSST, EDTA plasmajoulDHEABloodSST, EDTA plasmaineDHEABloodSST, EDTA plasmaineDHEABloodSST </td <td>codetypevolume(pre-analysis)CBBBloodSST, EDTA500uL(serumplasma)ororurineminutesplasma)or urineminutes at room temperature centrifugeorreparin500uL(serumEDTA plasma,plasma)plasma orserum - Allow samples to clot for 30orheparinfor 15 minutes at 1000 x g. store samples atplasma)plasma orserum - Allow samples to clot for 30(serumplasma orserum - Allow samples to clot for 30(serumplasma orfor 15 minutes at 1000 x g.plasma)PlasmaPlasma - Plasma - Plasma - Centrifuge for 15 minutes at 1000 x g.CTRFBloodSST, urine or(serum),salivasalivaorplasma)salivaTCPBloodSST, eDTASUQSST, errorSOULCOTSBloodSST, urine orsalivasalivaTCPBloodSST, eDTAplasma)plasmaplasma)plasmaplasma)plasmacrttpSloodCTXBloodSST, EDTA(serum)plasmaplasma)plasmaplasma)centrifuge for 15 minutes at 1000xxserum - Allow samples to clot for 2 hours at room temperature centrifuge for 15 minutes at 1000 x g.CTRFBloodSST, EDTASUDSerum - Allow samples to clot for 2 hours at room temperature centr</td> <td>code type volume (pre-analysis) (pre-analysis) CBB Blood SST, EDTA plasma) or urine SST, EDTA plasma) or urine SOUL Soul Serum - Allow samples to clot for 30 minutes at room temperature centrifuge for 15 minutes at 1000 x g. store samples at s-20°C. Store samples at s-20°C. Avoid repeated freeze-thaw cycles. CORN Blood SST, EDTA plasma) SST, EDTA plasma or or plasma) Soul Serum - Allow samples to clot for 30 minutes at room temperature centrifuge for 15 minutes at 1000 x g. Store samples at s-20°C. Avoid repeated freeze-thaw cycles. CORN Blood SST, EDTA plasma Soul Serum - Allow samples to clot for 30 minutes at 1000 x g. Store samples at s-20°C. Avoid repeated freeze-thaw cycles. CTRF Blood SST or plasma) Soul Serum - Allow samples to clot for 2 hours at room temperature centrifuge for 15 minutes at 1000 x g. Avoid repeated freeze-thaw Avoid repeated freeze-thaw Avoid repeated freeze-thaw COTS Blood SST, urine or saliva Soul Serum - Allow samples to clot for 2 hours at room temperature centrifuge for 15 minutes at 1000 x g. 30 days at -80°C. Avoid multiple freeze thaw cycles. TCP Blood SST or (serum) Soul Serum - Allow samples to clot for 2 hours at room temperature coretrifu</td> <td>codetypevolume(pre-analysis)(pre-analysis)Werfen DS2CB8BloodSST, EDTA plasma or or urine500uLSouWerfen DS2(Quidell kit)ADPSBloodSST serum, repartin500uLSerum - 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.Werfen DS2 (Biotechne kit)CORNBloodSST, EDTA plasma or or neparinSouLSerum - 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.Werfen DS2 (Biotechne kit)CORNBloodSST, EDTA plasma or or heparin or plasmaSouLSerum - Allow samples to clot for 2 hours at room temperature centrifuge for 15 minutes at 1000 x g.T days at 2-8°C clot of 2 hours at room temperature centrifuge for 15 minutes at 1000 x g.Werfen DS2 (Riotechne kit)COTS BloodSST, urine or plasma)SouLSerum - Allow samples to clot for 2 hours at room temperature centrifuge for 15 minutes at 1000 x g.Avoid repeated freeze-thaw cyclesWerfen DS2 (Novus kit)TCPBloodSST, EDTA plasma or plasma)SouLSerum - Allow samples to clot for 2 hours at room temperature centrifuge for 15 minutes at 1000 x g.30 days at -80°C. Avoid multiple freeze thaw cycles.Siemens immuteTCPBloodSST, EDTA plasma or plasma or plasmaSouLSerum - Allow samples to clot for 2 hours at<</td> <td>codetypevolume(pre-analysis)(pre-analysis)(pre-analysis)rangesCBBBloodSST, EDTA or or or plasmal or urineSOULSouldSouldSouldSouldWerfen DS2 (Quidell kt)ADPSBloodSST serum, or heparin or or heparin or heparin or or heparin or or heparin or or heparin or or heparin or or heparin or or heparin or or heparin or or heparin or or heparin or or heparin or or heparin or heparin or or heparin or or heparin or or heparin or or heparin or heparin or or heparin or or heparin or or plasmaSould bould struct at 1000 xg. Plasma - Centrifuge for 15 minutes at 10</td> <td>codetypevolume(pre-analysis)(pre-analysis)(pre-analysis)rangesCBBBloodSST, EDTA (grum plasma) or urine plasma) or urineSSOULSerum - Allow samples to clot for 30 minutes at 1000 kg. store samples at 5-20°C. Avoid (grum plasma) or urine plasma)Werfen DS2 (Biotechne (Biotechne kt)Serum - Allow samples to clot for 30 minutes at 1000 kg. store samples at 5-20°C. Avoid repeated freeze-thaw cycles.Werfen DS2 (Biotechne kt)Serum - 129-3238 (Biotechne kt)Serum - 129-3238 (Biotechne kt)Serum - 1200 kg. store samples at - 20°C.Werfen DS2 (Biotechne kt)Serum - 120-3338 (Biotechne kt)Serum - 1200 kg. store samples at - 20°C.Werfen DS2 (Biotechne kt)Serum - 120-3338 (Biotechne kt)Serum - 1200 kg. store samples at - 20°C.Werfen DS2 (Biotechne kt)Serum - 1200 kg. (Biotechne kt)Werfen DS2 (Biotechne kt)Serum - 1200 kg. (Biotechne kt)Serum - 1200 kg. (Biotechne kt)Werfen DS2 (CTRFSerum - 1200 kg. (Biotechne kt)Serum - 1200 kg. (Biotechne kt)<</td> <td>codetypevolume(pre-analysis)(pre-analysis)(pre-analysis)rangesrangesredCBBBloodSST, EDTA or500uLSouldSouldSouldNorrequestNorrequestorurineStreumSouldSerum - Allow samples to dot for 30 minutes at 1000 x g, store samples at 5-20°C. Avoid (genum)Werfen D52 (BloodSerum : 1729-3238 (Bloodng/mLOn requestCORNBloodSST, EDTA (genum)SouldSerum - Allow samples to dot for 30 minutes at 1000 x g, store samples at 5-20°C. Avoid repeated freeze-thaw cycles.Werfen D52 (Blootchne kit)Serum : 1729-3238 (Blootchne kit)ng/mLOn requestCORNBloodSST, EDTA (genum)SouldSerum - Allow samples to clot for 20 minutes at 1000 x g.Store samples at 5-20°C. Avoid repeated freeze-thaw cycles.Werfen D52 (Blootchne kit)Serum: 588-3058pg/mLOn requestCORNBloodSST, or plasma)SouldSerum - Allow samples to clot for 2 hours at room temperature centrifuge for 15 minutes at 1000 x g.7 days at 2-8°C st month -80°CWerfen D52 (Nowus kit)- pg/mLpg/mLOn requestCOTSStror (genum)SouldSerum - Allow samples to clot for 2 hours at room temperature centrifuge for 15 minutes at 1000 x g (Nowus kit)Werfen D52 (Nowus kit)- ng/mLng/mLOn requestCOTSBloodSST or plasma)SouldSerum - Allow samples to clot for 2 hours at room temperature centrifuge for 15 minu</td>	codetypevolume(pre-analysis)CBBBloodSST, EDTA500uL(serumplasma)ororurineminutesplasma)or urineminutes at room temperature centrifugeorreparin500uL(serumEDTA plasma,plasma)plasma orserum - Allow samples to clot for 30orheparinfor 15 minutes at 1000 x g. store samples atplasma)plasma orserum - Allow samples to clot for 30(serumplasma orserum - Allow samples to clot for 30(serumplasma orfor 15 minutes at 1000 x g.plasma)PlasmaPlasma - Plasma - Plasma - Centrifuge for 15 minutes at 1000 x g.CTRFBloodSST, urine or(serum),salivasalivaorplasma)salivaTCPBloodSST, eDTASUQSST, errorSOULCOTSBloodSST, urine orsalivasalivaTCPBloodSST, eDTAplasma)plasmaplasma)plasmaplasma)plasmacrttpSloodCTXBloodSST, EDTA(serum)plasmaplasma)plasmaplasma)centrifuge for 15 minutes at 1000xxserum - Allow samples to clot for 2 hours at room temperature centrifuge for 15 minutes at 1000 x g.CTRFBloodSST, EDTASUDSerum - Allow samples to clot for 2 hours at room temperature centr	code type volume (pre-analysis) (pre-analysis) CBB Blood SST, EDTA plasma) or urine SST, EDTA plasma) or urine SOUL Soul Serum - Allow samples to clot for 30 minutes at room temperature centrifuge for 15 minutes at 1000 x g. store samples at s-20°C. Store samples at s-20°C. Avoid repeated freeze-thaw cycles. CORN Blood SST, EDTA plasma) SST, EDTA plasma or or plasma) Soul Serum - Allow samples to clot for 30 minutes at room temperature centrifuge for 15 minutes at 1000 x g. Store samples at s-20°C. Avoid repeated freeze-thaw cycles. CORN Blood SST, EDTA plasma Soul Serum - Allow samples to clot for 30 minutes at 1000 x g. Store samples at s-20°C. Avoid repeated freeze-thaw cycles. CTRF Blood SST or plasma) Soul Serum - Allow samples to clot for 2 hours at room temperature centrifuge for 15 minutes at 1000 x g. Avoid repeated freeze-thaw Avoid repeated freeze-thaw Avoid repeated freeze-thaw COTS Blood SST, urine or saliva Soul Serum - Allow samples to clot for 2 hours at room temperature centrifuge for 15 minutes at 1000 x g. 30 days at -80°C. Avoid multiple freeze thaw cycles. TCP Blood SST or (serum) Soul Serum - Allow samples to clot for 2 hours at room temperature coretrifu	codetypevolume(pre-analysis)(pre-analysis)Werfen DS2CB8BloodSST, EDTA plasma or or urine500uLSouWerfen DS2(Quidell kit)ADPSBloodSST serum, repartin500uLSerum - 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.Werfen DS2 (Biotechne kit)CORNBloodSST, EDTA plasma or or neparinSouLSerum - 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.Werfen DS2 (Biotechne kit)CORNBloodSST, EDTA plasma or or heparin or plasmaSouLSerum - Allow samples to clot for 2 hours at room temperature centrifuge for 15 minutes at 1000 x g.T days at 2-8°C clot of 2 hours at room temperature centrifuge for 15 minutes at 1000 x g.Werfen DS2 (Riotechne kit)COTS BloodSST, urine or plasma)SouLSerum - Allow samples to clot for 2 hours at room temperature centrifuge for 15 minutes at 1000 x g.Avoid repeated freeze-thaw cyclesWerfen DS2 (Novus kit)TCPBloodSST, EDTA plasma or plasma)SouLSerum - Allow samples to clot for 2 hours at room temperature centrifuge for 15 minutes at 1000 x g.30 days at -80°C. Avoid multiple freeze thaw cycles.Siemens immuteTCPBloodSST, EDTA plasma or plasma or plasmaSouLSerum - Allow samples to clot for 2 hours at<	codetypevolume(pre-analysis)(pre-analysis)(pre-analysis)rangesCBBBloodSST, EDTA or or or plasmal or urineSOULSouldSouldSouldSouldWerfen DS2 (Quidell kt)ADPSBloodSST serum, or heparin or or heparin or heparin or or heparin or or heparin or or heparin or or heparin or or heparin or or heparin or or heparin or or heparin or or heparin or or heparin or or heparin or heparin or or heparin or or heparin or or heparin or or heparin or heparin or or heparin or or heparin or or plasmaSould bould struct at 1000 xg. Plasma - Centrifuge for 15 minutes at 10	codetypevolume(pre-analysis)(pre-analysis)(pre-analysis)rangesCBBBloodSST, EDTA (grum plasma) or urine plasma) or urineSSOULSerum - Allow samples to clot for 30 minutes at 1000 kg. store samples at 5-20°C. Avoid (grum plasma) or urine plasma)Werfen DS2 (Biotechne (Biotechne kt)Serum - Allow samples to clot for 30 minutes at 1000 kg. store samples at 5-20°C. Avoid repeated freeze-thaw cycles.Werfen DS2 (Biotechne kt)Serum - 129-3238 (Biotechne kt)Serum - 129-3238 (Biotechne kt)Serum - 1200 kg. store samples at - 20°C.Werfen DS2 (Biotechne kt)Serum - 120-3338 (Biotechne kt)Serum - 1200 kg. store samples at - 20°C.Werfen DS2 (Biotechne kt)Serum - 120-3338 (Biotechne kt)Serum - 1200 kg. store samples at - 20°C.Werfen DS2 (Biotechne kt)Serum - 1200 kg. (Biotechne kt)Werfen DS2 (Biotechne kt)Serum - 1200 kg. (Biotechne kt)Serum - 1200 kg. (Biotechne kt)Werfen DS2 (CTRFSerum - 1200 kg. (Biotechne kt)Serum - 1200 kg. (Biotechne kt)<	codetypevolume(pre-analysis)(pre-analysis)(pre-analysis)rangesrangesredCBBBloodSST, EDTA or500uLSouldSouldSouldNorrequestNorrequestorurineStreumSouldSerum - Allow samples to dot for 30 minutes at 1000 x g, store samples at 5-20°C. Avoid (genum)Werfen D52 (BloodSerum : 1729-3238 (Bloodng/mLOn requestCORNBloodSST, EDTA (genum)SouldSerum - Allow samples to dot for 30 minutes at 1000 x g, store samples at 5-20°C. Avoid repeated freeze-thaw cycles.Werfen D52 (Blootchne kit)Serum : 1729-3238 (Blootchne kit)ng/mLOn requestCORNBloodSST, EDTA (genum)SouldSerum - Allow samples to clot for 20 minutes at 1000 x g.Store samples at 5-20°C. Avoid repeated freeze-thaw cycles.Werfen D52 (Blootchne kit)Serum: 588-3058pg/mLOn requestCORNBloodSST, or plasma)SouldSerum - Allow samples to clot for 2 hours at room temperature centrifuge for 15 minutes at 1000 x g.7 days at 2-8°C st month -80°CWerfen D52 (Nowus kit)- pg/mLpg/mLOn requestCOTSStror (genum)SouldSerum - Allow samples to clot for 2 hours at room temperature centrifuge for 15 minutes at 1000 x g (Nowus kit)Werfen D52 (Nowus kit)- ng/mLng/mLOn requestCOTSBloodSST or plasma)SouldSerum - Allow samples to clot for 2 hours at room temperature centrifuge for 15 minu

