



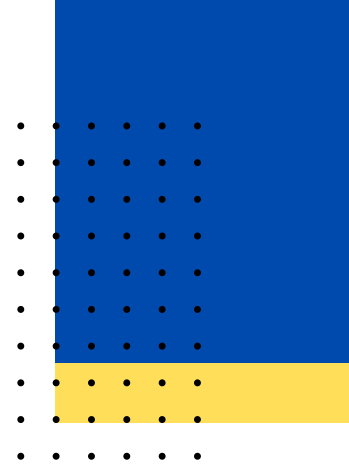
PATHOLOGY SERVICES HANDBOOK

1ST EDITION

AmCen
BEYOND TESTING

ENQUIRY@AMCEN.COM.MY
04-3903862

TABLE OF CONTENT



Introduction

Statement	1
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Service Information

Laboratory Address & Contact Information	2
Specimens Pick Up Services	2
Supplies	2
Collection of Specimens & Specimens Storage	2
Request Form	3
Specimen Packing	3
Follow-up Sample	3
Specimen Rejection Policy	4
Haemolysis	5

Specimen Collection & Handling

Order of Draw - Vacutainer Tubes	6
Other Collection Tubes	7
Mid-stream Urine (MSU) Specimens	7
Cytology	7

Complaint & Feedback

Single Tests

Biochemistry	9
Haematology	10
Immunology & Serology	11
Urine Test	12
Industry Testing / Heavy Metal	13-14
Cytology	15
Hormone	15

STATEMENT

VISION

To be leading laboratories, healthcare industrial consultancy services provider in ASEAN by 2025

MISSION

- A Accuracy and reliable
- M Maintain our professionalism
- C Competency
- E Eco-friendliness
- N Neutral role

QUALITY POLICY

To provide accurate, reliable, timely results while maintaining effective customer communication.

SERVICE INFORMATION

Laboratory Address & Contact Information

24, Tingkat Talang 1, Taman Emas,
13600 Perai,
Pulau Pinang
Tel: 04-3987311
Email: enquiry@amcen.com.my

Operation Hours:

Monday to Friday : 8:30 a.m. to 6:00 p.m.

Saturday & Sunday & PH : Closed

Specimens Pick Up Services

To request specimen collection, please call 04- 3987311

Supplies

All fundamental consumables, such as blood sample tubes, containers, swabs, request forms, and zip-lock plastic bags, are available for ordering from AMCEN LAB.

Collection of Specimens & Specimen Storage

- Make sure to use the appropriate collection containers and gather a sufficient amount of specimens.
- Avoid utilizing collection containers or transport media that have expired for specimen collection.
- Do not store blood specimens in the freezer.
- If blood specimens are collected from patient during closing hours or in the evening, it's essential to ensure that the blood containers are packed and stored correctly.
- Laboratory results and reference ranges may vary between laboratories.
- Turnaround time (TAT) indicated are based on best estimated. TAT may be subject to updated without prior notice.
- Make sure that all tubes, containers, and request forms are appropriately labeled with a minimum of 2 identifiers.
- Fill up the citrate and EDTA specimens to the volume mark available on the tube to ensure the correct anticoagulant to specimen ratio.

SERVICE INFORMATION

Request Form

Each specimen must be accompanied by a request form containing relevant patient information. Mandatory details on the request form include:

- a) Full Name & NRIC or Passport Number;
- b) Date of Birth & Gender;
- c) Nationality;
- d) Collection Date & Time;
- e) Clinic Name & Ordering Doctor;
- f) Specimen Status (Fasting or non-fasting);
- g) Diagnosis or Clinical History (Where Applicable)

Specimen Packing

a. Clinical specimens must be packaged to avoid leakage and for shock absorption during transport. In general the basic triple packaging system should be adopted.

b. Triple packaging system

- All specimens shall be collected in a primary container that is watertight and leak proof. The cap should be correctly and secured closed. As far as practicable, the primary containers should be kept in an upright position in a rack during transport.
- The primary container shall be put into a secondary container that is watertight. Secondary containers have to be cleaned and disinfected if they are to be re-used.
- Examples of secondary containers are:
 - Disposable, zip-lock plastic bags
 - Large centrifuge tubes (50ml) with screw caps.
- Do not stick the specimen on the request form. Specimen request forms should be put in the carrying pocket of the zip-lock plastic bag.

c. A polystyrene box with ice pax to house the secondary package.

