

Senarai Ujian dan Keperluan spesimen Makmal Rujukan 2017

Bil.	Jenis Ujian	Unit, JPMD yang uruskan	Metodologi	Jenis Spesimen	Tempoh TAT (Hari bekerja)	Makmal Rujukan
1	ADAM TS-13	Hemostasis Khusus				HOSP. AMPANG
2	APCR, FV Leuden	Hemostasis Khusus	PCR	Plasma	3	PDN
3	Factor 10/ 11/12/ F13/ kesemua sekali	Hemostasis Khusus	1 Stage Clotting Method	Plasma	3	PDN
4	Factor 7	Hemostasis Khusus	1 Stage Clotting Method	Plasma	3	PDN
5	Isohaemagglutinin Test	Tabung Darah	Tube/Gel Card	Darah/EDTA	10	PDN
6	Platelet Antibody	Tabung Darah	ELISA	Darah/plain/EDTA	14	PDN
7	Antibody Identification	Tabung Darah				PDN
8	24 Hrs Copper / serum	Patologi Kimia	Atomic Absorbtion Spectroscopy	Urine / serum	21	IMR
9	Screening for IEM (Amino Acids & Acylcarnitines in blood spot)	Patologi Kimia	Quantitative by Tandem Mass Spectrometry	3 circles of dried blood spot	3	IMR
10	Blood Spot For POMPE	Sitogenetik				IMR
11	Blood Spot Total Galactose	Patologi Kimia			5	IMR
12	Blood Spot For GALT/G1PUT			Darah		IMR

13	Ceruloplasmin	Patologi Kimia		Blood/ Plain tube	5	HKL
14	Cholinesterase	Patologi Kimia		Blood	1	HKL
15	CSF Oligoclonal	Patologi Kimia	1. PRM/ Biuret 2. Nephelometry (Igs & Alb Quantification) 3. Immuno-isolectric focusing electrophoresis	1 ml CSF and 1 ml serum in Plain/Serum tube * CSF must be accompanied by serum sample. * CSF must be frozen immediately after collection. CSF (frozen) & Serum (at 2C-8C) must reach the lab not more than 7 days after collection date.	10	IMR
16	Everolimus	Patologi Kimia	Immuno-chemistry	1 ml serum with 2 mg sodium azide (preservative)		HOSP. SELAYANG
17	Everolimus	Patologi Kimia	Immuno-chemistry	2 ml serum with 2 mg sodium azide (preservative)		HOSPITAL KUALA LUMPUR
18	Galactosemia Screening (Total Galactose & Galactose-1-uridytransferase)	Patologi Kimia	Quantitative by enzyme assay	3 circles of dried blood spot	5	IMR
19	Melamine	Patologi Kimia				JAB. KIMIA HKL
20	Mercury	Patologi Kimia				JAB. KIMIA
21	Mercury	Patologi Kimia				HKL
22	Methotrexate (MTX)	Patologi Kimia		10 ml urine		HKL

23	Plasma Organic Acid	Patologi Kimia				IMR
24	Serum Antitrypsin	Patologi Kimia	Nephelometry	1.0ml serum in plain tube. Must reach the lab no more than 7 days(at 2-8 C) after date of collection	7	IMR
25	Serum Ethanol, Methanol	Patologi Kimia				JAB.KIMIA HKL
26	Serum Free Light Chain (Kappa:Lambda) rasion	Patologi Kimia	Turbidimetry	Plain/ Serum Serum must reach the lab not more than 7 days (at 2-8C) after collection date	5	Unit Molekular Diagnostik & Protein, IMR
27	Serum Phospholipid	Patologi Kimia		Darah		IMR
28	Serum Sirolimus	Patologi Kimia				HKL
29	Serum Zink	Patologi Kimia				Jabatan Kimia
30	Serum/Plasma amino acid	Patologi Kimia	HPLC	2 ml heparinised plasma. Morning (fasting) or 4 hrs after last meal. Centrifuge and freeze immediately. Transport frozen in dry ice.	10	IMR
31	Serum Beta-2- Microglobulin	Patologi Kimia	Nephelometry	1 ml serum in Plain/serum tube Serum must reach the lab not more than 7 days after collection date.	5	IMR