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		SST or EDTA	500uL	Allow samples to clot for 30 minutes at	Stable for 7 days at 2-8°C and 6	Werfen DS2	Women: 0.37 –	ug/mL	On request	N/A
		(serum	plasma		room temperature, centrifuge for 15	months at \leq -20°C. Do not use	(IBL	2.71			,
		or			minutes at 1000 x g.	grossly hemolytic, icteric or	International	Men: 0.73 – 3.81			
Dickkopf related protein 1	DKK1	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: 2343-4999	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: 327-1015		·	
		or	heparin		for 15 minutes at 1000 x g.		·	Heparin: 306-1035			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection.						
Endoglin/CD105	EDOG	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: 4030-6207	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: 3786-6004			
		or	heparin		for 15 minutes at 1000 x g.			Heparin:			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000			3601-5308			
Endothelin-1	END1	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: 0.92-1.58	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: 0.9-1.4			
		or	heparin		for 15 minutes at 1000 x g. store samples at			Heparin: 0.78-1.48			
		plasma)	plasma		≤ -20 °C. Avoid repeated freeze-thaw						
					cycles.						
Eotaxin/CCL11	E011	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Werfen DS2	Serum: 50-642	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	(Biotechne	EDTA: 32-272			
		or	citrate		for 15 minutes at 1000 x g.		kit)	Citrate: 47-399			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000		· ·				
					x g within 30 minutes of collection.						
Eotaxin-3/CCL26	EO3	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: 4.75-61.6	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: 3.7548.5			
		or	heparin		for 15 minutes at 1000 x g.		· ·	Heparin: 38.9-222			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection.						
Epidermal growth factor	EGF	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Randox	-	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Investigtor				
		or	heparin		for 15 minutes at 1000 x g.		, , , , , , , , , , , , , , , , , , ,				
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection.						
Epithelial neutrophil activating peptide 78	EN78	Blood	SST, platelet	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: 469-4713	pg/mL	On request	N/A
(CXCL5/ENA-78)		(serum	poor EDTA		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: 13.8-97.8	10,	·	ŕ
		or	plasma or		for 15 minutes at 1000 x g.	·	·	Heparin: 35.8-439			
		plasma)	platelet poor		Plasma - Centrifuge for 15 minutes at 1000						
			heparin		x g within 30 minutes of collection.						
E-Selectin/CD62E	SELE	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum:	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	6051-77637	_ 0/		
		or	heparin		for 15 minutes at 1000 x g.			EDTA:			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000			11298-49085			
					x g within 30 minutes of collection.			Heparin:			
								9787-48946			

