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LABORATORY LOCATION:	Clinical Haematology Referral Laboratory, Hospital Ampang
(PERMANENT LABORATORY) □ 法方法[□ □ 本方法[□	Jalan Mewah Utara, Pandan Mewah, 68000 Ampang, Selangor., 68000, SELANGOR MALAYSIA
ACCREDITED SINCE :	19 MARCH 2025
FIELD(S) OF MEDICAL TESTING:	CYTOGENETICS
	HAEMATOLOGY

The standard used for assessment of this laboratory is MS ISO 15189:2022 (ISO 15189:2022, IDT).

A medical laboratory's fulfilment of the requirements of ISO 15189 means the laboratory meets both the technical competence requirements and the management system requirements necessary for it to consistently deliver technically valid test results. The management system requirements in ISO 15189 are written in language relevant to a medical laboratory's operations. Medical laboratories that implement ISO 15189 operate generally in accordance with the principles of ISO 9001. (See Joint IAF-ILAC-ISO Communiquè, November 2021)

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CENTRAL LOCATION	Clinical Haematology Referral Laboratory, Hospital Ampang Jalan Mewah Utara, Pandan Mewah, 68000 Ampang, Selangor. , 68000, Selangor
FIELD(S) OF MEDICAL TESTING:	CYTOGENETICS, HAEMATOLOGY

SCOPE OF MEDICAL TESTING: CYTOGENETICS

Specimen Tested	Type of Test/ Properties Measured/	Test Methods, Specifications/ Equipment/Techniques Used
(lavdeamia)		
(leukemia)	None	None
Bone Marrow	Bone Marrow	Manual Smearing & automated
	A (DA4A)	Staining (Bone
	Aspiration (BMA)	Marrow Aspiration) / Aerospray
		Autostainer Hema
	None	Pro 7152 as documented in
	None	HA/HAEM/MRKH/MOR/W1/BM-0
		4
	None	/ BD FACSCanto II as
		documented in
	BCR::ABL1 fusion gene	One-step multiplex PCR method,
	(Qualitative)	RNA / ASTEC GeneAtlas &
		Biometra-T ADVANCED Thermal
	gene	HA/HAEM/MKH/MOL/WI 15-1
	Hematoxylin & Eosin	Automated using Thermo
		Shandon Varistain
	None	None
	ii Hemoglobin	None
	Hematocrit IV.	None
	Karyotyping	G-banding technique /
		MetaSystem: IKAROS imaging
	Fluorescence In-situ	FISH method/ Thermobrite-
		StatSpin, Abbott Molecular
	Bone Marrow	Manual as documented in Bone
		Marrow Processing
	Examination	GPQD/HAE/SOP-13, MGG Stain
	Examination	GPQD/HAE/SOP-9 and Iron
		Stain GPQD/HAE/SOP-8
	Bone Marrow Aspiration (BMA)	Manual bone marrow slide
		preparation (smearing & staining)
		As documented in
		HSNI/PAT/HM/TPM/VER3/06
	Bone Marrow Aspiration (BMA)	HSNI/PAT/HM/AK/VER2/07
	Bone Marrow Aspiration Smear	Staining and Microscopic
		Observation
	Bone Marrow Aspiration Smear	HS/JP/WI(HM:08)-013-015

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Bone marrow examination	Slide routine staining:
	(Automated) as documented in;
	SASMEC@IIUM/PALM/HAE-
	WI0101/W10105 Haematology
	Slide Stainer Cytocentrifuge
	Manual
Bone marrow examination	Slide preparation and routine
	staining (Manual)
Bone marrow examination	May Grunwald Giemsa staining
	as documented in
	SASMEC@IIUM/PALM/HAE-
	WP03
	SASMEC@IIUM/PALM/HAE-
	WI0301
Bone marrow examination	Slide preparation and routine
	staining (Manual)
Bone marrow examination	Perl?s staining as documented in
	SASMEC@IIUM/PALM/HAE-
	WP03
	SASMEC@IIUM/PALM/HAE-
	WI0302
Bone marrow examination	Slide preparation and special
	staining (Manual)
Bone marrow examination	Periodic Acid Schiff (PAS)
	staining as documented in
	SASMEC@IIUM/PALM/HAE-
	WP03
	SASMEC@IIUM/PALM/HAE-
	WI0304
Bone marrow examination	Slide preparation and special
	staining (Manual)
Bone marrow examination	Peroxidase (POX) staining as
	documented in
	SASMEC@IIUM/PALM/HAE-
	WP03
	SASMEC@IIUM/PALM/HAE-
	WI0305
None	None
None	None

SCOPE OF MEDICAL TESTING: HAEMATOLOGY

Specimen Tested	Type of Test/	Test Methods, Specifications/
	Properties Measured/	Equipment/Techniques Used
(bmt)	None	None
(fish, Leukemia)	None	None
Aspirates	None	None
-	None	Cyclers as documented in