32	Serum Chromine	Patologi Kimia				Jabatan Kimia
33	Serum Cobalt	Patologi Kimia				Jabatan Kimia
34	Serum Protein Electrophoresis (Screening Profiling)- AGE	Patologi Kimia	Agarose-gel Electrophoresis (AGE)	3 ml serum Plain/ serum tube -must reach the lab not more than 7 days (at 2-8C) after collection	30	Unit Diagnostik Molekular Protein SDC, IMR
35	Serum Protein Electrophoresis (Screening Profiling)		1. Biuret 2. Nephelometry (Igs & Alb quantification) 3. AGE 4. AGIE 5. Densitometry			Unit Diagnostik Molekular Protein SDC, IMR
36	Total & Free Carnitine, Serum/Plasma	Patologi Kimia	End-point Enzymatic assay	Plasma - 2 ml heparinised plasma. Transport frozen in dry ice.	5	IMR
37	Thyroglobulin	Patologi Kimia	ELISA	Frozen serum	20	IMR
38	Total Homocysteine	Patologi Kimia	HPLC	2 ml heparinised plasma. Morning (fasting) or 4 hrs after last meal. Centrifuge and freeze immediately. Transport frozen in dry ice.	10	IMR

39	Toxicologi,(lead.etc)	Patologi Kimia	GCMS	Serum		JAB. KIMIA HKL
40	Toxicologi,(lead.etc)					IMR
41	Urine Delta ALA	Patologi Kimia				IMR
42	Urine Hemoglobinuria	Patologi Kimia				IMR
43	Urine 5HIAA	Patologi Kimia	HPLC with Electrochemical Detector	25ml of 24 hr urine in 25% HCL	7	IMR
44	Urine Amino Acid	Patologi Kimia	HPLC	Urine - 5mls Early morning Urine	10	IMR
45	Urine Catecholamine	Patologi Kimia	HPLC	25ml of 24 hr urine in 25% HCL	20	HKL
46	Urine Catecholamine	Patologi Kimia	HPLC	25ml of 24 hr urine in 25% HCL		PPUM
47	Urine Drug Abuse (M & C)	Patologi Kimia		10 ml urine		HKL
48	Urine Drug Abuse (M,C & ATS)	Patologi Kimia		10 ml urine		HKL
49	Urine Electrophoresis	Patologi Kimia	Agarosegel Electrophoresis	25 ml urines in 25 mgsodium azide or 2 drops of toluene		HKL
50	Urine Fat Globulin	Patologi Kimia				IMR
51	Urine for GAG/MPS	Patologi Kimia				IMR
52	Urine Ketamin	Patologi Kimia				HKL
53	Urine Metabolic Screening	Patologi Kimia				IMR
54	Urine Metephehrine	Patologi Kimia		25ml of 24 hr urine in 25% HCL		UM
55	Urine Myoglobin	Patologi Kimia				IMR
56	Urine Oligosaccharide	Patologi Kimia				IMR