Follow-up Sample

Follow-up samples should be dispatched within a timeframe of 3-7 days. For patients who missed their previous visit, accompanying the samples must be a request form clearly written tests to be conducted.

Specimen Rejection Policy

Inappropriate or inadequate specimens or test requests will be rejected accordingly, such as but not limit to:

1. Leakage / broken container
2. Wrong sample
3. Specimen wrongly labeled / mislabelled / unlabelled specimen
4. Insufficient specimen
5. Type of request not clear
6. Clotted specimen
7. Particulars incomplete:
 - i. Patient name not written / not clearly written
 - ii. No requestor stamp / Doctor incharge
 - iii. Improper ID or passport number
8. Specimen received in non-sterile container / incorrect container / incorrect anticoagulant
9. Aged specimen or deteriorated specimen
10. Lyse or lypemic or contaminated blood
11. Specimen not attached with requisition form
12. Test not offered
13. Dry swab received
14. Duplicate order



Unlabelled specimen



Insufficient sample volume
(Volume not to the mark)



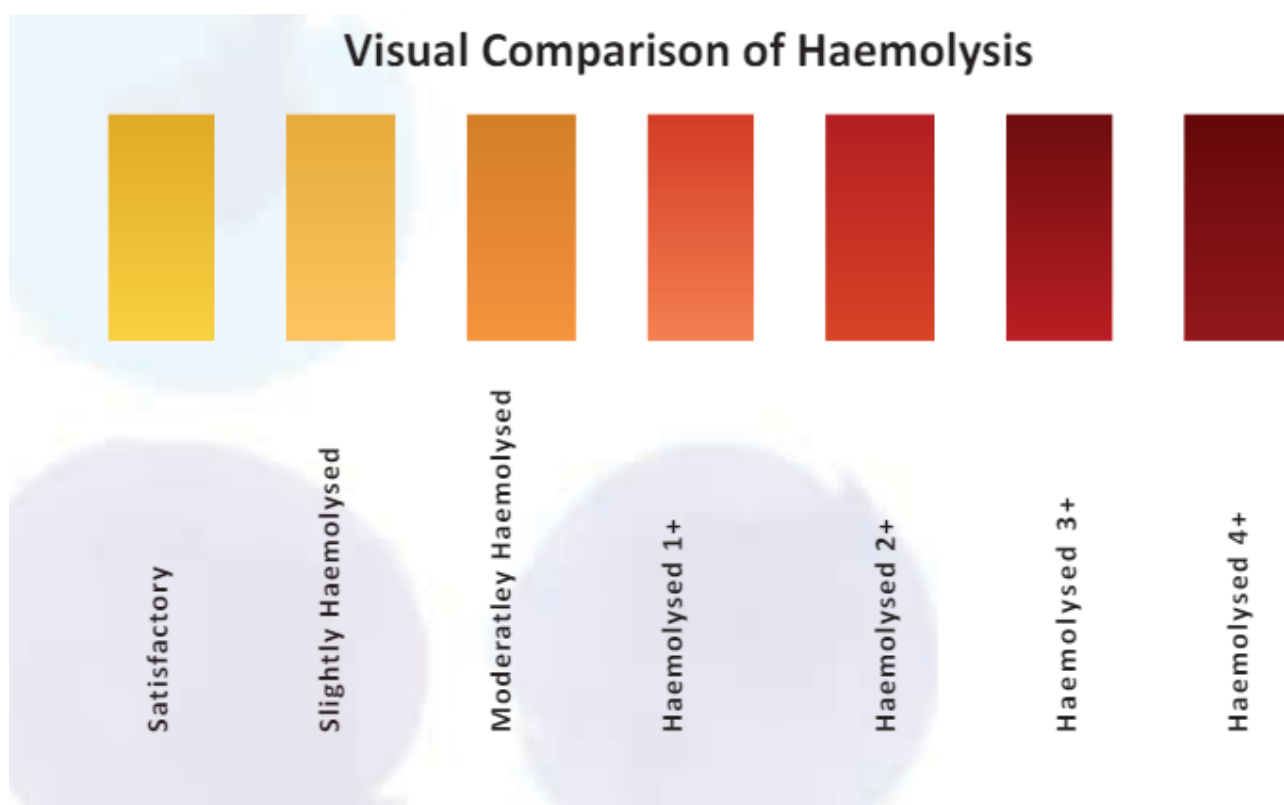
Contaminated sample / request form
Leaked/ Spilled Sample