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:	pg/mL	On request	N/A
								18.9-148.5 11 – 20 days:			
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	Sample	Sample tube	Minimum	Processing requirements	Storage requirements	Method	Reference	Units	Frequency	Guide TAT
	code	type		volume	(pre-analysis)	(pre-analysis)		ranges			
Fibronectin	FNCT	Blood	Blood: SST,	500µl	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Werfen DS2	Serum: 0.083-0.539	ng/mL	On request	N/A
		(serum	EDTA plasma,		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	(R&D Systems	EDTA: 0.116-0.601			
		or	citrated		for 15 minutes at 1000 x g.		kit)	Heparin:			
		plasma)	plasma or		Plasma - Centrifuge for 15 minutes at 1000			0.048-0.527			
		or	heparin		x g within 30 minutes of collection.			Citrate:			
Follistatin-related gene protein	FLRG	Blood	Blood: SST,	500µL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Werfen DS2	Serum: 3142-8554	pg/mL	On request	N/A
		(serum	EDTA plasma		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	(R&D Systems	EDTA plasma: 3329-			
		or	Urine: sterile		for 15 minutes at 1000 x g.		kit)	8808			
		plasma)	universal		Plasma - Centrifuge for 15 minutes at 1000			Heparin plasma:			
		Urine			x g within 30 minutes of collection.			3214-8953			
Galectin-3	GAL3	Blood	SST, EDTA	500µL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: 3078-	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	12,465			
		or	heparin		for 15 minutes at 1000 x g.			EDTA Plasma: 3185-			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000			8201			
					x g within 30 minutes of collection.			Heparin plasma:			
Gastric Inhibitory Polypeptide (GIP)	GIP	Blood	SST, EDTA	500µL	Serum: Allow samples to clot for 2 hours at	2°-8°C for up to 7 days	Werfen DS2	-	pg/mL	On request	N/A
		(serum	plasma or		room temperature or overnight at 4°C	–20°C or below for longer	(Novus kit)				
		or	heparin		before centrifugation for 15 min at	periods					
		plasma)	plasma		1000×g at 2~8°C. Blood collection tubes						
					should be non-endotoxin.						
Pro-gastrin releasing peptide	GRP	Blood	SST, EDTA	500µL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: 17.9-41.0	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA Plasma:			
		or	heparin		for 15 minutes at 1000 x g.			16.2-40.2			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000			Heparin plasma:			
		• •			x g within 30 minutes of collection.			16.3-40.2			
Ghrelin	GHRE	Blood	SST, EDTA	500µL	no more than 10 IU heparin per mL of		Werfen DS2		pg/mL	On request	N/A
		(serum	plasma or		blood		(Novus kit)				
		or	heparin								
		plasma)	plasma								
Ghrelin (acylated)	GHRA	Blood	EDTA plasma	500µL	Serum: Allow samples to clot for 2 hours at	2°-8°C for up to 7 days	Werfen DS2	-	pg/mL	On request	N/A
		(plasma)	or heparin		room temperature or overnight at 4°C	–20°C or below for longer	(IBL				
			plasma		before centrifugation for 15 min at	periods	International				
					1000×g at 2~8°C. Blood collection tubes		kit)				
					should be non-endotoxin.						
Glucagon	GLUG	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Werfen DS2	Serum: ND-224	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	(Biotechne	EDTA: ND-226			
		or	heparin		for 15 minutes at 1000 x g.		kit)	Heparin: ND-221			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection.						

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

Test Description	Test	Sample	Sample tube	Minimum	Processing requirements	Storage requirements	Method	Reference	Units	Frequency	Guide TAT
	code	type		volume	(pre-analysis)	(pre-analysis)		ranges			
Glycerol	GLYL	Blood	SST or		-	-	-	-	umol/L	On request	N/A
		(serum	EDTA plasma								
		or									
		plasma)									
Glycogen phosphorylase BB/GPBB	GPIB	Blood	SST or citrate	500uL	Serum - Allow samples to clot for 2 hours at	7 days at 2-8°C	Werfen DS2	-	pg/mL	On request	N/A
		(serum	plasma		room temperature, centrifuge for 15	≤1 month -20°C	(Novus kit)				
		or			minutes at 1000 x g.	≤3 months -80°C					
		plasma)			Plasma - Centrifuge for 15 minutes at 1000	Avoid repeated freeze-thaw					
					x g within 30 minutes of collection.	cvcles					
Blycolytic pyruvate kinase isoenzyme type M2 dimer	M2PK	Faeces	Sterile	Walnut	-	-	Werfen DS2	-	U/mL	On request	N/A
(М2РК)			universal	sized			(kit)				
			stool	formed			, í				
			universal	stool							
Granulocyte colony stimulating factor	GCSF	Blood	SST, EDTA	100uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: ND-4.98	pg/mL	On request	N/A
	000.	(serum	plasma or	20002	minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: ND-4.60	P6/	Chrequest	,
		or	heparin		for 15 minutes at 1000 x g.			Heparin: ND-1.90			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
		μασιτιά	piasina		x g within 30 minutes of collection.						
Growth differentiation factor 15	GF15	DII	SST. EDTA	100uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Ductoin	Serum: 295-854		On request	N/A
Growth differentiation factor 15	GF15	Blood	/	TOOUL			Protein		pg/mL	On request	N/A
		(serum	plasma,		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: 310-906			
		or	heparin		for 15 minutes at 1000 x g. store samples at			Heparin: 345-1024			
		plasma)	plasma or		≤ -20 °C.						
		or urine	urine		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection.						
Growth-regulated alpha protein (CXCL1/GRO alpha)	GROA	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	24 hours at 4°C	Werfen DS2	-	μg	On request	N/A
		(serum	plasma,		minutes at room temperature, centrifuge	-20°C to -80°C for longer	(Novus kit)		Eq/mL		
		or	heparin		for 15 minutes at 1000 x g.	periods					
		plasma)	plasma or		Plasma - Centrifuge for 15 minutes at 1000						
			citrate		x g within 30 minutes of collection.						
Hemopexin	HEPX	Blood	SST,	500uL	Serum - Allow samples to clot for 30	-20°C or below for up to 3	Werfen DS2	-	pg/mL	On request	N/A
		(serum	citrate		minutes at room temperature, centrifuge	months. Avoid repeated freeze-	(Novus kit)		(serum		
		or	plasma or		for 15 minutes at 1000 x g.	thaw cycles			&		
		plasma)	urine		Plasma - Centrifuge for 15 minutes at 1000				plasma)		
					x g within 30 minutes of collection.				ng/mL		
Hepatocyte growth factor (HGF)	HEGF	Blood	SST,	500uL	Serum - Allow samples to clot for 30	-20°C or below for up to 3	Protein	Serum: 944-1668	pg/mL	On request	N/A
		(serum	EDTA plasma		minutes at room temperature, centrifuge	months. Avoid repeated freeze-	Simple Ella	EDTA: 481-1004			
		or	or heparin		for 15 minutes at 1000 x g.	thaw cycles		Heparin: 377-885			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
		,			x g within 30 minutes of collection						