57	Urine Organic Acid	Patologi Kimia	Qualitative by GCMS	5-10 ml random (morning) urine in sterile bottle. Preferably freeze in dry ice. Or with 2-3 drops of chloroform and transport at room temperature	5	IMR
58	Urine Orotic Acid	Patologi Kimia	Quantitative by HPLC	2mls urine, no preservative (transport frozen in dry ice)	5	IMR
59	Urine Phorphyrin	Patologi Kimia				IMR
60	Urine Phosphobilinogen	Patologi Kimia				IMR
61	VLCFA	Patologi Kimia				IMR
62	B27/B15:02/B57:01/OTHERS B locus	Hematologi		Darah	10	IMR
63	HLA Typing Class I & II (loci A, B DR)	Hematologi		Darah	10	IMR
64	HLA Typing Class 1 (loci A, B, C) - High Resolution (SSO)-per locus	Hematologi		Darah	10	IMR
65	Saliva kit (HLA Typing)	Hematologi		Saliva	10	IMR
66	HLA antibody test	Hematologi		Serum		IMR
67	Adenovirus PCR	Biologi Molekul				VIRO-IDRC IMR
68	Anti Cyclic Citrullinated Peptides (CCP)	Imunologi Serologi	Indirect immunofluorescence (IFA)	3 ml serum/ 5 ml blood in plain tube	14	AIRC-IMR
69	Anti Gamma-aminobutyric acid-b Receptor Antibody (GABA)	Imunologi Serologi	Indirect immunofluorescence (IFA)	Serum		AIRC-IMR
70	Anti Glomerular Basement Mambrene	Imunologi Serologi				AIRC-IMR
71	Anti N-Methyl-D-Aspartate Receptor (NMDAR)	Imunologi Serologi	Indirect immunofluorescence (IFA)	i) 3 ml serum/5 ml blood in plain tube ii) 1 - 1.5 ml CSF	7	AIRC-IMR
72	Acetylcholine Receptor Antibodies	Imunologi Serologi	ELISA	3 ml serum / 5 ml blood in plain tube	21	AIRC-IMR

73	Anti-Ganglioside Antibodies (Sulfatides, Anti-GM1, Anti-GM2, Anti-GM3, Anti-GM4, Anti-GD1a, Anti-GD1b, Anti-GD2, Anti-GD3, Anti-GT1a, Anti-GT1b, Anti-GQ1b)	Imunologi Serologi	Immunoblot	3 ml serum/ 5 ml blood in plain tube	14	AIRC IMR
74	Antigen Aspergillus Galactomannan	Mikologi	ELISA	Serum/ BAL	7	BAKTI IMR
75	Antigen Candida Mannan	Mikologi	ELISA	serum/plain tube	7	BAKTI IMR
76	Anti-Neutrophile Cytoplasmic Antibodies/ Anti-MPO/ Anti-PR3 1- P-ANCA 2- C-ANCA 3- Myeloperoxidase (MPO) 4- Proteinase 3 (PR3)	Imunologi Serologi	Indirect immunofluorescence (IFA)	3 ml serum/ 5 ml blood in plain tube	7	AIRC-IMR
77	P-ANCA			3 ml serum/ 5 ml blood in plain tube	7	AIRC-IMR
78	C-ANCA	Imunologi Serologi	Indirect immunofluorescence (IFA)	3 ml serum/ 5 ml blood in plain tube		AIRC-IMR
79	Myeloperoxidase (MPO)	Imunologi Serologi	Indirect immunofluorescence (IFA)	3 ml serum/ 5 ml blood in plain tube		AIRC-IMR
80	Proteinase 3-PR3	Imunologi Serologi	Indirect immunofluorescence (IFA)	3 ml serum/ 5 ml blood in plain tube		AIRC-IMR
81	Anti-Aquaporin 4	Imunologi Serologi	Indirect immunofluorescence (IFA)	i) 3 ml serum/5 ml blood in plain tube. ii) 1 - 1.5 ml CSF	7	AIRC-IMR
82	Cat scratch/ Bartonella antibody	Imunologi Serologi	IIP	serum	5	BAKTI IMR
83	Beta-2 Microglobulin	Hemostasis	Nephelometry	i) 1 ml serum in Plain/serum tube ii) Serum must reach the lab not more than 7 days after collection date	5	SERO IMR