Cytogenetic

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	None	None
	Quantitative RT- PCR	Two-steps real-time PCR quantitative analysis,
Cell Count And	None	None
Cord Blood	Platelet (PLT)	None
Cora Blood	CD34+ Enumeration	Single-platform ISHAGE Method
	CD34+ Enumeration	BD FacsCalibur
	and Viability test	Flowcytometer as documented in
	None	HA/HAEM/MRKH/BMT/WI-02
	Full Blood Count	sizing method as documented in
	(1100)	Sysmex
	(HSC)	fluorescence detection method as
	Cell Viability	BD Via Probe? for exclusion of non-viable
	ABO Grouping	Diamed-ID micro typing system
	122.0	gel card
	ABO Grouping	method as documented in Diamed Diaclon
	ABO Grouping	ABO/Rh for newborns package insert
	Blood Culture	BACTEC blood culture system
	Blood Culture	
Csf	None	(BACTEC None
CSI	None None	
		HA/HAEM/MKH/MOL/WI-18
	Minor fusion	RNA/ LC1.5, Roche as
		documented in
	gene	HA/HAEM/MKH/MOL/WI-04-2
	a) Culture & sensitivity	Manual method as documented in:
	a) Culture & sensitivity	a) MK-HPSF-PAT-MC-03
	,	Manual Kerja Pengendalian
		Spesimen CSF)
	b) Cell count + Bacterial antigen	b) MK-HPSF-PAT-MC-03
	1, 11 11 11 11 11 11 11 11	(Manual Kerja Pengendalian
		Spesimen CSF) c)}?MPT-HPSF-
		PAT-MG-12.2 (Manual Prosedur
	d\ Crops stsin	Teknikal Latex Agglutination
	d) Gram stain	Test) qd) MPT-HPSF-PAT-
		MC-5.1 (Manual Prosedur
		Teknikal: Staining Procedure ?Gram? Stain)
	e) Indian ink	e) MPT-HPSF-PAT-MC-5.2
	,	(Manual Prosedur Teknikal:
		Staining Procedure ?Indian Ink)
	Culture & Sensitivity Testing & Microscopy	Manual Method As Documented in HSNI/PAT/MB/AK-2

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	Cryptotoccal Antigen	Lateral Flow as documented in HS/JP/W1(MB:10)-004/Section 28
Diagnostic	None	None
	None	None
Flow Cytometry	None	None
Haemostasis &	None	None
Hematopathology	None	None
Hemoglobinopathy	None	None
Molecular	None	None
	None	None
Morphology	None	None
	Full Blood Count	None
	(FBC)	Cell Count / Sysmex XN3000 (Sysmex XN-20
	Red Blood Cell	Integrated with Automated Slide Maker SP10) as
	ii Hemoglobin	documented in HA/HAEM/MRKH/MOR/WI-15
Peripheral Blood	Immunophenotyping	Flow cytometry Immunophenotyping Classification of
	None	Leukemia, Lymphoma and Peripheral Blood for PNH
	None	None
	Quantitative RT- PCR	One-step real-time PCR quantitative analysis,
	Major fusion	RNA / Rotor-Gene Q, Qiagen as documented in
	(WBC)	Mindray BC-3600 analyzer as documented in
	Full Blood Count	Sysmex XN-1000 based on counting and
	Hemopoietic Stem Cell	BD FACSCanto II three-colour flowcytometry
Plasma	Prothrombin	Viscosity-based detection / STA Compact a
	Time (PT)	Analyzer as documented in
	Activated Partial	None
	Thromboplastin	None
	Time (APTT)	b Turbidimetric immunoassay / ACL TOP CTS 500
	iii Fibrinogen	as documented in
	(Clauss	None
	Technique)	None
	Factor Assays Iv	None
	(Based on	None
	APTT)	None
	Factor Assays Vv	None
	(Bas ed on PT)	None

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Collagen Binding	ELISA method / TECAN Sunrise
	Microplate Reader
Assay (CBA)	as documented in
None	HA/HAEM/MRKH/RCH/W118
Factor Inhibitors	Coagulation method / ACL TOP
	CTS 500 as
(Bethesda Unit)	documented in
None	HA/HAEM/MRKH/RCH/WI-09
Lupus Anticoagulant	Viscosity-based detection / STA Compact Analyzer
(Screening test)	as documented in
None	HA/HAEM/MRKH/RCH/WI-02
Anti-Xa (Low	Viscosity-based detection / STA
Anti Na (Low	Compact Analyzer
Molecular Weight	as documented in
Heparin)	HA/HAEM/MRKH/RCH/WI-02
Lupus Anticoagulant	Viscosity-based detection / STA
Eapus Aithoagulailt	Compact Analyser
(Confirmation Test)	as documented in
None	HA/HAEM/MRKH/RCH/WI-11
Von-Williebrand	Turbidimetric immunoassay /
VOII-VVIIIIEDI AITG	ACL TOP CTS 500 as
(VWF) Assays	documented in
None	HA/HAEM/MRKH/RCH/WI-22
Glucose	Automation / Cobas 6000
Glucose	
	analyzer series module C501 as documented in
	MKAI/SP/BKM/WI-01
Activated Partial	
Activated Fartial	Clotting method by Sysmex CA104 as
Thromboplastin Time	documented in Haematology
	Procedure Manual
(APTT)	Chapter YP151
Prothrombin Time (PT)	Clotting method by Sysmex
	CA104 as
None	documented in Haematology
	Procedure Manual
None	Chapter YP152
INR	Photo-optical clot
	reaction/CS2500 (2) as
	documented in PT/INR SOP
	(GPQD/HAE/SOP-33)
APTT	Photo-optical clot
	reaction/CS2500 (2) as
	documented in APTT SOP
	(GPQD/HAE/SOP-37)
Fibrinogen	Photo-optical clot
S	reaction/CS2500 (2) as
	documented
Fibrinogen	in Fibrinogen SOP
	(GPQD/HAE/SOP-35)
	(3. 35/17/12/33/1 30/