Incorrectly labelled specimens

Haemolysis

Difficult blood collection may induce red cell lysis (haemolysis) that may not be apparent at the time of collection and only manifest much later when sample is being submitted to the reference lab. Haemolysis interferes with some analysis in haematology, chemistry and PCR thus hemolysed samples may be rejected. For serum check the chart below for assessing haemolysis after centrifuging.



SPECIMEN COLLECTION & HANDLING

Preserving the integrity of the sample is essential to guarantee the accuracy of the test results. It's crucial to adhere to the specified requirements for sample collection and handling. This includes ensuring sufficient volumes are collected from each patient and following patient preparation instructions, such as fasting, in accordance with the test requirements. Failure to comply with these protocols may compromise the accuracy of the results, potentially leading to erroneous diagnoses or treatment decisions.

Adhering to proper phlebotomy techniques is crucial for preventing inaccurate test results:

1. Limiting tourniquet application to less than 1 minutes helps to prevent hemolysis. Prolonged tourniquet use can lead to hemoconcentration, where blood pools at the venipuncture site. This may result in falsely elevated levels, particularly of potassium.
2. Collect all tubes in the correct order and gently invert them for proper mixing of additives or anticoagulants. Even when using a syringe and needle for direct venipuncture, transfer blood into tubes in the correct order to avoid anticoagulant contamination.
3. It's essential to fill all collection tubes with the specified volume, which is marked by the black and white notches on the side of the label.
4. Avoid using tubes that have expired.



ORDER OF DRAW - VACUTAINER TUBES

Collection Tube	Tube Content	Determinations	Instructions
 Blue	Sodium Citrate	Coagulation Test	Allow tube to fill completely. Tube inversion x 4
 Red	Plain	Serum Chemistry, Immunology & Serology	Tube inversion x 5
 Gold	Plain with Gel	Serum Chemistry, Immunology & Serology	Tube inversion x 5
 Green	Lithium Heparin	Ammonia, Blood lead,	Tube inversion x 8
 Lavender	K2 EDTA	Full Blood Count, HbA1C,	Tube inversion x 8
 Grey	Sodium Fluoride	Glucose	Tube inversion x 8

SPECIMEN COLLECTION & HANDLING

OTHER COLLECTION TUBES

Description	Type	Determinations
Urine Container (50ml)	Sterile plastic container with screw cap	Analysis of urine
Pap Smear Kit	Slide holder with a glass slide and wooden spatula (write patient's name on frosted end of slide in pencil)	Conventional pap smear

MID-STREAM URINE (MSU) SPECIMENS

- Wash and dry hands thoroughly.
- Remove lid on container and set it aside. Do not touch the inner surface of the lid or container.
- Cleanse the urinary opening. Women should spread the labia and clean from front to back. Men should wipe the tip of the penis.
- Pass a small amount of urine into the toilet.
- Midway through urination, fill the container to half full.
- Replace the lid and tighten firmly.
- Wash and dry hands thoroughly.
- Enclose container in plastic biohazard bag.

Cytology

Rapid fixation of smears is vital to maintain cytological detail. If smears dry on slides before fixation, cells can become markedly distorted. For smear preparations like cervical specimens, it's crucial to promptly fix them in a solution of 95% ethyl alcohol or a coating fixation like cytofix. Alternatively, can use other commercial spray fixatives. When using spray fixatives, ensure the smear dries for 10 minutes before placing it into slide holders for dispatch to the laboratory.

COMPLAINT & FEEDBACK

Users wishing to raise a complaint or provide a feedback to the department may do so by scanning the QR code below and fill up details:



Complaint Procedure

Dissatisfied with our service?