84	BFMP PCR	Parasitologi	PCR	Blood in EDTA tube		
85	BK virus	Biologi Molekul	PCR	urin/ EDTA		H SG BULOH
86	Brucella serology	Imunologi Serologi	ELISA	serum		BAKTI IMR
87	Chikungunya Real Time RT-PCR	Virologi Serologi	PCR	Serum	5	VIRO IDRC-IMR
88	Chikungunya IF		IF	Serum	5	VIRO IDRC-IMR
89	Identification of anaerobes	Bakteriologi	Culture on media	Culture	30	BAKTI IMR
90	Coeliac Antibodies Test: -Anti-Tissue Transglutaminase (TTG) - Anti-endomysium, Anti-gliadin - Anti-gliadin	Imunologi Serologi				AIRC IMR
91	Verification of antibiotic resistance other than CRE	Bakteriologi	Disc diffusion	Plat NA		IDRC IMR
92	Dengue Multiplex Real Time RT-PCR	Biologi Molekul	rRT-PCR	Serum	5	VIRO IDRC-IMR
93	Diabetes Mellitus Antibodies- Anti Insulin	Imunologi Serologi	ELISA	serum		AIRC IMR
94	Diabetes Mellitus Antibodies- Anti Islet Cell (ICA)	Imunologi Serologi	ELISA	serum		AIRC IMR
95	Diabetes Mellitus Antibodies- Anti Glutamic Acid Decarboxylase (GAD)	Imunologi Serologi	ELISA	Serum	14	AIRC IMR
96	Diabetes Mellitus Antibodies- Anti Ansinoma Associated Antigen-2- (IA2)	Imunologi Serologi	ELISA	Serum		AIRC IMR
97	Antibiotic sensitivity testing	Bakteriologi	Culture on media E-test	Culture	5	BAKTI IMR
98	Echo virus	Tisu Kultur				MKAK
99	Enterovirus -HFMD	Tisu Kultur		RECTAL SWAB		MKAK
100	Enterovirus Real Time RT-PCR (Pan entero, CA16 and EV71)	Biologi Molekul	rRT-PCR	CSF, Pericardial-In ice, throat/ nasal/ vesicle swab in VTM	5	VIRO IDRC-IMR
101	Epstein-Barr virus PCR	Biologi Molekul	PCR	CSF, Tissue, Plasma, Serum	1-2	H SG BULOH

102	Filiariasis PCR	Parasitologi				Parasitologi IDRC IMR
103	Filiariasis Microscopic	Parasitologi	Microscopic	Slide/ blood in EDTA	1	Parasitologi IDRC IMR
104	Filiariasis Serology	Parasitologi	ELISA	Serum/plasma/ whole blood	1	Parasitologi IDRC IMR
105	Identification of fungi	Mikologi	PCR=sequencing and Biochip identification	Sample Blood in EDTA, BAL, body fluid, pus, aspirate, tissue(swab, urine not	5	IDRC-IMR
106	Gene expert study	Biologi Molekul	PCR	BAL		IPR
107	Hepatitis C- GENOTYPE	Biologi Molekul		DARAH-EDTA		VIRO,PPUM
108	HIV-2 RT-PCR	Biologi Molekul	rRT-PCR	Serum/ Plasma	5	VIRO IDRC-IMR
109	HSV PCR	Biologi Molekul	PCR	CSF/ Darah	1-2	H SG BULOH
110	ID/sensi MTB	Bakteriologi		LJ		MKAK
111	Immunoglobulin E (Specific) * per allergen	Imunologi Serologi	Fluorescence EIA	serum	5	AIRC IMR
112	Japanese Encephalitis (JE)	Virologi Serologi	EIA	Serum/ CSF	7-14 HARI	MKAK
113	Leptospiral PCR	Biologi Molekul	Lip L 32 gene detection, using Real Time PCR	Blood in EDTA/Urine/ Tissue (Kidney+livers)	5	BAKTI IMR
114	Leptospirosis MAT	Virologi Serologi	Detection of Leptospiral antibody using Microagglutination test	Blood in plain tube/serum	30	BAKTI-IMR
115	Line probe assay	Biologi Molekul		SPUTUM		MKAK
116	Specific liver antibodies:Anti-Ama, M2, M2-3E/BPO, sp100, PML, gp210, LKM1, LC-1, SLA/LP, Ro-52	Imunologi Serologi	Indirect immunofluorescence (IFA)	Serum		AIRC IMR
117	Lyme's Disease serology screening	Imunologi Serologi	Indirect immunofluorescence (IFA)	serum	5	IDRC-IMR
118	Lyme's Disease confirmatory (western blot) IgM & IgG	Imunologi Serologi	Western blot		4	IDRC-IMR