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Lupus Anticoagulant	Photo-optical clot
	reaction/CS2500 (2) as
	documented
Lupus Anticoagulant	in SOP (GPQD/HAE/SOP-1)
Antithrombin III	Photo-optical clot
	reaction/CS2500 (2) as
	documented
Antithrombin III	in Antithrombin II]
	GPQD/HAE/SOP-2
Protein C	Photo-optical clot
	reaction/CS2500 (2) as
	documented
Protein C	in Protein C GPQD/HAE/SOP-4
Protein S	Photo-optical clot
	reaction/CS2500 (2) as
	documented
Protein S	in Protein S GPQD/HAE/SOP-3
Factor V Leiden	Photo-optical clot
	reaction/CS2500 (2) as
	documented
Mutation	in Factor V Leiden
Matation	GPQD/HAE/SOP-6
HIV-1 RNA Quantitative	Real-Time PCR/Alinity M System
	(1 as
HIV-1 RNA Quantitative	documented in SOP
	(GPQD/MOL/SOP-19
HBV DNA Quantitative	Real-Time PCR/Alinity M System (1 as
HBV DNA Quantitative	documented in SOP (GPQD/MOL/SOP-19
HCV RNA Quantitative	Real-Time PCR/Alinity M System (1 as
HCV RNA Quantitative	documented in SOP
	(GPQD/MOL/SOP-19
HCV RNA	Real-Time PCR/Alinity M System
	(1 as
HCV RNA	documented in SOP
	(GPQD/MOL/SOP-19
Iron	Photometry hexokinase/Cobas
	c311 as
Iron	documented electronically in
	Roche COBAS
Iron	LINK/COBAS c311
Glucose	Photometry hexokinase/Cobas
	c311 as
Glucose	documented electronically in
	Roche COBAS
Glucose	LINK/COBAS c311
INR	Clotting scattered light detection
	method/Sysmex

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APTT	Ca-660 as documented in GPQD/HAE-SSOP-
APTT	43/CA600 Operating Procedure
Blood Group	GPQD/HAE/SOP-47 and
Вюба Стоар	GPQD/HAE/SOP-48
DAT	Direct agglutination/Diamed Gel-
DAT	card as
DAT	documented in
DAT	GPQD/HAE/SOP-45 and
DAT	GPQD/HAE/SOP-48
	*
Antibody Screen	Agglutination with Panel cells/ Diamed Gel-card as
Antihady Caroon	
Antibody Screen	documented in
A satisfication Company	GPQD/HAE/SOP-53 and
Antibody Screen	GPQD/HAE/SOP-48
Cross-match	Major cross match/ Diamed Gel-
	card as documented
Cross-match	in GPQD/HAE/SOP-46 and
	GPQD/HAE/SOP-48
Glucose	Colourimetric hexokinase/Cobas
	c501 as =
Glucose	documented electronically in
	Roche COBAS
Glucose	LINK/COBAS 6000
Lactate	Colourimetry Enzymatic/Cobas
	c501 as
Lactate	documented electronically in
	Roche COBAS
Lactate	LINK/COBAS 6000
INR	Electromagnetic sensor/CA104
	as documented in
INR	ST art4 SOP
	(GPQD/HAE/SOP-42)
APTT	Electromagnetic sensor/CA 104
	as documented in
APTT	ST art4 SOP
	(GPQD/HAE/SOP-42)
Glucose	Spectrophotometry/Cobas c311
	as documented
Glucose	electronically in Roche C311
Procalcitonin	Immunoelectrochemiluminescenc
	e/Cobas e144 as
Procalcitonin	documented electronically in
	Roche COBAS
INR	Clotting method-turbo
	densitometric photo-optical
INR	measuring principle/Sysmex CA
	104 as
INR	documented in
	(GPQD/HAE/SOP-42)
G6PD Screen	nan
CC. D C0.0011	Tidii

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G6PD Screen	Fluorescence Immunoassay as
	documented in D
D-Dimer	Dimer SOP
	(GPQD/HAE/SOP-36)
Blood Culture	9240) fluorescent method as
	documented in
Blood Culture	SL/LAB/S3.1 and BD BACTEC
	9240 Manual
	oz re mariadi
HIV Genotypic Resistance -"	Polymerase Chain Reaction
,	(PCR) and
Protease and Reverse	Population-based Genome
	Sequencing /
Transcriptase	Eppendorf Mastercycler X50s
·	thermal cycler
Transcriptase	as documented in
Transcriptase	IMR/IDRC/VIRO/SOP/HIV/10
HIV Genotypic Resistance -"	Polymerase Chain Reaction
•	(PCR) and
Integrase	Population-based Genome
-	Sequencing /
Integrase	Eppendorf Mastercycler X50s
_	thermal cycler
Integrase	as documented in
Integrase	IMR/IDRC/VIRO/SOP/HIV/11
Homocysteine (Total)	Documented in
	IMR/SDC/BC/SOP-4 / Agilent
	1260 HPLC
Homocysteine (Total)	with Fluorescence Detector
Carnitine (Total & Free)	Enzymatic end-point as
	documented in
Carnitine (Total & Free)	IMR/SDC/BC/SOP-3/
	Spectrophotometer
Glycosaminoglycans	Complex with Dimethylmethylene
	Blue (DMB)
(GAG) Quantitation	as documented in
	IMR/SDC/BC/SOP-5/
	Spectrophotometer
GAG Separation	High Resolution Electrophoresis
	as
GAG Separation	documented in
	IMR/SDC/BC/SOP-6/ Multiphor
GAG Separation	II Electrophoresis System
Organic Acids	Derivatisation with BSTFA as
	documented in
Organic Acids	IMR/SDC/BC/SOP-9/GCMS
	Agilent 7890B