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	SST, EDTA	500µL	Serum - Allow samples to clot for 30	-20°C or below for up to 3	Protein	Serum:	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	months. Avoid repeated freeze-	Simple Ella	1554-34,763			
		or	heparin		for 15 minutes at 1000 x g.	thaw cycles		EDTA Plasma: 1775-			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000			44,577			
					x g within 30 minutes of collection			Heparin Plasma:			
Insulin - clinical trials	TINS	Blood	SST or	300uL	Serum - Allow samples to clot for 30	Store at -80°C. Avoid repeated	Siemens	<u>1391-31.968</u> 4.4 – 26.0	ull /ml	On request	N/A
	TINS	ыооц (serum	heparin	SUUUL	minutes at room temperature, centrifuge	freeze-thaw cycles	ImmuLite	4.4 - 20.0	uio/iiiL	Onrequest	N/A
		or	plasma		for 15 minutes at 1000 x g.		ininalite				
		plasma)	plasina		Plasma - Centrifuge for 15 minutes at 1000						
		plasmaj			x g within 30 minutes of collection						
Insulin-like growth factor binding protein 1	IGBP	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	-20°C or below. Avoid repeated	Protein	Serum:	pg/mL	On request	N/A
(IGFBP-1)		(serum	plasma or		minutes at room temperature, centrifuge	freeze-thaw cycles	Simple Ella	1153-33875			
		or	heparin		for 15 minutes at 1000 x g.			EDTA:			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000			971-36429			
					x g within 30 minutes of collection			Heparin:			
								943-31133			
IntercelluLar Adhesion MolecuLe 1	ICAM	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Serum/plasma: -20°C or below.	Protein	Serum:	pg/mL	On request	N/A
		(serum	plasma,		minutes at room temperature, centrifuge	Avoid repeated freeze-thaw	Simple Ella	169962-538956			
		or	heparin		for 15 minutes at 1000 x g.	cycles		EDTA:			
		plasma)	plasma or		Plasma - Centrifuge for 15 minutes at 1000	Cerebrospinal Fluid: Freeze		160056-473867			
		or CSF	universal		x g within 30 minutes of collection	sample within one hour of		Heparin:			
			container			collection to avoid aggregation.		186416-368415			
						Store samples at ≤ -70 °C.		CSF: 2382-9921			
Interferon-alpha	IFNA	Blood	SST, EDTA	500µL	Serum - Allow samples to clot for 30	-20°C or below. Avoid repeated	Protein	Serum: ND-4.68	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	freeze-thaw cycles	Simple Ella	EDTA Plasma: ND-			
		or	heparin		for 15 minutes at 1000 x g.			5.54			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000			Heparin Plasma: ND-			
					x g within 30 minutes of collection			6.04		-	
Interferon-beta	IFNB	Blood	SST, EDTA	500µL	Serum - Allow samples to clot for 30	-20°C or below. Avoid repeated	Protein	-	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	freeze-thaw cycles	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.						
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
Interferon-gamma	IFNY	Blood	EDTA	500uL	x g within 30 minutes of collection Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	423.52 - 1843.81	pg/mL	On request	N/A
interieron-gannia	IFINI	(plasma),	plasma,	JUUL	minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	423.32 - 1843.81	pg/mr	Onrequest	N/A
		CSF,	universal		for 15 minutes at 1000 x g.		Simple Lila				
		occuLar	container,		Plasma - Centrifuge for 15 minutes at 1000						
		fluid or	svringe or		x g within 30 minutes of collection						
Interleukin 1 alpha	IN1A	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	ND	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.						
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection						

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	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	0.00 - 0.66	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.						
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection						
Interleukin 1 beta	IL1B	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	0.00 - 0.66	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.						
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection						
Interleukin 1 beta H.Sens.	I1BH	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	-	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.						
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection						
Interleukin 1 receptor antagonist	I2RA	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: 225-682	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: 138-348			
		or	heparin		for 15 minutes at 1000 x g.			Heparin: 137-682			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection						
Interleukin 10	IN10	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	0.96 - 3.20	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.						
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection						
Interleukin 11	IL11	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: ND-362	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: ND-329			
		or	heparin		for 15 minutes at 1000 x g.			Heparin: ND-324			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection						
Interleukin 12	IN12	Blood	SST or EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: ND-1.96	pg/mL	On request	N/A
		(serum	plasma		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: 1.28-1.76			
		or			for 15 minutes at 1000 x g.						
		plasma)			Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection						
interleukin 12 P40	IP40	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	-	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.						
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection						
Interleukin 12 P70	IP70	Blood	SST or EDTA	500µL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: ND-1.96	pg/mL	On request	N/A
		(serum	plasma		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: 1.28-1.76	P8/ m2		
		or	piaoma		for 15 minutes at 1000 x g.						
		plasma)			Plasma - Centrifuge for 15 minutes at 1000						
		plasma)			x g within 30 minutes of collection						

Test Description	Test		Sample tube		Processing requirements	Storage requirements	Method	Reference	Units	Frequency	Guide TAT
	code	type		volume	(pre-analysis)	(pre-analysis)	D. J. S.	ranges		• • •	21/2
Interleukin 13	IL13	Blood	SST, EDTA	500µL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: ND-80.1	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA Plasma:			
		or	heparin		for 15 minutes at 1000 x g.			ND-83.3			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000			Heparin Plasma: ND			
		Disad		F00I	x g within 30 minutes of collection		Ductoin	68.4		0	N1/A
Interleukin 15	IL15	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	0.0 - 5.4	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.						
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
			COT EDTA	500 1	x g within 30 minutes of collection					<u> </u>	21/2
interleukin 16	IL16	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	-	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.						
Interleukin 17	IN17	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	ND	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.						
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection						
Interleukin 1-Receptor 1	I1R1	Blood	od SST, EDTA 500	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum:	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	5397-36527			
		or	heparin		for 15 minutes at 1000 x g.			EDTA:			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000			5201-36891			
					x g within 30 minutes of collection			Heparin:			
								4883-37865			
Interleukin 1-Receptor 2	I1R2	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	-	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.						
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection						
Interleukin 2	IN2	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	-	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.						
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
		F			x g within 30 minutes of collection						
Interleukin 22	IL22	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: ND-30.7	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: ND-20.3			
		or	heparin		for 15 minutes at 1000 x g.			Heparin: ND-20.3			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
		,			x g within 30 minutes of collection						

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	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	-	pg/mL	On request	N/A
	11123	(serum	plasma or	JOUGE	minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella		P6/111-	onrequest	,
		or	heparin		for 15 minutes at 1000 x g.		ompie zna				
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection						
Interleukin 23	IL23	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	-	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella		1 0.		, i
		or	heparin		for 15 minutes at 1000 x g.	. ,	·				
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection						
Interleukin 3	IL3	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	-	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.						
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection						
Interleukin 33	IL33	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	ND	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.						
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection						
Interleukin 4	IN4	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	ND	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.						
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
Interleukin 5	IL5	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	0.087 – 0.657	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.						
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
	INIC		COT EDTA	F00 1	x g within 30 minutes of collection			0.00.0.00		<u> </u>	21/2
Interleukin 6	IN6	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	0.00 - 3.26	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.						
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
Interleukin 6 (Siemens)	SIL6	Blood	SST	250uL	x g within 30 minutes of collection Allow samples to clot for 30 minutes at	1 day at 2–8°C or	Siemens	ND - 5.9	pg/mL	On request	N/A
	3120			25002		6 months at –20°C.		- 5.9	-pg/mL	Onrequest	N/A
		(serum)			room temperature, centrifuge for 15	6 months at -20 C.	ImmuLite				
					minutes at 1000 x g.						