119	Malaria Diagnosis - PCR	Parasitologi	PCR		7	Parasitologi IDRC IMR
120	Melioidosis-Indirect Fluorescent antibody test	Imunologi Serologi	IFA test	SERUM	5	BAKTI IMR
121	MERS COV	Tisu Kultur	PCR	SWAB TEKAK/ NASAL/ SPUTUM		VIRO-HKL
122	Paraneoplastic Neurological Syndrome (PNS) antibodies (Anti-Ma, Anti-Yo, Anti-Ri, Anti-Hu, Anti-Amphiphysin, Anti-CV2)	Imunologi Serologi	Immunoblot	3 ml serum / 5 ml blood in plain tube	10	AIRC-IMR
123	Pneumocystis jiroveci of Pneumocystis carinii (PCP)	Mikologi	Indirect Immunofluorescent test (IF)	BAL, Tracheal Aspirate/ Induced sputum	5	
124	Plasmodium PCR	Parasitologi		DARAH EDTA		PARASIT IMR
125	PCR and identification of Burkholderia pseudomallei		Conventional PCR-Gel electrophoresis	Plate culture	2 weeks	BAKTI- IDRC IMR
126	Respiratory 7 Agents (Surveillance)	Tisu Kultur		NPA		VIRO-PPUM
127	Indirect immunoperoxidase test for typhus	Imunologi Serologi	Indirect immunoperoxidase test (IIF)	serum/ positive, negative dengan titre	5	BAKTI- IDRC IMR
128	Salmonella (non-human) Serotyping	Bakteriologi	Agglutination	Pure salmonella isolate-TSI	4	BAKTI IMR
129	Shigella sonnei	Bakteriologi	Agglutination	Pure salmonella isolate-TSI	4	BAKTI IMR
130	slide malaria-Lab Qas	Parasitologi		SLAID		IMR
131	Streptococcus pneumoniae serotyping (Surveillance)	Bakteriologi	ELISA	DARAH	4	BAKTI IMR
132	TB PCR	Biologi Molekul	PCR	CSF	5	IMR
133	Immunoglobulin E (Total)	Imunologi Serologi	Fluorescence EIA	serum	5	AIRC IMR
134	VZV PCR	Biologi Molekul	PCR	CSF/serum	1-2	H SG BULOH
135	Tryptase * per test	Imunologi Serologi				AIRC IMR
136	Prader Willi Syndrome - Mutation Screen	Sitogenetik				IMR
137	Angelman-MLPA	Sitogenetik				IMR
138	Angelman - PCR	Sitogenetik				IMR

139	Spinal Muscular Atrophy (Deletion) - MLPA	Sitogenetik				IMR
140	Spinal Muscular Atrophy (Deletion) - PCR	Sitogenetik				IMR
141	Frax A PCR Screening - Fragile X Syndrome	Sitogenetik	PCR and capillary electrophoresis	2.5ml blood/ EDTA Send at room temperature. If >3 hours, keep sample cooled/refrigerated (do not freeze the sample)		IMR
142	Frax E PCR Screening - Fragile X Syndrome	Sitogenetik				IMR
143	Frax A Confirmation - Fragile X Syndrome	Sitogenetik				IMR
144	MELAS - 3243 Hotspot	Sitogenetik				IMR
145	MELAS - Full Panel	Sitogenetik				IMR
146	Primary Dystonia: DYT1	Sitogenetik				IMR
147	Primary Dystonia : DYT6	Sitogenetik				IMR
148	Leber Hereditary optic neuropathy Panel (LHON)	Sitogenetik				IMR