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October Asia	D
Orotic Acids	Reverse-phase Chromatography
Orotic Acids	Documented in
Orotic Acids	IMR/SDC/BC/SOP-10/ Agilent
	1200 HPLC
Orotic Acids	
	with Diode Array Detector
Coagulation:	Clotting (optical) Method/Sysmex
Prothrombin time (PT)	CS1600 As documented in HSNI/PAT/HM/TPM/VER3/2019/
Prountombin time (PT)	02
	HSNI/PAT/HM/AK/VER3/2019/04
Activated Partial	HSNI/PAT/HM/TPM/VER3/2019/
	03
Thromboplastin Time (APTT)	HSNI/PAT/HM/AK/VER3/2019/04
Ammonia	GLDH? UV on Beckman Coulter
	AU5800 as documented in
	HS/JP/W1 (CP;07)-024 Test on
	Beckman Coulter AU5800
Lactate	Enzymatic LOD-POD on
	Beckman Coulter AU5800 as
	documented in HS/JP/WI
	(CP;07)- 024 Test on Beckman
	Coulter AU 5800
Mycophenolic Acid	EMIT on Viva E (Siemens) as
71	documented in HS/JP/WI
	(CP:07)- 014 Test on VIVA E
	(Siemens)
Prothrombin Time (PT)	Clotting Activity
	HS/JP/W1(HM:08)- 007
Activated Partial Thromboplastin	Clotting Activity
Time (APTT)	HS/JP/W1(HM:08)- 007
Fibrinogen Estimations (FIB)	Clotting Activity
. ,	HS/JP/W1(HM:08)- 007
International Normalised Ratio	Clotting Activity
(INR)	HS/JP/W1(HM:08)- 007
D-Dimer Quantitative	Change in turbidity of a
	microparticle suspension
	measured by photometry
Coagulation Mixing Test:	Clotting Activity
APTT/PT	HS/JP/W1(HM:08)- 017
Ammonia	Glutamate Dehydrogenase as
	documented in Arahan Kerja
	Pengendalian Ujian Pada Alinity
	(HTPG/JP/CHM/AK-02)
Lactate (LacticAcid)	Lactic Acid to Pyruvate (L to P)
	as documented in Arahan Kerja
	Pengendalian Ujian Pada Alinity
	(HTPG/JP/CHM/AK-02)
PT/ INR	Mechanical clot detection

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	PT/ INR	Analyser: Stago Compact/ Max
		All methods and specifications as
		documented in
		HTPG/JP/HEM/AK-04
	APTT	Mechanical clot detection
	APTT	Analyser: Stago Compact/ Max
		All methods and specifications as
		documented in
		HTPG/JP/HEM/AK-05
	Fibrinogen	Clauss method Analyser: Stago
		Compact/ Max All methods and
		specifications as documented in
		HTPG/JP/HEM/AK-06
	D-Dimer	Turbidimetry Analyser: Stago
		Compact/ Max All methods and
		specifications as documented in
		HTPG/JP/HEM/AK-07
	Glucose (Plasma)	Hexokinase Method. Analyzer
		Beckman Coulter AU680
		(labelled as AU680-A and
		AU680-B) as documented in
		SASMEC@IIUM/PALM/INT-
		WI0203
Pleural Fluid	None	None
Ticarai Fiaid	Leukemia 30 fusion genes	Multiplex PCR method, RNA /
	translocation	AriaDX (Agilent Technologies) as
	transiocation	documented in;
	None	HA/HAEM/MKH/MOL/WI-18
	JAK2 V617F mutation	Amplification Refractory Mutation
	OAKE VOTTI Matation	System (ARMS) method, DNA/
		ASTEC GeneAtlas &
	None	Biometra-T ADVANCED Thermal
	NOTIC	Cyclers as
	None	documented in
	None	HA/HAEM/MKH/MOL/WI-02-2
	None	07-1
	Calreticulin gene	High Resolution Melting (HRM)
	mutation	analysis, DNA / LC480, Roche as documented in
	None	HA/HAEM/MKH/MOL/WI-02-2
	None	HA/HAEM/MKH/MOL/WI 13
	NPM1 gene mutation	High Resolution Melting (HRM)
	Nana	analysis, DNA/
	None	LC480 II, Roche as documented
	Nana	in
	None	HA/HAEM/MKH/MOL/WI-02-2
	None	17
	FLT3-ITD	PCR, ASTEC GeneAtlas &
		Biometra-T
	None	ADVANCED Thermal Cyclers as documented in