Test Description	Test	Sample	Sample tube	Minimum	Processing requirements	Storage requirements	Method	Reference	Units	Frequency	Guide TAT
	code	type		volume	(pre-analysis)	(pre-analysis)		ranges			
Interleukin 6 high sensitivity	IN6H	Blood (serum or	SST, EDTA plasma or heparin	500µL	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.		Serum: 0.495-3.92 EDTA plasma: 0.351- 3.48	pg/mL	On request	N/A
		plasma) or urine	plasma		Plasma - Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection			Heparin plasma: 0.414-3.97 Urine: ND-3.48			
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	Sample	Sample tube		Processing requirements	Storage requirements	Method	Reference	Units	Frequency	Guide TAT
	code	type		volume	(pre-analysis)	(pre-analysis)		ranges			
Leptin	LEPT	Blood	SST, EDTA	500µL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum:	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	8914-67,394			
		or	heparin		for 15 minutes at 1000 x g.			EDTA Plasma: 7897-			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000			70,208			
					x g within 30 minutes of collection.			Heparin Plasma:			
Leptin receptor	LEPR	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Frozen (-80°C) - stable for 18	Protein	-	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	months. Samples can be freeze	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.	thawed up to 5 times.					
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection						
Lipoprotein a	LPA	Blood	SST or citrate	500µL	Serum - Allow samples to clot , centrifuge	Store samples at ≤-20°C -	Werfen DS2	60-180	µg/ml	On request	N/A
		(serum	plasma		for 10 minutes at 3000 x g	strable for three months. Avoid	(Novus kit)				
		or			Plasma - Centrifuge for 10 minutes at 3000	repeated freeze-thaw cycles.					
		plasma)			хg						
	0511										
L-Selectin/CD62L	SELL	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Werfen DS2	-	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	(Biotechne				
		or	heparin		for 15 minutes at 1000 x g.		kit)				
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection					-	
Macrophage Inflammatory protein 1a	MIPA	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	-	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.						
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection						
Macrophage Inflammatory protein 1b	MIPB	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: 295-854	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: 310-906			
		or	heparin		for 15 minutes at 1000 x g.			Heparin: 345-1024			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000			Urine: 623-21960			
		or urine			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						
Macrophage inflammatory protein 2	MIP2	Blood	SST, EDTA	500uL	to remove particulate matter. Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: 39.9-149	pg/mL	On request	N/A
Macrophage inhammatory protein 2	IVIIP2		plasma or	SUUUL	minutes at room temperature, centrifuge	store samples at \leq -20°C. Avoid repeated freeze-thaw cycles.	Simple Ella	EDTA: 11.4-58.4	-pg/mL	On request	N/A
		(serum			for 15 minutes at 1000 x g.		Simple Ella	Heparin: 9.4-57.9			
		or plasma)	heparin		Plasma - Centrifuge for 15 minutes at 1000 x g.			nepariii. 9.4-57.9			
		plasifia)	plasma		x g within 30 minutes of collection						
					x g within 30 minutes of collection						

Test Description	Test	Sample	Sample tube	Minimum	Processing requirements	Storage requirements	Method	Reference	Units	Frequency	Guide TAT
	code	type		volume	(pre-analysis)	(pre-analysis)		ranges			
Macrophage migration inhibitory factor	MIF	Blood	SST, platelet	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum:	pg/mL	On request	N/A
		(serum	poor EDTA		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	16536-34567			
		or	plasma or		for 15 minutes at 1000 x g.			EDTA:			
		plasma)	platelet poor		Plasma - Centrifuge for 15 minutes at 1000			19580-41305			
			heparin		x g within 30 minutes of collection			Heparin:			
			plasma					9379-29723			
Matrix metalloproteinase 7	MMP7	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum:	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	1094-6619			
		or	heparin		for 15 minutes at 1000 x g.			EDTA:			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000			1403-5119			
					x g within 30 minutes of collection			Heparin:			
Matrix metalloproteinase 9	MMP9	Blood	SST, platelet	500µL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum:	pg/mL	On request	N/A
		(serum	poor EDTA		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	167,760-469,934			
		or	plasma or		for 15 minutes at 1000 x g.			PP EDTA Plasma:			
		plasma)	, platelet poor		Plasma - Centrifuge for 15 minutes at 1000			34,588-136,743			
		i í	heparin		x g within 30 minutes of collection			PP heparin Plasma:			
			plasma					21,154-67,670			
Matrix metalloproteinase-1	MMP1	Blood	SST or	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Werfen DS2	Serum:	ng/mL	On request	N/A
		(serum	heparin		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	(R&D Systems	0.912-9.340			
		or	plasma		for 15 minutes at 1000 x g.		kit)	Heparin:			
		plasma)	·		Plasma - Centrifuge for 15 minutes at 1000		ŕ	0.179-1.000			
Matrix metalloproteinase-2	MMP2	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Werfen DS2	Serum: 139-356	ng/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	(R&D Systems	EDTA: 141-278	0,		,
		or	heparin		for 15 minutes at 1000 x g.		kit)	Heparin: 155-342			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000		,				
		piasina,	plasma		x g within 30 minutes of collection						
Matrix metalloproteinase-3	MMP3	Blood	SST or	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Werfen DS2	Serum: 2.10-64.4	ng/mL	On request	N/A
		(serum	heparin		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	(R&D Systems		0,		,
		or	plasma		for 15 minutes at 1000 x g.		kit)				
		plasma)	prasina		Plasma - Centrifuge for 15 minutes at 1000		,				
		pidoina)			x g within 30 minutes of collection						
					x g within 50 minutes of concertoir						
Melatonin	MELA	Blood	SST, EDTA	500µL	Do not use grossly hemolytic, icteric or	Stable for 24h at 2-8°C. 3	Werfen DS2	03:00 AM: 18.5-180	pg/mL	On request	N/A
		(serum	plasma or		grossly lipemic specimens. Samples	months at $\leq 20^{\circ}$ C and 12	(IBL	08:00 AM: 3.8-80.4			
		or	heparin		appearing turbid should be centrifuged	—	International				
		plasma)	plasma		before testing.	months <u><</u> 70°C	kit)				

Test Description	Test	Sample	Sample tube		Processing requirements	Storage requirements	Method	Reference	Units	Frequency	Guide TAT
	code	type		volume	(pre-analysis)	(pre-analysis)		ranges			
Monocyte chemotactic protein 3	MCP3	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: ND-5.97	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: ND-0.77			
		or	heparin		for 15 minutes at 1000 x g.			Heparin: ND-3.12			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection						
Monocyte chemotactic protein-1	MCP1	Blood	SST, EDTA	500µL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: 163-485	pg/mL	On request	N/A
		(serum	plasma,		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA plasma:			
		or	heparin		for 15 minutes at 1000 x g.			106-429			
		plasma)	plasma urine		Plasma - Centrifuge for 15 minutes at 1000			Heparin plasma:			
			or CSF		x g within 30 minutes of collection			157-459			
Monokine induced by gamma interferon (CXCL9/MIG)	MIGI	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: 144-464	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: 164-564			
		or	heparin		for 15 minutes at 1000 x g.			Heparin: 236-700			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
		·			x g within 30 minutes of collection						
Myelin basic protein	MBP	Blood	SST or	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Werfen DS2	-	pg/mL	On request	N/A
		(serum	EDTA plasma		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	(R&D Systems				
		or			for 15 minutes at 1000 x g.		kit)				
		plasma)			Plasma - Centrifuge for 15 minutes at 1000		ŕ				
		·			x g within 30 minutes of collection						
Myostatin	MYO	Blood	SST, EDTA	500µL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Werfen DS2	Serum:	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	(R&D Systems	1264-8588			
		or	heparin		for 15 minutes at 1000 x g.		kit)	EDTA:1220-7300			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000		ŕ	Heparin:			
					x g within 30 minutes of collection			1200-7640			
N-acetyl glucosaminidase	NAG	Blood	Blood: SST,	500µL	Serum: Allow samples to clot for 2 hours at	2°-8°C for up to 7 days	Werfen DS2	-	ng/mL	On request	N/A
	-	(serum	EDTA plasma,		room temperature or overnight at 4°C	–20°C or below for longer	(Novus kit)		0,		, ,
		or	heparin		before centrifugation for 15 min at	periods	(,				
		plasma)	plasma		1000×g at 2~8°C. Blood collection tubes	pendus					
		or urine			should be non-endotoxin.						
		or arme	container		Plasma: Centrifuge samples for 15 min at						
			container		$1000 \times \text{g}$ at 2~8°C within 30 min of						
					collection. Hemolysed samples are not						
					suitable						
Neopterin	NEOP	Blood	SST,	-	-	-	Manual	-	pg/mL	On request	N/A
		(serum	EDTA plasma								
		or	or urine.								
		plasma)									
		or urine									

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	SST or EDTA	500ul	Venous	(pre-analysis)	Protein	ranges	ng/ml	On request	N/A
	INFL	(serum	plasma	50001	Primary sample collection tube should be		Simple Ella		pg/m	Unrequest	N/A
		or	piasilia		centrifuged within 1 hour from venepuncture.		Simple Ella				
		plasma)									
Neuropeptide Y	NPY	Blood	SST or	-			Werfen DS2		ng/ml	On request	N/A
Neuropeptide f	INPT	(serum	EDTA plasma	-	-	-	(R&D Systems	-	ng/mL	Unrequest	N/A
			EDTA plasifia				kit)				
		or plasma)					KILJ				
Nitric oxide	NO	Blood	Blood: SST,	500µL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Werfen DS2	Serum: 13-97	umol/I	On request	N/A
Nitre Oxide		(serum	EDTA plasma	300με	minutes at room temperature, centrifuge		(R&D Systems	EDTA plasma:		Onrequest	
		or	or heparin		for 15 minutes at 1000 x g.	repeated neeze thaw cycles.	kit)	10-92			
		plasma),	plasma		Plasma - Centrifuge for 15 minutes at 1000		-	Heparin plasma: 10-			
		urine or	Urine/CSF:		x g within 30 minutes of collection			90			
		CSF	Sterile					Citrate plasma:			
		0.51	container					11-81			
			container					Urine: 369-2684			
Non-esterified fatty acid	NEFA				Send-away test, see: http://www.viapath.co.uk	/our-tests/non-esterified-fatty-acid	<u>s-nefa-0</u>	011110: 303 2001		On request	N/A
Occludin	OCLN	Blood	SST or	500uL	Serum - Allow samples to clot for 2 hours at	7 days at 2-8°C	Werfen DS2	-	ng/mL	On request	N/A
		(serum	EDTA plasma		room temperature, centrifuge for 15	≤1 month -20°C	(Novus kit)				
		or			minutes at 1000 x g.	≤3 months -80°C					
		plasma)			Plasma - Centrifuge for 15 minutes at 1000	Avoid repeated freeze-thaw					
		l' í			x g within 30 minutes of collection	cycles					
Osteocalcin	OCN	Blood	SST or	500uL	Serum - Allow samples to clot for 30	Osteocalcin is unstable. Keep	Werfen DS2	-	ng/mL	On request	N/A
		(serum	EDTA plasma		minutes at room temperature, centrifuge	blood at 2-8°C immediately	(QUIDEL kit)				
		or			for 15 minutes at 1000 x g.	after collection and during					
		plasma)			Plasma - Centrifuge for 15 minutes at 1000	, i i i i i i i i i i i i i i i i i i i					
		ľ			x g within 30 minutes of collection	processed and frozen at					
					U U U U U U U U U U U U U U U U U U U	≤–20°C within 4 hours of					
						collection. If collection and					
						processing is performed at					
						ambient temperature, serum					
						must be processed and tested					
						or frozen ($\leq -20^{\circ}$ C) within 2					
						hours of collection. Serum					
						should be frozen at $\leq -70^{\circ}$ C for					
						storage > 1 month					

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

Test Description	Test	Sample	Sample tube	Minimum	Processing requirements	Storage requirements	Method	Reference	Units	Frequency	Guide TAT
	code	type		volume	(pre-analysis)	(pre-analysis)		ranges			
Periostin	OSF2	Blood	SST, EDTA	500µL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum:	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	11,944-28,847			
		or	heparin		for 15 minutes at 1000 x g.			EDTA Plasma:			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000			10,675-28,419			
					x g within 30 minutes of collection			Heparin plasma:			
								10,567-28,935			
Placental growth factor	PIGF	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: 295-854	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: 310-906			
		or	heparin		for 15 minutes at 1000 x g.			Heparin: 345-1024			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000			Urine: 623-21960			
		or urine			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.						
Platelet-derived GF BB	PDBB	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	-	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.						
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection						
Podocin	PDCN	Blood	SST or	500uL	Serum - Allow samples to clot for 2 hours at	7 days at 2-8°C	Manual /	-	pg/mL	On request	N/A
		(serum	EDTA plasma		room temperature, centrifuge for 15	≤1 month -20°C	Werfen				
		or			minutes at 1000 x g.	≤3 months -80°C					
		plasma)			Plasma - Centrifuge for 15 minutes at 1000	Avoid repeated freeze-thaw					
					x g within 30 minutes of collection	cycles					
Pregnancy-specific beta-1-glycoprotein 1	PSG1	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Werfen DS2	ND	ng/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	(R&D Systems		0.	·	
		or	heparin		for 15 minutes at 1000 x g.		kit)				
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000		ŕ				
Procollagen I C-Terminal Propeptide	P1CP	Blood	SST, EDTA	500µL	Serum - Allow samples to clot for 2 hours at	7 days at 2-8°C	Werfen DS2	-	pg/mL	On request	N/A
o 1 1		(serum	plasma or		room temperature, centrifuge for 15	≤1 month -20°C	(Novus kit)		1 0.	· ·	
		or	heparin		minutes at 1000 x g.	≤3 months -80°C	, , , ,				
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000	Avoid repeated freeze-thaw					
		piasina)	pidoina		x g within 30 minutes of collection	cycles					
Procollagen type III N-terminal propeptide	P3P	Blood	SST. EDTA	500uL	Serum - Allow samples to clot for 2 hours at	<i>'</i>	Werfen DS2	-	pg/mL	On request	N/A
		(serum	plasma or		room temperature, centrifuge for 15	≤1 month -20°C	(Novus kit)				
		or	heparin		minutes at 1000 x g.	≤3 months -80°C					
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000	Avoid repeated freeze-thaw					
		plasmaj	plasma		x g within 30 minutes of collection	cvcles					
					x g within 30 minutes of conection	cycles					

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)	СҮТХ	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	$\begin{split} & L-2:0.00-2.76\\ & L-4:0.15-1.28\\ & L-6:0.00-24.56\\ & L-10:0.00-0.34\\ & \forall EGF:0.0-153.40\\ & NF-\gamma:0.00-0.11\\ & TNF\alpha:0.46-2.19\\ & L-1\alpha:0.00-0.53\\ & L-1\beta:0.04-1.56\\ & MCP-1:0-280.53\\ & EGF8.77-95.11\\ & L1RA:\\ & 22.76, 178, 01 \end{split}$	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)	СҮНЅ	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	-	Sample tube		. .	Storage requirements	Method	Reference	Units	Frequency	Guide TAT
	code	type		volume	(pre-analysis)	(pre-analysis)		ranges			
Randox Cytokine Array 1 (Normal Sensitivity):	CYA1	Blood	SST or EDTA	500ul	Carry out sample preparation in accordance	Store samples at ≤-20°C. Avoid	Randox	Serum &plasma	pg/mL	On request	N/A
Interleukin-2 (IL-2), Interleukin-4 (IL-4), Interleukin-6		(serum	plasma		with collection tube manufacturer's	repeated freeze-thaw cycles.	Evidence	IL-2: 0.00 - 2.42			
(IL-6), Interleukin-8 (IL-8), Interleukin-10 (IL-10),		or			instructions. Ideally samples should be non- haemolysed and non-lipaemic.		Investigator	0.69 - 2.22			
Vascular Endothelial Growth Factor (VEGF), Interferon		plasma)			naemorysed and non-inpaemic.			IL-4: 0.88 - 2.63			
Gamma (IG), Tumour Necrosis Factor Alpha (TNFa),								0.82 - 2.98			
Interleukin 1 Alpha (IL-1-a), Interleukin 1 Beta (IL-1B),								IL-6: 0.00 - 2.13			
Monocyte Chemotactic Protein-1 (MCP-1), Epidermal								0.00 - 2.21			
Growth Factor (EGF)								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			