We hope not of course, but sometimes things do not go as planned



How to file a complaint

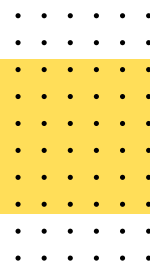
Fill up the detail at <https://amcal.com.my/feedback/>



Solving your complaint

Your complaint will be examined by us and we will try to solve it.
You will receive a reaction within 24hours and resolve within 7 working days

BIOCHEMISTRY



Test Description	Specimen Requirements	TAT
Albumin	4ml Plain (Gel-Yellow)	1-3 days
ALP (Alkaline Phosphatase)	4ml Plain (Gel-Yellow)	1-3 days
ALT (Alanine Aminotransferase) / SGPT	4ml Plain (Gel-Yellow)	1-3 days
AST (Aspartate Aminotransferase) / SGOT	4ml Plain (Gel-Yellow)	1-3 days
Bilirubin Adult (Total) Adult Conjugated (Direct / Indirect / Total)	4ml Plain (Gel-Yellow)	1-3 days
BUN (Urea & Creatinine)	4ml Plain (Gel-Yellow)	1-3 days
Calcium, Total	4ml Plain (Gel-Yellow)	1-3 days
Chloride	4ml Plain (Gel-Yellow)	1-3 days
Cholesterol , HDL	4ml Plain (Gel-Yellow)	1-3 days
Cholesterol, LDL	4ml Plain (Gel-Yellow)	1-3 days
Cholesterol, Total	4ml Plain (Gel-Yellow)	1-3 days
Creatinine	4ml Plain (Gel-Yellow)	1-3 days
Electrolytes (Na, K+ & Cl-)	4ml Plain (Gel-Yellow)	1-3 days
GGT (Gamma-Glutamyl Transferase)	4ml Plain (Gel-Yellow)	1-3 days
Glucose	2ml Fluoride Oxalate (Grey)	1-3 days
Glucose Tolerance Test – Fasting & 2hr	2ml Fluoride Oxalate (Grey)	1-3 days
Haemoglobin A1c (HbA1c)	3ml EDTA (Purple)	1-3 days
Iron (Fe)	4ml Plain (Gel-Yellow)	1-3 days
Phosphate	4ml Plain (Gel-Yellow)	1-3 days
Potassium	4ml Plain (Gel-Yellow)	1-3 days
Protein, Total	4ml Plain (Gel-Yellow)	1-3 days
Sodium (Na+)	4ml Plain (Gel-Yellow)	1-3 days
Triglycerides	4ml Plain (Gel-Yellow)	1-3 days
Urea	4ml Plain (Gel-Yellow)	1-3 days
Uric Acid	4ml Plain (Gel-Yellow)	1-3 days

A 10x6 grid of dots. The grid is composed of 10 rows and 6 columns of dots. The middle four rows (rows 3, 4, 5, and 6) are shaded yellow. The dots are arranged in a regular pattern, with one dot in each cell of the grid.

A 10x6 grid of dots. The grid is composed of 10 rows and 6 columns of dots. The middle four rows (rows 3, 4, 5, and 6) are shaded yellow. The top row (row 1) and the bottom row (row 10) are not shaded. The dots are arranged in a regular grid pattern.

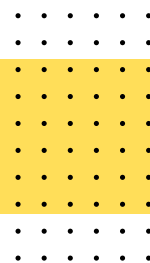
A 10x6 grid of dots. The grid is composed of 10 rows and 6 columns of dots. A yellow shaded region covers the middle 6 rows (rows 2 through 7, assuming the top row is row 1). The dots in the top and bottom rows (rows 1 and 8) are black. The dots in the shaded rows (rows 2 through 7) are also black, but the background of these rows is yellow.

[illegible]

A 10x6 grid of dots. The grid is composed of 10 rows and 6 columns of dots. The middle four rows (rows 3, 4, 5, and 6) are shaded yellow. The dots are arranged in a regular pattern, with one dot in each cell of the grid.