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	None	
	None	HA/HAEM/MKH/MOL/WI-02-2
	None	HA/HAEM/MKH/MOL/W116
	None	07-1
	Quantitative RT- PCR	Two-steps real-time PCR
		quantitative analysis,
	PML::RARa fusion	RNA/LC1.5, Roche as
		documented in
	gene (subtype	HA/HAEM/MKH/MOL/WI-04-2
	ber2 and ber3)	11
	Quantitative RT- PCR	Two-steps real-time PCR
		quantitative analysis,
	RUNX1::RUNX1T1	RNA/ LC1.5, Roche as
		documented in
	fusion gene	HA/HAEM/MKH/MOL/WI-04-2
	None	11
	Quantitative RT- PCR	Two-steps real-time PCR
		quantitative analysis,
	CBFB::MYH11A-"fusion	RNA/ LC1.5, Roche as
		documented in
	gene	HA/HAEM/MKH/MOL/WI-04-2
	None	11
Stem Cell (pbsc)	Red Blood Cell	HA/HAEM/MRKH/BMT/WI-03
Otom Con (page)	(RBC)	None
Thrombosis	None	None
Transplantation	None	None
Trephine	(H&E) Staining	Gemini Autostainer as
Першие	(FIRE) Stairing	documented in
	Histochemical Staining	None
		None
	(Special Stain) Reticulin	
	Reticulin	Manual using Bio-Optica Silver
	Nana	Impregnation Retic Stain Kit as documented in
	None	
	None	HA/HAEM/MRKH/HEMATOPAT
	Our safe TMs	HIWI-14
	Grocott-™s	Manual using Thermo Scientific
		Modified
	Methenamine	Grocott-™s Methenamine Silver
		Stain (Chromic
	Silver (GMS)	Acid) commercial kit as
		documented in
	None	HA/HAEM/MRKH/HEMATOPAT
		HIWI-15
	iii Ziehl - Neelsen	Manual using Clin-Tech Ziehl -
		Neelsen complete
	None	commercial kit as documented in
	None	HA/HAEM/MRKH/HEMATOPAT
		HIWI-16
	PAS Iv	Manual using Bio-Optica Periodic
		Acid Schiff
	None	Stain commercial kit as
		documented in

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	None	HA/HAEM/MRKH/HEMATOPAT HIWI-17
	Congo Red	Manual using Bio-Optica Congo Red Stain
	None	commercial kit as documented in
	None	HA/HAEM/MRKH/HEMATOPAT HIWI-18
	Immunohistochemistry	Automated using Leica Bond III Autostaining
	(IHC) Staining	System as documented in
	None	HA/HAEM/MRKH/HEMATOPAT HIWI-11
	In-situ Hybridisation	Automated using Leica Bond III Autostaining
	(ISH) Staining	System as documented in
	None	HA/HAEM/MRKH/HEMATOPAT HIWI-11
Whole Blood	iii Hematocrit	None
	iv. Mean Cell Volume Mean Vv	b Coulter Principle, CN-Free Hemoglobinometry, Flowcytometry / UniCel DxH 800 Coulter as documented in
	Corpuscular	None
	Haemoglobin	None
	Mean Cell vi	None
	Haemoglobin	None
	Concentration	None
	vii Platelet	None
	viii Red Cell	
		None
	Distribution	None
	Width (CV)	None
	Full Blood Picture	Fully automated preparation / Sysmex XN3000
	(FBP)	(Sysmex XN-20 Integrated with Automated Slide Maker SP10) as documented in
	Haemoglobin	Capillary Electrophoresis (CE) / SEBIA Flex2
	Analysis	Cap Piercing Analyser as documented in
	None	HA/HAEM/MRKH/RC/WI-23
	None	Gel Electrophoresis (acid) / Hydrasis Gel
	None	Electrophoresis Analyser as documented in
	None	Gel Electrophoresis (alkaline) / Hydrasis Gel
	None	Electrophoresis Analyser as documented in
	None	HA/HAEM/MRKH/RC/WI-25

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Blood Count (FBC)	Electrical resistance for counting WBC, RBC and	
White Cell	PLT and cyanide free method for	
	hemoglobin /	
None	as documented in	
None	HA/HAEM/MRKH/CYT/WI-11v1	
Karyotyping	G-banding technique / MetaSyste	
Karyotyping	m: IKAROS imaging as	
	documented in	
Nana		
None	HA/HAEM/MRKH/CYT/WI-05-1v2	
None	HA/HAEM/MRKH/CYT/WI-11v1	
None	HA/HAEM/MRKH/CYT/WI-12v2	
Hybridization (FISH)	/MetaSytem ISIS imaging as	
	documented in	
None	HA/HAEM/MRKH/CYT/WI-13v1	
None	HA/HAEM/MRKH/CYT/WI-17v2	
None	HA/HAEM/MRKH/CYT/WI-18v2	
None	HA/HAEM/MRKH/CYT/WI-19 v1	
None	HA/HAEM/MRKH/CYT/WI-20v1	
Fluorescence In-situ	FISH method /Thermobrite-	
	StatSpin,Abbott Molecular	
Hybridization (FISH)	/MetaSytem ISIS imaging as	
, , ,	documented in	
None	HA/HAEM/MRKH/CYT/WI-13v1	
None	HA/HAEM/MRKH/CYT/WI-17v2	
None	HA/HAEM/MRKH/CYT/WI-17v2	
None	HA/HAEM/MRKH/CYT/WI-18V2	
None	HA/HAEM/MRKH/CYT/WI-20v1	
ABO Blood Grouping / Rh (D)	Tube Method as documented in	
ABO Blood Grouping / Kir (b)	MTM-IH-06	
Malarial Antigen	ELISA Method as documented in	
	MTM-IH-03	
Malarial Antigen	ROBONIK Washwell plate Elisa	
	Washer	
Malarial Antigen	ROBONIK Readwell touch Elisa	
	Plate	
Malarial Antigen	Analyser	
Blood Film Malaria	Microscopy -" Thick and Thin	
	Blood Film as	
Parasite (BFMP)	documented in MTM-IH 07	
Parasite (BFMP)	Giemsa stain	
Full Blood Count	Cell count using Sysmex XN 550	
T dii Biood Codiit	and XN 1000	
(FBC)	analyzers as documented in	
	Haematology	
None	Procedure Manual Chapter and	
	YP037	
ABO and RhD Blood	Manual tube method as	
	documented in Blood	
Grouping	Bank Procedure Manual Chapter	
, 3	BP020	
	-	