Test Description	Test		Sample tube		Processing requirements	Storage requirements	Method	Reference	Units	Frequency	Guide TAT
	code	type		volume	(pre-analysis)	(pre-analysis)		ranges			
Randox Cytokine Array V: Interleukin-3 (IL-3),	CYA5	Blood	SST or EDTA	500ul	Carry out sample preparation in accordance	Store samples at ≤-20°C. Avoid	Randox	Serum & plasma	pg/mL	On request	N/A
Interleukin-7 (IL-7), Interleukin-12 P70 (IL-12 P70),		(serum	plasma		with collection tube manufacturer's	repeated freeze-thaw cycles.	Evidence	IL-3: <9.544			
Interleukin-13 (IL-13), Interleukin-23 (IL-23)		or			instructions. Ideally samples should be non-		Investigator	<8.41			
		plasma)			haemolysed and non-lipaemic.			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			
Rantes	RANT	Blood	SST, platelet	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum:	pg/mL	On request	N/A
		(serum	poor EDTA		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	18678-119117	P8/····-		,
		or	plasma or		for 15 minutes at 1000 x g.		0	EDTA: 203-1899			
		plasma)	platelet poor		Plasma - Centrifuge for 15 minutes at 1000			Heparin: 752-9720			
		plasifiaj	heparin		x g within 30 minutes of collection			nepann. 752-9720			
Receptor for advanced glycation end product (RAGE)	RAGE	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: 538-2096	pg/mL	On request	N/A
	INAGE	(serum	plasma or	JUUL	minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: 818-1777	PB/IIIL	Unrequest	11/7
		`			for 15 minutes at 1000 x g.	repeated freeze-thaw cycles.	Simple Ella	Heparin: 668-1764			
		or	heparin					Heparin: 008-1764			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection						
Regenerating islet-derived-3-alpha (REG3)	REG3	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum:	pg/mL	On request	N/A
	NLO3	(serum	plasma or	JUUL	minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	3136-22856	PB/IIIL	Unrequest	11/7
		`			for 15 minutes at 1000 x g.	repeated freeze-thaw cycles.	Simple Ella	EDTA:			
		or	heparin		, i i i i i i i i i i i i i i i i i i i						
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000			3455-24482			
					x g within 30 minutes of collection.			Heparin:			
Resistin	RESI	Blood	SST serum	500uL	Corum Allow complex to dot for 20	Store samples at ≤-20°C. Avoid	Drotoin	3522-25352	pg/mL	On request	N/A
Resistin	RESI			500µĽ	Serum - Allow samples to clot for 30		Protein	Serum:	pg/mL	On request	
		(serum	EDTA plasma		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	4511-10,534			
		or	Heparin		for 15 minutes at 1000 x g.			EDTA plasma: 4473-			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000			10,822			
					x g within 30 minutes of collection.			Heparin plasma:			
								4733-11,185			

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

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 170H-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 -20°C 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 -20°C 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	Refrigerate sample within 30	Werfen DS2	Guide referece	ug/dL	On request	N/A
					after eating a major meal or within 12	minutes, and freeze at or below	(Salimetrics	ranges available			
					hours after consuming alcohol. Avoid acidic	-20ºC within 4 hours	kit)	from manufacturer,			
					or high sugar foods, to minimise rinse	of collection. (Samples may be		laboratory to			
					mouth thoroughly with water 10 minutes	stored at -20 $^{\circ}$ C for up to 6		establish its own			
					before sample is collected. Collect whole	months.)		range.			
					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.						

Test Description	Test	Sample	Sample tube		Processing requirements	Storage requirements	Method	Reference	Units	Frequency	Guide TAT
Salivary Cotinine	code SCOT	type Saliva	Salivette	volume 500μL	(pre-analysis) 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.	(pre-analysis) Refrigerate sample within 30 minutes, and freeze at or below -20°C 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 -20°C 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 -20°C 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 -20°C 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 -20°C 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 <i>Guide from</i> <i>manufacturer,</i> <i>laboratory to</i> <i>establish its own</i> <i>range.</i>	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 -20°C 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	Sample	Sample tube	Minimum	Processing requirements	Storage requirements	Method	Reference	Units	Frequency	Guide TAT
	code	type		volume	(pre-analysis)	(pre-analysis)		ranges			
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 -20°C 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 -20°C 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 -20°C 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 -20°C 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 SI	SERO	(serum or plasma)	Blood: SST, platelet rich EDTA or heparin plasma Urine: 24h sterile collection		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.	$^{\circ}$ 6h at 2-8°C and 3 months < -	(IBL International kit)	Serum: 30-200 plasma: 1.8-7.5 platelets: 217-861 ng/10 ⁹ platelets urine: ≤200 ug/d	ng/mL	On request	N/A	
--------------	------	-------------------------	--	--	---	---	-------------------------------	---	-------	------------	-----	--

Test Description	Test	Sample	Sample tube	Minimum	Processing requirements	Storage requirements	Method	Reference	Units	Frequency	Guide TAT
	code	type		volume	(pre-analysis)	(pre-analysis)		ranges			
Serpin A6/cortisol binding globulin	CBG	Blood	SST or EDTA	500uL	Serum - Allow samples to clot for 2 hours at	7 days at 2-8°C	Werfen DS2		pg/mL	On request	N/A
		(serum	plasma		room temperature, centrifuge for 15	≤1 month -20°C	(Novus kit)				
		or			minutes at 1000 x g.	≤3 months -80°C					
		plasma)			Plasma - Centrifuge for 15 minutes at 1000	Avoid repeated freeze-thaw					
					x g within 30 minutes of collection.	cycles					
Somatostatin	SMTN	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 2 hours at	8 days at 2-8°C	Werfen DS2		pg/mL	On request	N/A
		(serum	plasma or		room temperature, centrifuge for 15	≤1 month -20°C	(Novus kit)				
		or	heparin		minutes at 1000 x g.	≤3 months -80°C					
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000	Avoid repeated freeze-thaw					
					x g within 30 minutes of collection.	cycles					
ST2 (IL-1 R4)	ST2	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum:	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	5397-36527			
		or	heparin		for 15 minutes at 1000 x g.			EDTA:			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000			5201-36891			
					x g within 30 minutes of collection.			Heparin:			
Stem cell factor	6.05			F00 1				4883-37865		<u> </u>	21/2
Stem cell factor	SCF	Blood	SST, EDTA	500uL	Serum - Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Werfen DS2	Serum (male):	pg/mL	On request	N/A
		(serum	plasma,		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	(R&D Systems	2205-11149			
		or	heparin		for 15 minutes at 1000 x g.	Grossly lipaemic samples	kit)	Serum (female):			
		plasma)	plasma or		Plasma - Centrifuge for 15 minutes at 1000	should not be used.		3877-77273			
	0054		citrate	500 1	x g within 30 minutes of collection.			Values in			
Stromal cell-derived factor 1a (CXCL12/SDF-1 α)	SDF1	Blood	Platelet poor	500uL	Serum: Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	EDTA:	pg/mL	On request	N/A
		(plasma)	EDTA plasma		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	1763-2781			
			or platelet		for 15 minutes at 1000 x g.	Grossly haemolysed samples		Heparin:			
			poor heparin		Plasma - Centrifuge for 15 minutes at 1000	should not be used.		1691-2593			
			plasma		x g within 30 minutes of collection.						

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)	ТМРЗ	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	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 tube	Minimum volume	Processing requirements	Storage requirements	Method	Reference	Units	Frequency	Guide TAT
Thrombopoeitin	code THPO	type Blood	SST, EDTA	500uL	(pre-analysis) Serum: Allow samples to clot for about 30	(pre-analysis) Store samples at ≤-20°C. Avoid	Werfen DS2	ranges Serum: ND-228	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	(R&D Systems	EDTA: ND-196			·
		or	heparin		for 15 minutes at 1000 x g.		kit)	Heparin: ND-168			
		platelet	plasma		Platelet-poor Plasma - Collect plasma on						
		poor			ice. Centrifuge at 2-8 °C for 15 minutes at						
		plasma)			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						
Thrombospondin-1	THP1	Blood	Serum,	500uL	removal. Serum: Allow samples to clot for about 30	Store samples at ≤-20°C. Avoid	Protein	-	pg/mL	On request	N/A
		(serum	platelet-poor	00002	minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella		P6/	onrequest	,//
		or	EDTA plasma		for 15 minutes at 1000 x g.		ompre Lina				
		plasma)			Platelet-poor Plasma - Collect plasma on						
		. ,	poor heparin		ice. Centrifuge at 2-8 °C for 15 minutes at						
			plasma		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.						
Thromboxane	ТВХ	Blood	SST, EDTA	500uL	Serum: Allow samples to clot for about 30	Store samples at ≤-20°C. Avoid	Werfen DS2	Serum: 1.1-11.3	ng/mL	On request	N/A
		(serum	plasma,		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	(R&D Systems	EDTA: ND-10.1	0,	· ·	ŕ
		or	heparin		for 15 minutes at 1000 x g.	Do not use lipemic, grossly	kit)	Heparin: ND-9.26			
		plasma)	plasma or		Plasma: Centrifuge for 15 minutes at 1000 x	hemolyzed, or turbid samples.		Urine: 3.5-72.5			
		or urine	urine		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.						
Tissue inhibitor of metalloproteinases-1	TIMP	Blood	SST, EDTA	500µL	Serum: Allow samples to clot for about 30	Store samples at ≤-20°C. Avoid	Protein	Serum:	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	40509-145619			
		or	heparin		for 15 minutes at 1000 x g.			EDTA plasma:			
		plasma)	plasma		Platelet-poor Plasma - Collect plasma on			36037-168192			
		or CSF			ice. Centrifuge at 2-8 °C for 15 minutes at			Heparin plasma:			
					1000 x g within 30 minutes of collection. An			38827-71776			
					additional centrifugation step of the plasma			CSF:			
					at 10,000 x g for 10 minutes at 2-8 °C is			44071-673106			
					recommended for complete platelet						
					removal.						

Test Description	Test	Sample	Sample tube		Processing requirements (pre-analysis)	Storage requirements (pre-analysis)	Method	Reference	Units	Frequency	Guide TAT
Tissue necrosing factor a	code TNFA	type Blood	SST. EDTA	volume 500μL	(pre-analysis) Serum: Allow samples to clot for about 30	(pre-analysis) Store samples at ≤-20°C. Avoid	Protein	ranges Serum: 4.05-8.34	pg/mL	On request	N/A
Tissue necrosing factor a	INFA		plasma or	500μL	minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA plasma:	pg/mL	On request	N/A
		(serum	•		for 15 minutes at 1000 x g.	repeated freeze-thaw cycles.	Simple Ella	2.45-6.16			
		or	heparin plasma		Platelet-poor Plasma - Collect plasma on			2.45-6.16 Heparin plasma:			
		plasma)	piasma								
		or			ice. Centrifuge at 2-8 °C for 15 minutes at			2.87-7.99			
		broncho			1000 x g within 30 minutes of collection. An						
		alveolar fluid			additional centrifugation step of the plasma at 10,000 x g for 10 minutes at 2-8 °C is						
		Tiula			recommended for complete platelet						
					recommended for complete platelet						
TNF alpha high sensitivity	TNFH B	Blood	SST, EDTA	500µL	Serum: Allow samples to clot for about 30	Store samples at ≤-20°C. Avoid	Protein	Serum: 7.78-12.2	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA plasma:	1.0,		, ,
		or	heparin		for 15 minutes at 1000 x g.			4.94-9.68			
		plasma)	plasma		Platelet-poor Plasma - Collect plasma on			Heparin plasma:			
					ice. Centrifuge at 2-8 °C for 15 minutes at			5.06-9.62			
TNF receptor 1	TNR1	Blood	Serum, EDTA	500uL	Serum: Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: 1065-2890	pg/mL	On request	N/A
		(serum	plasma,		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: 808-2790			
		or	heparin		for 15 minutes at 1000 x g.	Grossly haemolysed or icteric		Heparin: 879-3040			
		plasma)	plasma or		Plasma - Centrifuge for 15 minutes at 1000	samples should not be used.		CSF: 742-1416			
			CSF		x g within 30 minutes of collection.						
TNF receptor 2 (TNF RII/TNFRSF1B)	TNR2	Blood	Serum,	500uL	Serum: Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum: 1743-4198	pg/mL	On request	N/A
		(serum	EDTA plasma		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: 1320-4758			
		or	or heparin		for 15 minutes at 1000 x g.	Grossly haemolysed or icteric		Heparin:			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000	samples should not be used.		1263-2995			
					x g within 30 minutes of collection.						
Transforming growth factor alpha	TGFA	Blood	SST, EDTA	500uL	Serum: Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Werfen DS2	Serum: ND-32	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	(R&D Systems	Plasma: ND			
		or	heparin		for 15 minutes at 1000 x g.		kit)				
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000						
					x g within 30 minutes of collection.						
Transforming growth factor B-1	TGF1	Blood	SST, platelet	500µL	Serum: Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum:	pg/mL	On request	N/A
		(serum	poor EDTA		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	30120-61578			
		or	plasma or		for 15 minutes at 1000 x g.			PP EDTA:			
		plasma)	platelet poor		Plasma - Centrifuge for 15 minutes at 1000			1046-31915			
			heparin		x g within 30 minutes of collection.			PP heparin			
			plasma					1217-13398			

Test Description	Test	Sample	Sample tube		Processing requirements	Storage requirements	Method	Reference	Units	Frequency	Guide TAT
	code	type		volume	(pre-analysis)	(pre-analysis)		ranges	1.1		21/2
Transforming growth factor B-2	TGF2	Blood	SST, EDTA	500µL	Serum: Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Werfen DS2	Serum: ND-873	pg/mL	On request	N/A
		(serum	plasma,		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	(R&D Systems	EDTA: ND-442			
		or	heparin		for 15 minutes at 1000 x g.		kit)	Citrate: ND-320			
		plasma)	plasma or		Plasma - Centrifuge for 15 minutes at 1000			Heparin: ND-454			
		Disad	citrate	F00I	x g within 30 minutes of collection.	Store samples at ≤-20°C. Avoid	Dustsia	C		0	N/A
Trappin-2/elafin	ELAF	Blood	SST, EDTA	500uL	Serum: Allow samples to clot for 30	store samples at \leq -20 C. Avoid repeated freeze-thaw cycles.	Protein Simple Ella	Serum: 5971-18525	pg/mL	On request	N/A
		(serum	plasma or		minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella				
		or	heparin		for 15 minutes at 1000 x g.			EDTA: 6374-17637			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000			Heparin:			
					x g within 30 minutes of collection.			6571-16072			
Uromodulin	UROM	Blood	SST, EDTA	500uL	Serum: Allow samples to clot for 2 hours at	7 days at 2-8°C	Werfen DS2	-	ng/mL	On request	N/A
		(serum	plasma or		room temperature, centrifuge for 15	≤1 month -20°C	(Novus kit)				
		or	heparin		minutes at 1000 x g.	≤3 months -80°C					
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000	Avoid repeated freeze-thaw					
					x g within 30 minutes of collection.	cycles					
Vascular cell adhesion molecule-1	VCAM	Blood	SST, EDTA	500µL	Serum: Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum:	pg/mL	On request	N/A
vascular cell dullesion molecule 1	VCAN	(serum	plasma or	300µL	minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	315808-973354	P6/1112	Onrequest	14/5
		or	heparin		for 15 minutes at 1000 x g.	repeated freeze-thaw cycles.	Simple Lila	EDTA:			
		plasma)			Plasma - Centrifuge for 15 minutes at 1000			321648-879975			
		or CSF	plasma		x g within 30 minutes of collection.						
		UI CSF			x g within 50 minutes of conection.			Heparin: 361463-768399			
								CSF:			
VEGF Receptor 1/FLT-1	FLT1	Blood	SST, EDTA	500uL	Serum: Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	21508-74820 Serum: 84.4-165	pg/mL	On request	N/A
		(serum	plasma or	30002	minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	EDTA: 73.8-199	P6/111	onrequest	,
		or	heparin		for 15 minutes at 1000 x g.	Grossly heamolysed or icteric		Heparin: 65.0-140			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000	samples not suitable.		110001110			
		plasmaj	plasifia		x g within 30 minutes of collection.	samples not suitable.					
VEGF receptor 2	VGR2	Blood	SST, EDTA	500uL	Serum: Allow samples to clot for 30	Store samples at ≤-20°C. Avoid	Protein	Serum:	pg/mL	On request	N/A
		(serum	plasma or	00002	minutes at room temperature, centrifuge	repeated freeze-thaw cycles.	Simple Ella	8968-12737	P6/	onrequest	,,,
		or	heparin		for 15 minutes at 1000 x g.	Grossly heamolysed or icteric		EDTA: 8355-13394			
		plasma)	plasma		Plasma - Centrifuge for 15 minutes at 1000	samples not suitable.		Heparin:			
		piasitiaj	piasiria		x g within 30 minutes of collection.	samples not suitable.		8246-12767			
VEGF receptor 3	FLT4	Blood	SST or citrate	500uL	Serum: Allow samples to clot for 2 hours at	6 days at 2-8°C	Werfen DS2	Serum: 33-167	ng/mL	On request	N/A
		(serum	plasma	JOOUL	room temperature, centrifuge for 15	≤1 month -20°C	(Novus kit)	Citrate: 31-200		onrequest	N/A
		`	piasina			≤1 month -20 C ≤3 months -80°C	(NOVUS KIL)	Childle. 31-200			
		or placma)			minutes at 1000 x g.						
		plasma)			Plasma - Centrifuge for 15 minutes at 1000	Avoid repeated freeze-thaw					
					x g within 30 minutes of collection.	cycles					

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.		Werfen DS2 (Novus kit)	-	ng/mL	On request	N/A
Vitamin D binding protein	VDBP	or plasma)	Blood: SST, EDTA plasma or heparin plasma Urine: Sterile universal		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