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INDUSTRY TESTING / HEAVY METAL

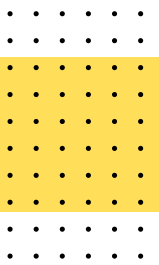


Test	Specimen Requirements	TAT
1,6-Hexamethylene Diamine	20ml Random Urine	7 days
2,5-Hexanedione	20ml Random Urine	7 days
Acetone	20ml Random Urine	7 days
Aluminium (Al) Blood Urine	5ml Lithium Heparin (Green) 20ml Random Urine	7 days
Arsenic (As) Blood Urine	5ml Lithium Heparin (Green) 20ml Random Urine	7 days
Barium (Ba) Blood Urine	5ml Lithium Heparin (Green) 20ml Random Urine	7 days
Beryllium (Be) Blood Urine	5ml Lithium Heparin (Green) 20ml Random Urine	7 days
Cadmium (Cd) Blood Urine	5ml Lithium Heparin (Green) 20ml Random Urine	7 days
Chromium (Cr) Blood Urine	5ml Lithium Heparin (Green) 20ml Random Urine	7 days
Copper (Cu) Blood Urine	5ml Lithium Heparin (Green) 20ml Random Urine	7 days
Cobalt (Co) Blood Urine	5ml Lithium Heparin (Green) 20ml Random Urine	7 days
Hippuric acid	20ml Random Urine	7 days
Iron (Fe) Blood Urine	5ml Lithium Heparin (Green) 20ml Random Urine	7 days
Lead (Pb) Blood Urine	5ml Lithium Heparin (Green) 20ml Random Urine	7 days
Manganese (Mn) Blood Urine	5ml Lithium Heparin (Green) 20ml Random Urine	7 days

INDUSTRY TESTING / HEAVY METAL

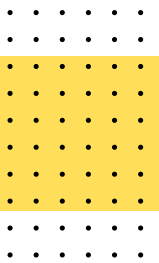
Test	Specimen Requirements	TAT
Mandelic acid	20ml Random Urine	7 days
Methanol	20ml Random Urine	7 days
Methyl Ethyl Ketone (MEK)	20ml Random Urine	7 days
Mercury (Hg) Blood Urine	5ml Lithium Heparin (Green) 20ml Random Urine	7 days
Methylhippuric acid	20ml Random Urine	7 days
Molybdenum (Mo) Blood Urine	5ml Lithium Heparin (Green) 20ml Random Urine	7 days
Nickel (Ni) Blood Urine	5ml Lithium Heparin (Green) 20ml Random Urine	7 days
Phenol	20ml Random Urine	7 days
Phenylglyoxylic acid	20ml Random Urine	7 days
Platinum (Pt) Blood Urine	5ml Lithium Heparin (Green) 20ml Random Urine	7 days
Silver (Ag) Blood Urine	5ml Lithium Heparin (Green) 20ml Random Urine	7 days
S-Phenylmercapturic Acid	20ml Random Urine	7 days
Strontium (Sr) Blood Urine	5ml Lithium Heparin (Green) 20ml Random Urine	7 days
Titanium (Ti) Blood Urine	5ml Lithium Heparin (Green) 20ml Random Urine	7 days
Tin (Sn) Blood urine	5ml Lithium Heparin (Green) 20ml Random Urine	7 days
Toluene Diamine	20ml Random Urine	7 days
Toluene Blood Urine	20ml Random Urine	7 days
Zinc (Zn)	20ml Random Urine	7 days

CYTOLOGY



Test	Specimen Requirements	TAT
Pap Smear (Conventional)	Please use spatula with cytobrush, label & fix slide with cytospray	1 week

HORMONE



Test	Specimen Requirements	TAT
FT3 (Free Tri-iodo Thyronine)	4ml Plain (Gel-Yellow)	3-5 days
FT4 (Free Thyroxine)	4ml Plain (Gel-Yellow)	3-5 days
Thyroid Stimulating Hormone (TSH)	4ml Plain (Gel-Yellow)	3-5 days



**24, TINGKAT TALANG 1, TAMAN EMAS,
13600 PERAI, PULAU PINANG**



04-3987311



ENQUIRY@AMCEN.COM.MY

OPERATION HOURS:

MONDAY TO FRIDAY: 8:30 A.M. TO 6:00 P.M.

SATURDAY, SUNDAY & PH: CLOSED