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Cross-matching	Column Agglutination Technology
	method as
None	documented in Blood Bank
	Procedure Manual
None	Chapter BP026
ABO Blood Grouping /	Test Tube
Rhesus	nan
Full Blood Count (FBC) White	Mythic-,,¢ 22 AL
Blood Cell	Wytho "\$ 22 A2
Lymphocyte	nan
Monocytes	nan
Neutrophils	nan
Eosinophils	nan
Basophils	nan
Red Blood Cell	nan
Hemoglobin	nan
Hematocrit	nan
Mean Cell	
Volume	nan
Mean	nan
Corpuscular	nan
· · · · · · · · · · · · · · · · · · ·	nan
Hemoglobin Concentration	nan
Red Cell	nan
	nan
Distribution Width	nan
Platelets	nan
Mean Platelet	nan
Volume	nan
Malaria Antigen	Reader and Washer (ELISA
	Method)
Malaria Antigen	GBLISA-R Microplate Reader
Malaria Antigen	GBLISA-W Microplate Washer
Malaria Slide	Thick & Thin Blood Film by
	Microscopy Method
(Outsource)	nan
Glycated Haemoglobin	Clover A1c-,,¢ Self
Glycated Haemoglobin	On-Call Multipro Analyzer
Malaria Antigen	Malaria ELISA Enzyme Linked
	Immunosorbent
Screening Test (ELISA)	Assay / ELISA Semi Automated
	Instrument -"
Screening Test (ELISA)	Washer, Reader and Incubator
	as documented
Screening Test (ELISA)	in Q@LAB_SOP_04
Blood film for Malaria	Blood Film Malaria Parasite
	(Thick and Thin
Parasite	Film) / Giemsa Staining of Thick
	and Thin Blood
Parasite	Film as documented in Q
	LAB_SOP_05

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	T
Cyclosporin	Immunoelectrochemiluminescenc
	e/Cobas e801
Cyclosporin	(6) as documented in
0.000	electronically in Cobas e801
G6PD screen	Fluorescence Method/Manual as
0.000	documented in G6PD
G6PD screen	SOP (GPQD/HAE/SOP-55)
Cytomegalovirus PCR	as documented in
M I. O. O. I. M.	GPQD/MOL/SOP-14
Mumps IgG & IgM	Chemiluminescence
M I. O. O. I. M.	Immunoassay/Diasorin XL (2)
Mumps IgG & IgM	as documented in Operator
Manalan In O. O. In M.	Manual
Measles IgG & IgM	Chemiluminescence
Magalag IgC 9 IgM	Immunoassay/Diasorin XL (2)
Measles IgG & IgM	as documented in Operator
Vericelle IaC 9 IaM	Manual
Varicella IgG & IgM	Chemiluminescence
Variable la C 9 la M	Immunoassay/Diasorin XL (2)
Varicella IgG & IgM	as documented in Operator
LIDAAO	Manual DOOT/NOOD/ Doot of the
HBA1C	DCCT/NGSP/ Roche Cobas
LIDAAC	(c501, c311) as
HBA1C	documented electronically in
LIDAAC	Roche COBAS
HBA1C	LINK/Roche COBAS
Urine Pregnancy Test	UPT Test strip method as
Lluina Dramanay Toot	documented in
Urine Pregnancy Test HBA1C	GPQD/BI/SOP-11 TTAB-
INDATO	
	Tetradecyltrimethylammonium bromide
HBA1C	Turbidimetric/Cobas c501
IDAIC	
HBA1C	documented as
INDATO	electronically in Roche COBAS
LIDA1C	LINK/COBAS 6000
HbA1C	Spectrophotometry/Cobas c311
	as documented electronically in Roche C311
Troponin T (POCT)	Quantitative immunological
Troponin T (POCT)	method as documented in Roche
	H232 (Cobas H232 Operator
	Manual)

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Full Blood Count (FBC)	Fluorescence Flow Cytometry,
	Hydro Dynamic Focusing & SLS
	Hemoglobin determination /
	Sysmex XN1000 as documented
	in HSNI/PAT/HM/TPM/VER3/01
Full Blood Count (FBC)	HSNI/PAT/HM/AK/VER3/01
D-Dimer	Antigen-antibody
	interaction/Cobas H232 As
D. D.	documented in
D-Dimer	HSNI/PAT/HM/TPM/VER2/04
D-Dimer	HSNI/PAT/HM/AK/VER2/05
Peripheral Blood Film (PBF)	Manual peripheral blood slide
	preparation (smearing & staining)
	As documented in
Darinhard Blood Film (DDF)	HSNI/PAT/HM/TPM/VER3/05 HSNI/PAT/HM/AK/VER2/06
Peripheral Blood Film (PBF)	
ABO Grouping	Manual method (tube method) As documented in
	HSNI/PAT/AK/TD/31
Blood Gases	
blood Gases	Flow through electrode sensors as documented in HS/JP/WI (CP
	;07)-020 pH and Blood Gases on
	GEM PREMIER 3500
Cyclosporine	EMIT on Viva E (Siemens) as
Cyclosponie	documented in HS/JP/WI
	(CP:07)- 014 Test on VIVA E
	(Siemens)
Everolimus	Immunoturbidimetry on Beckman
	Coulter AU5800 as documented
	in HS/JP/WI (CP;07)- 024 Test
	on Beckman Coulter AU 5800
HbA1c	HLPC on Variant II Turbo
	(Biorad) as documented in
	HS/JP/WI (CP;07)-011 HbA1c on
	Variant II Turbo (Biorad)
Tacrolimus	EMIT on Viva E (Siemens) as
	documented in HS/JP/WI
	(CP:07)- 014 Test on VIVA E
	(Siemens)
Full Blood Count	Flowcytometry Method
	Hydrodynamic Focusing method
	SLS-Hemoglobin Method.
Full Blood Count	HS/JP/WI(HM:08)-004
Erythrocyte Sedimentation Rates	Westergren Method
(ESR)	HS/JP/W1(HM:08)- 005
Full Blood Picture (FBP)	Flowcytometry and Microscopic
	Examination HS/JP/W1(HM:08)-
	011

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Reticulocytes	Flowcytometry method
Reticulocytes	HS/JP/W1(HM:08)- 004
Hb Analysis	1. High Performance Liquid
	Chromatography
	HS/JP/W1(HM:08)-21 2. Capillary
	Electrophoresis
ABO and RhD Blood Grouping	Manual tube method as
	documented in Blood Bank
	Operation Procedure Manual
	BP020.
Cross-matching	Column Agglutination Technology
	method as documented in Blood
	Bank Operation Procedure
	Manual BP026.
Direct Antiglobulin Test	Column Agglutination Technology
	method as documented in Blood
	Bank Procedure Manual, BP085
Full blood Count (FBC)	Cell count using Sysmex XS 500i
	analyzer as documented in
	Haematology Procedure Manual
E 11 D1 1 O 1	YP036.
Full Blood Count	Method: Combination of
(5-part hematology analyser)	Impedence, SLS Hb,
(F	Flowcytometry, and calculation
(5-part hematology analyser)	Analyser: Sysmex XN-1000
(5-part hematology analyser)	All methods and specifications as documented in
	HTPG/JP/HEM/AK-01
(5-part hematology analyser)	Manual Differential count as
(3-part fielfiatology affairyser)	documented in
(5-part hematology analyser)	HTPG/JP/HEM/AK-11
Reticulocyte count	Flowcytometry method Analyser:
Treated of the death.	Sysmex XN-1000 All methods
	and specifications as
	documented in
	HTPG/JP/HEM/AK-01
Full Blood Picture	Manual blood smear and staining
	method using Leishman stain All
	methods and specifications as
	documented in
	HTPG/JP/HEM/AK-10 & AK-12
WBC?s Count	Aperture Impedance. Analyzer
	Beckman Coulter DXH 800 and
	DXH 900 as documented in
WBC?s Count	SASMEC@IIUM/PALM/INT-
	W10204 SASMEC@IIUM/PALM/I
	NT-W10205
RBC?s Count	Aperture Impedance. Analyzer
	Beckman Coulter DXH 800 and
	DXH 900 as documented in
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RBC?s Count	SASMEC@IIUM/PALM/INT-
	W10204
Hemoglobin?s Count	Photometric Impedance.
	Analyzer Beckman Coulter DXH
	800 and DXH 900 as
	documented
Hemoglobin?s Count	in SASMEC@IIUM/PALM/INT-
	W10204 SASMEC@IIUM/PALM/I
	NT-W10205
Hematocrit?s Count	Photometric Impedance.
	Analyzer Beckman Coulter DXH
	800 and DXH 900 as
	documented
Hematocrit?s Count	in SASMEC@IIUM/PALM/INT-
	W10204
Mean Corpuscular Volume?s	Aperture Impedance. Analyzer
Count	Beckman Coulter DXH 800 and
	DXH 900 as documented in
Mean Corpuscular Volume?s	SASMEC@IIUM/PALM/INT-
Count	W10204 SASMEC@IIUM/PALM/I
	NT-W10205
Mean Corpuscular Hemoglobin?s	Aperture Impedance. Analyzer
Count	Beckman Coulter DXH 800 and
	DXH 900 as documented in SAS
	MEC@IIUM/PALM/INT-W10204
	SASMEC@IIUM/PALM/INT-
	W10205
Mean Corpuscular Hemoglobin	Aperture Impedance. Analyzer
Concentration?s Count	Beckman Coulter DXH 800 and
	DXH 900 as documented in SAS
	MEC@IIUM/PALM/INT-W10204
	SASMEC@IIUM/PALM/INT-
	W1I0205
RDW?s Count	Aperture Impedance. Analyzer
	Beckman Coulter DXH 800 and
	DXH 900 as documented in
RDW?s Count	SASMEC@IIUM/PALM/INT-
	W10204 SASMEC@IIUM/PALM/I
	NT-W1I0205
Platelet?s Count	Aperture Impedance. Analyzer
	Beckman Coulter DXH 800 and
	DXH 900 as documented in
Platelet?s Count	SASMEC@IIUM/PALM/INT-
	W10204 SASMEC@IIUM/PALM/I
	NT-W10205
Neutrophils?s Count	Aperture Impedance. Analyzer
	Beckman Coulter DXH 800 and
	DXH 900 as documented in
Neutrophils?s Count	SASMEC@IIUM/PALM/INT-
	W10204 SASMEC@IIUM/PALM/I
	NT-W10205

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Lymphocytes?s Count	VCSn Analysis. Analyzer
	Beckman Coulter DXH 800 and
	DXH 900 as documented in
Lymphocytes?s Count	SASMEC@IIUM/PALM/INT-
	W10204
Monocytes?s Count	VCSn Analysis. Analyzer
	Beckman Coulter DXH 800 and
	DXH 900 as documented in
Monocytes?s Count	SASMEC@IIUM/PALM/INT-
	W10204 SASMEC@IIUM/PALM/I
	NT-W10205
Eosinophil?s Count	VCSn Analysis. Analyzer
Loomophii. o ocum	Beckman Coulter DXH 800 and
	DXH 900 as documented in
Eosinophil?s Count	SASMEC@IIUM/PALM/INT-
Losinophii?s Count	W10204
Paganhila?a Caunt	VCSn Analysis. Analyzer
Basophils?s Count	Beckman Coulter DXH 800 and
D 1 '1- 0 - 0 1	DXH 900 as documented in
Basophils?s Count	SASMEC@IIUM/PALM/INT-
	W10204 SASMEC@IIUM/PALM/I
	NT-W10205
NE# Count	VCSn Analysis. Analyzer
	Beckman Coulter DXH 800 and
	DXH 900 as documented in
NE# Count	SASMEC@IIUM/PALM/INT-
	W10204
LY# Count	VCSn Analysis. Analyzer
	Beckman Coulter DXH 800 and
	DXH 900 as documented in
LY# Count	SASMEC@IIUM/PALM/INT-
	W10204 SASMEC@IIUM/PALM/I
	NT-W10205
MO# Count	VCSn Analysis. Analyzer
	Beckman Coulter DXH 800 and
	DXH 900 as documented in
MO# Count	SASMEC@IIUM/PALM/INT-
	W10204 SASMEC@IIUM/PALM/I
	NT-W1I0205
EO# Count	VCSn Analysis. Analyzer
	Beckman Coulter DXH 800 and
	DXH 900 as documented in
EO# Count	SASMEC@IIUM/PALM/INT-
	W10204 SASMEC@IIUM/PALM/I
	NT-W1I0205
BA# Count	VCSn Analysis. Analyzer
	Beckman Coulter DXH 800 and
	DXH 900 as documented in
BA# Count	SASMEC@IIUM/PALM/INT-
	W10204 SASMEC@IIUM/PALM/I
	NT-W10205

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Nucleated Red Blood Cell?s Count	VCSn Analysis. Analyzer Beckman Coulter DXH 800 and DXH 900 as documented in
Nucleated Red Blood Cell?s Count	SASMEC@IIUM/PALM/INT- W10204 SASMEC@IIUM/PALM/I NT-W10205
NRBC# Count	VCSn Analysis. Analyzer Beckman Coulter DXH 800 and DXH 900 as documented in
NRBC# Count	SASMEC@IIUM/PALM/INT- W10204
MDW?s Count	VCSn Analysis. Analyzer Beckman Coulter DXH 800 and DXH 900 as documented in
MDW?s Count	SASMEC@IIUM/PALM/INT- W10204 SASMEC@IIUM/PALM/I NT-W10205
Retic?s Count	VCSn Analysis. Analyzer Beckman Coulter DXH 800 and DXH 900 as documented in
Retic?s Count	SASMEC@IIUM/PALM/INT- W10204
Glucose-6-phosphate dehydrogenase deficiency (G6PD) screening	Spot fluorescence test method as documented in; SASMEC@IIUM/PALM/HAE-WP01 SASMEC@IIUM/PALM/HAE-WI10102
Full blood picture with clinical interpretation	Slide preparation and routine staining: (Automated) as documented in; SASMEC@IIUM/PALM/HAE-WI0101/W10105 Haematology Slide Stainer Cytocentrifuge User's Manual
Haemoglobin analysis (HbA, HbA2, HbF, Hb variant)	Quantitation of HbA, HbA2, HbF, Hb variant: High Performance Liquid Chromatography (HPLC) method as documented in SASM EC@IIUM/PALM/HAE-WP02 SASMEC@IIUM/PALM/HAE- WI10203/ BioRad Variant II Haemoglobin Testing System User?s Manual
Haemoglobin analysis (HbA, HbA2, HbF, Hb variant)	Capillary?s electrophoresis (CE) method as documented in SASMEC@IIUM/PALM/HAE-WP02 SASMEC@IIUM/PALM/HAE-WI0202/ Sebia Capillarys 2 Flex Piercing User?s Manual

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Haemoglobin analysis (HbA, HbA2, HbF, Hb variant)	Hb H inclusion bodies
Haemoglobin analysis (HbA, HbA2, HbF, Hb variant)	Specimen preparation and staining (manual) as documented in SASMEC@IIUM/PALM/HAE-
Haemoglobin analysis (HbA, HbA2, HbF, Hb variant)	Blood cell morphology; Slide preparation and routine staining: (Automated) as documented in SASMEC@IIUM/PALM/HAE-WI10101/ Haematology Slide Stainer Cytocentrifuge User's Manual

NOTE: