MS ISO 15189:2022
MS ISO 9001:2015

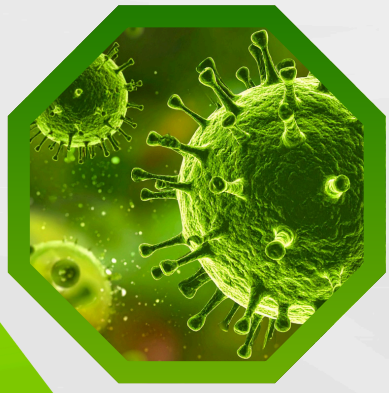
GeneFlux®

GENEFLUX BIOSCIENCES

SERVICE CATALOGUE

PASSION FOR SCIENCE
SCIENCE IN ACTION

VERSION 1/2026
01012026



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Introduction

Welcome to Geneflux Biosciences

To Our Valued Clients,

Ever since our establishment, Geneflux Biosciences emphasized Quality as our core value and we aim to deliver accurate results on time. We understand that our services are not only business, but are also critical towards patient care.

As part of the Malaysian Society for Quality in Health (MSQH) and MS ISO 15189 accreditation requirements, Geneflux Biosciences continuously participated in strict External Quality Assurance programs. In addition, all our tests are validated through daily quality control panels to ensure that results released are of the highest quality and reliability. Our dedications to provide services that add value to our clients are all part of our caring from the heart practices across the group.

We encourage any feedback and welcome you to contact us for further information. In improving our services we believe that communication between our clients and us are essential. Thank you for engaging in our services.

Vision

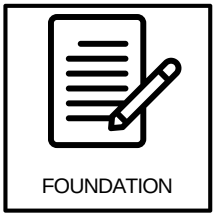
To provide diagnostic services
- ✔ Equitable
- ✔ Affordable
- ✔ Efficient
- ✔ Technologically appropriate
- ✔ Environmentally adaptable
- ✔ Customer-friendly

Mission

- ✔ To discover and develop novel biotechnological approaches for the betterment of mankind, plants and animal.
- ✔ To create and or improve a quality health system by integration of principles of life and medical sciences.
- ✔ To build partnerships for developing molecular diagnostic kits and biochips for screening and detection of infections and coronary/metabolism diseases.
- ✔ To provide “Point Of Care” services to the people to sustain their health status, so that they can enjoy a better quality of life.

Corporate Overview

Geneflux Biosciences Sdn. Bhd.
Company registration number: 0769382V / 200701011378



April 13, 2007

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Bandar Puchong Jaya, 47100 Puchong,
Selangor Darul Ehsan, Malaysia

Tel : +603-8070 1154
Fax : +603-8070 3654
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www.geneflux.com.my

Certifications

BioNexus Status Company Award by Biotech Corp, 2008

Enrolment Certificate by RCPA, Quality Assurance Programs PTY Limited, Australia for Microbiology, Serology

Best Practices Award by Frost & Sullivan, 2010

Certificate of Achievement in “Pre-Commercial validation of MyDENkit ” by MOSTI, 2008

MS ISO 9001: 2015

ISO 13485: 2003

MS ISO/IEC 17025: 2005

MS ISO 15189:2022

GDPMD

MDA

QCMD

Milestones

2007

Established in Malaysia and India.

2008

Set-up Biotechnology and Molecular Pathology Laboratory in Enterprise 4, Technology Park Malaysia (TPM), Malaysia.

MOSTI (Ministry of Science, Technology and Innovation, Government of Malaysia) recognized and awarded Technofund-Pre-commercialization grant for the project entitled “Pre-commercial validation of MyDENKitTM in six locations across different countries in the world”.

BioNexus status awarded by Biotech Corp (Malaysian Biotechnology Corporation), Ministry of Finance, Government of Malaysia.

2009

Biotech Corp awarded Seed Grant for setting up of manufacturing facility for production of Molecular diagnostics kits and marketing of test kits.

Set-up and launch of “Molecular Diagnostic Laboratory” as per International Standard requirements.

2011

Achieved certification of ISO 9001: 2008 for “Provision of Molecular Diagnostic Services and Manufacturing Diagnostics Kits” by ACS Registrars Limited, United Kingdom.

Recipient of Frost & Sullivan’s “2010 Asia Pacific Frost & Sullivan Niche Company of the year Award in Molecular Diagnostics”.

2012

Accreditation of MS ISO/IEC 17025: 2005 for laboratory quality management system (Field of Testing: Nucleic acid assay) by Department of Standards Malaysia, Malaysia.

Recipient of Frost & Sullivan’s award as “2012 Frost & Sullivan South East Asian Fastest Growing Company in Molecular Diagnostics for Infectious Disease”.

Achieved certification of ISO 13485: 2003 for “Design, Development, Manufacturing of Diagnostic Kits and Molecular Diagnostic Services” by Alberk QA International Technical Control and Certification Limited.

2018

Achieved certification of ISO 9001: 2015 for “Provision of Molecular Diagnostic Services”.

Accreditation of MS ISO 15189: 2014 for “Medical laboratories - Requirements for quality and competence”.

2020

Established routine laboratory consisting of Hematology, Biochemistry, Immunoassay and Urine Analysis sections.

Chosen as one of the laboratories to run Covid-19 specimens from Makmal Kesihatan Awam Kebangsaan (MKAK).

2025

Transition to MS ISO 15189: 2022 for “Medical laboratories - Requirements for quality and competence”.

Services

Molecular Diagnostics

Molecular diagnostics testing uses sensitive and specific clinical laboratory techniques to detect and identify biomarkers at the most basic level, that of nucleic acids (DNA and RNA). Common applications of molecular methods include medical diagnosis, establishing prognosis, monitoring the course of disease, and selecting optimal therapies.

Respiratory, blood-borne, herpes, sexually-transmitted infections, tropical diseases, fever panels, gastro-intestinal infections and methicillin-resistant *Staphylococcus aureus* (MRSA) can all be identified faster and more accurately using molecular techniques as compared to traditional culture or antibody assays.

Food Intolerance

Food intolerance also known as food sensitivity can result from your body reacting adversely to certain foods. Often the foods we include regularly in our diet, maybe the ones causing the problem. Research has shown that food intolerance can be linked to IgG antibodies produced when these “problem” foods are eaten. Normally these antibodies do not have any ill-effects, but if the immune or digestive system are not working efficiently their presence may cause a wide range of symptoms.

Research

We foresee conducting comprehensive research initiatives in areas including Tuberculosis (TB), Cancer, and Genetic Screening to advance medical knowledge and improve patient outcomes.

Information

1. Special instructions

- All swabs must be placed in Universal Transport Medium (UTM)
- Swabs in gel are not suitable for PCR
- All samples shall be transported at 4°C - 8°C
- All samples should reach lab within 24 hours
- Any sample or fluid to be collected in sterile, leak proof container; the cap should be tightened and sealed with parafilm

2. Rejection criteria of samples

Samples that fall into the following criteria will be rejected by laboratory:

- Insufficient volume of sample
- Spillage
- Empty container
- Test request form missing
- Incomplete test request form
- Sample without label (patient details)
- Mislabeled specimen
- Unsuitable sample (incorrect sample for test requested)
- Haemolyzed
- Clotted sample
- Cloudy or Yellow UTM (Universal Transport Medium)

3. Turnaround Time (TAT) for Urgent Samples

- For **Urgent Samples**, the results will be released within **24 hours** upon the receipt of the sample at the laboratory. A **double charge** for the payment shall be imposed.
- Delay in reporting shall be expected when there is a need to repeat the test.
- Excluding Saturday, Sunday and Public Holidays.

4. Collection of samples

Collection of samples will be between 8.00 AM to 5.30 PM, including Saturday, Sunday and Public Holidays. The **cut-off time to request for collection of samples** is as follows:

MONDAY-SATURDAY	Morning: 11:30 AM Evening: 04:30 PM
SUNDAY and PUBLIC HOLIDAYS	Morning: 11:00 AM Evening: 04:30 PM

5. Oral request

- All phone or verbal request for additional test request should be followed with written request form as confirmation.
- The test will not be proceeded before reception of form.
- Additional testing is only considered upon availability of sample, suffiicient sample volume and suitable sample condition.

6. Cut-off Time

Respiratory Panels PCR Cut-off Time

Test Code	PCR Test	TAT for MONDAY - SATURDAY
GF-RPP36 GF-RV19 GF-RB7 GF-H1N1-FLU A/B GF-RP26	Respiratory Pathogen Panel 36 Respiratory Viruses 19 Respiratory Bacterial 7 Influenza A,B & RSV Panel Respiratory Panel Assay	For samples that reach the lab before 01:00 PM, the results will be released on the same day before 06:00 PM.
		For samples that reach the lab after 01:00 PM, the results will be released on the next day before 06:00 PM.

Test Code	PCR Test	TAT for SUNDAY and PUBLIC HOLIDAYS
GF-RPP36 GF-RV19 GF-RB7 GF-H1N1-FLU A/B GF-RP26	Respiratory Pathogen Panel 36 Respiratory Viruses 19 Respiratory Bacterial 7 Influenza A,B & RSV Panel Respiratory Panel Assay	For samples that reach the lab before 12:00 PM, the results will be released on the same day before 06:00 PM.
		For samples that reach the lab after 12:00 PM, the results will be released on the next day before 06:00 PM.

Covid-19 PCR Cut-off Time

Test Code	PCR Test	TAT
GF-COV19	Covid-19	**MONDAY - SATURDAY** For samples that reach the lab before 04:00 PM, the results will be released on the same day before 06:00 PM. For samples that reach the lab after 04:00 PM, the results will be released on the next day before 06:00 PM.
		SUNDAY and PUBLIC HOLIDAYS URGENT samples must reach the lab before 12:00 PM and the results will be released on the same day before 06:00 PM.

Bloodborne & Herpes Viral Tests and Sexually Transmitted Infections Panels Cut-off Time

Test Code	PCR Test	TAT
GF-BKJC	BK & JC Detection & Quantitation	Scheduled days for PCR run: **Monday**, **Wednesday** and **Friday** morning. For samples that reach the lab before 09:00 AM on the scheduled day, the results will be released on the same day before 06:00 PM. For samples that reach the lab after 09:00 AM on the scheduled day, the results will be released on the following scheduled day before 06:00 PM.
GF-CMV	Cytomegalovirus Detection & Quantitation	
GF-EBV	Epstein Barr Virus (EBV) Detection & Quantitation	
GF-HSV	Herpes Simplex Virus Detection, Typing & Quantitation	
GF-VZV	Varicella Zoster Virus Detection & Quantitation	
GF-HBV	Hepatitis B virus Detection & Quantitation	
GF-HCV	Hepatitis C virus Detection & Quantitation	
GF-HBV-HCV	Hepatitis B and Hepatitis C Combo Test Virus Detection & Quantitation	
GF-IMSP1	Immunosuppressed Panel 1 Detection & Quantitation of: BK & JC CMV EBV	
GF-IMSP2	Immunosuppressed Panel 2 Detection & Quantitation of: CMV EBV	
GF-IMSP3	Immunosuppressed Panel 3 Detection & Quantitation of: CMV HSV VZV	
GF-EP1	Eye Panel 1 Cytomegalovirus (CMV) Detection & Quantitation Varicella Zoster Virus (VZV) Detection & Quantitation Herpes Simplex Virus (HSV) Detection, Typing & Quantitation	
GF-EP2	Eye Panel 2 Cytomegalovirus (CMV) Detection & Quantitation Varicella Zoster Virus (VZV) Detection & Quantitation Herpes Simplex Virus (HSV) Detection, Typing & Quantitation Epstein Barr Virus (EBV) Detection & Quantitation	

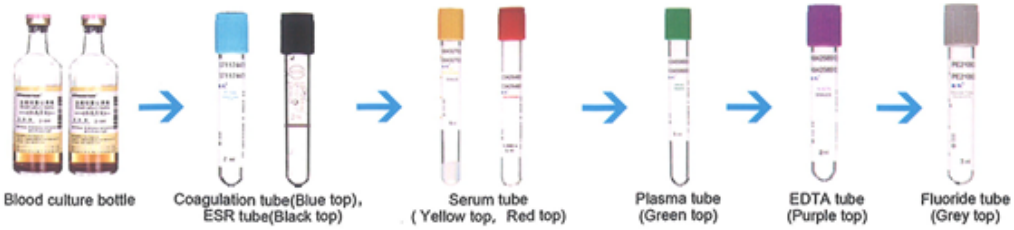
Bloodborne & Herpes Viral Tests and Sexually Transmitted Infections Panels Cut-off Time

Test Code	PCR Test	TAT
GF-CSF1	Cerebrospinal Fluid Panel 1 Cytomegalovirus (CMV) Detection & Quantitation Varicella Zoster Virus (VZV) Detection & Quantitation Herpes Simplex Virus (HSV) Detection, Typing & Quantitation	Scheduled days for PCR run: **Monday**, **Wednesday** and **Friday** morning. For samples that reach the lab before 09:00 AM on the scheduled day, the results will be released on the same day before 06:00 PM. For samples that reach the lab after 09:00 AM on the scheduled day, the results will be released on the following scheduled day before 06:00 PM.
GF-CSF2	Cerebrospinal Fluid Panel 2 Cytomegalovirus (CMV) Detection & Quantitation Varicella Zoster Virus (VZV) Detection & Quantitation Herpes Simplex Virus (HSV) Detection, Typing & Quantitation Epstein Barr Virus (EBV) Detection & Quantitation	
GF-STI7	*Chlamydia trachomatis* *Neisseria gonorrhoea* *Trichomonas vaginalis* *Mycoplasma genitalium* *Mycoplasma hominis* *Ureaplasma urealyticum* *Ureaplasma parvum*	
GF-STI8	*Chlamydia trachomatis* *Neisseria gonorrhoea* *Trichomonas vaginalis* *Mycoplasma genitalium* *Mycoplasma hominis* *Ureaplasma urealyticum* *Ureaplasma parvum* Human Papillomavirus	
GF-STI9	*Chlamydia trachomatis* *Neisseria gonorrhoea* *Trichomonas vaginalis* *Mycoplasma genitalium* *Mycoplasma hominis* *Ureaplasma urealyticum* *Ureaplasma parvum* HSV-1, HSV-2	
GF-STI10	*Chlamydia trachomatis* *Neisseria gonorrhoea* *Trichomonas vaginalis* *Mycoplasma genitalium* *Mycoplasma hominis* *Ureaplasma urealyticum* *Ureaplasma parvum* HSV-1, HSV-2 Human Papillomavirus	

7. Consumables

Consumables	Description	Use
	Sterile Urine Container	Urine chemistry
	K2 EDTA Tube	Food intolerance test and molecular tests
	Sodium Fluoride Tube	Glucose test
	Plain Tube with Gel	Tumor markers and serology tests
	Serum/ Universal Transport Media (UTM)/ Viral Transport Media (VTM) and Swab	Antibody identification and viral or bacterial PCR
	Syringe with Needle	CSF and eye fluid related PCR tests

8. Order of draw



9. Storage, retention and disposal of clinical samples

- According to Guidelines on Retention of Pathology Records and Materials, (Version 2/2022).

10. Protection of personal information

- It is the organization policy that all results and patient details will be treated as private and confidential.
- All specimens and the test results will be handled with more caution especially communicable diseases such as HIV and others.
- Once the hard copy reports is successfully sent and acknowledged by client, it is considered the belonging of the client. Kindly manage it by following standard guideline (Personal Data Protection Act 2010 (PDPA)).
- Do not recycle the unused laboratory report for any purposes.

11. Price

All prices mentioned in the service catalogue are subject to change.

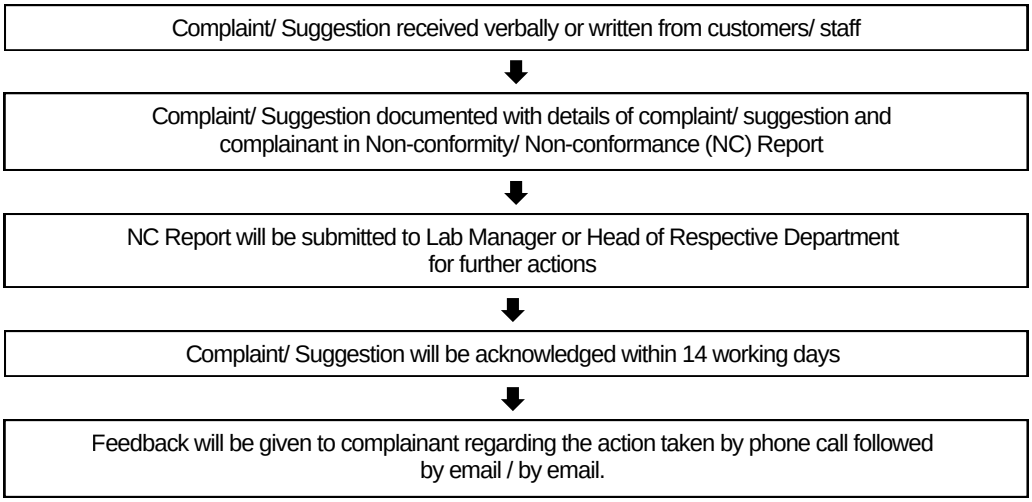
12. Billing & payment

- Credit term is 30 days from the date of invoice or as specified in respective service agreement.
- Please verify all invoices upon receipt, and do contact us @ 03-8070 1154 for enquiries or discrepancies, otherwise it will be deem enforced and accepted.
- All cheques should be made payable to GENEFLUX BIOSCIENCES SDN BHD. Do insist on an Official Receipt for all cash payments made.

13. Complaint

If you have any comments or concerns, please don't hesitate to contact us at 03-80701154. Your feedback is important to us as we strive to continually improve and provide the highest quality healthcare services.

Management of Complaint and Suggestion



Respiratory Tests

Test Code	PCR Test	TAT	Specimen
GF-RPP36	Respiratory Pathogen Panel 36 <u>Viruses</u> Influenza virus A (covering H1N1-2009, H7N9, H1N1, H3N2, H5N1) Influenza virus B (covering Victoria strain and Yamagata strain) Respiratory Syncytial Virus A Respiratory Syncytial Virus B Coronavirus 229E Coronavirus OC43 Coronavirus NL63 Coronavirus HKU1 Adenovirus (covering group B, C and E) Bocavirus Rhinovirus/Enterovirus Parainfluenza Virus I Parainfluenza Virus II Parainfluenza Virus III Parainfluenza Virus IV Human Metapneumovirus <u>Bacteria</u> *Escherichia coli* *Mycoplasma pneumoniae* *Chlamydia pneumoniae* *Streptococcus pneumoniae* *Klebsiella pneumoniae* *Legionella pneumophila* *Bordetella pertussis* *Staphylococcus epidermidis* *Salmonella* *Staphylococcus aureus* *Rickettsia* *Haemophilus influenzae* *Moraxella catarrhalis* *Acinetobacter baumannii* *Streptococcus pyogenes* *Pseudomonas aeruginosa* <u>Fungi</u> *Candida albicans* *Pneumocystis jirovecii* *Aspergillus fumigatus* *Cryptococcus*	Within 24 hours	• Sputum (1-3 mL) • Nasal swab in UTM (1-3 mL) • Throat swab in UTM (1-3 mL) • Nasal and throat swab in UTM (1-3 mL) • Bronchoalveolar lavage fluid in sterile container (1-3 mL) • Tracheal aspirate in sterile container (1-3 mL) • Nasopharyngeal swab in UTM (1-3 mL) • Nasopharyngeal aspirate in sterile container (1-3 mL)

Test Code	PCR Test	TAT	Specimen
GF-RP26	Respiratory Panel Assay Influenza A virus (Flu A) Influenza B virus (Flu B) Respiratory Syncytial Virus A (RSV A) Respiratory Syncytial Virus B (RSV B) Flu A-H1 Flu A-H1pdm09 Flu A-H3 Adenovirus Enterovirus Parainfluenza Virus (1,2,3,4) Metapneumovirus Bocavirus Rhinovirus Coronavirus (NL63,OC43,229E) *Mycoplasma pneumonia* *Chlamydophila pneumonia* *Legionella pneumophila* *Streptococcus pneumonia* *Bordetella pertussis* *Bordetella parapertussis* *Haemophilus influenzae*	Within 24 hours	• Sputum (1-3 mL) • Nasal swab in UTM (1-3 mL) • Throat swab in UTM (1-3 mL) • Nasal and throat swab in UTM (1-3 mL) • Bronchoalveolar lavage fluid in sterile container (1-3 mL) • Tracheal aspirate in sterile container (1-3 mL) • Nasopharyngeal swab in UTM (1-3 mL) • Nasopharyngeal aspirate in sterile container (1-3 mL)
GF-RV19	Respiratory Viruses 19 Adenovirus Influenza A virus (Flu A) Influenza B virus (Flu B) Parainfluenza virus (1,2,3,4) Rhinovirus A/B/C Respiratory syncytial virus A (RSV A) Respiratory syncytial virus B (RSV B) Bocavirus 1/2/3/4 Metapneumovirus Coronavirus (NL63,OC43,229E) Enterovirus	Within 24 hours	• Sputum (1-3 mL) • Nasal swab in UTM (1-3 mL) • Throat swab in UTM (1-3 mL) • Nasal and throat swab in UTM (1-3 mL) • Bronchoalveolar lavage fluid in sterile container (1-3 mL) • Tracheal aspirate in sterile container (1-3 mL) • Nasopharyngeal swab in UTM (1-3 mL) • Nasopharyngeal aspirate in sterile container (1-3 mL)
GF-RB7	Respiratory Bacterial 7 *Mycoplasma pneumonia* *Chlamydia pneumonia* *Legionella pneumophila* *Bordetella pertussis* *Bordetella parapertussis* *Haemophilus influenza* *Streptococcus pneumoniae*	Within 24 hours	• Sputum (1-3 mL) • Nasal swab in UTM (1-3 mL) • Throat swab in UTM (1-3 mL) • Nasal and throat swab in UTM • (1-3 mL) • Bronchoalveolar lavage fluid in sterile container (1-3 mL) • Tracheal aspirate in sterile container (1-3 mL) • Nasopharyngeal swab in UTM • (1-3 mL) • Nasopharyngeal aspirate in sterile container (1-3 mL)

Test Code	PCR Test	TAT	Specimen
GF-MTB-NTM	Detection of *Mycobacterium tuberculosis* and Non-tuberculosis Mycobacteria *M. avium* *M. smegmatis* *M. simiae* *M. fortuitum* *M. szulgai* *M. bovis* *M. lentiflavum* *M. marinum / M. ulcerans* *M. malmoense* *M. scrofulaceum* *M. gordonae* *M. terrae* *M. xenopi* *M. tuberculosis / M. africanum / M. microti* *M. kansasii* *M. nonchromogenicum* *M. intracellulare* *M. chelonae* *M. abscessus* *Mycobacterium* genus* *Mycobacteria species detected but not able to be differentiated: *M. gastri / M. shimoidei / M. triviale / M. farcinogenes / M. asiaticum / M. phlei / M. thermoresistibile / M. aichiense / M. aurum / M. chubuense / M. duvalii / M. flavescens / M. gadium / M. gilvum / M. komossense / M. neoaurum / M. obuense / M. parafortuitum / M. rhodesiae / M. tokaiense / M. porcinum / M. pulveris / M. senegalense / M. fallax / M. agri / M. austroafricanum / M. diernhoferi / M. chitae / M. vaccae*	Within 3 working days	• Sputum in sterile container

Test Code	PCR Test	TAT	Specimen
GF-MTB	Detection of Mycobacterium tuberculosis	Within 3 working days	• Sputum in sterile container • Bronchial washing
GF-H1N1-FLU A/B	Influenza A, B & RSV Panel Influenza A virus (Flu A) Influenza B virus (Flu B) Respiratory syncytial virus A (RSV A) Respiratory syncytial virus B (RSV B) Subtype of Influenza: H1, H3, H1 2009 pdm	Within 24 hours	• Sputum (1-3 mL) • Nasal swab in UTM (1-3 mL) • Throat swab in UTM (1-3 mL) • Nasal and throat swab in UTM • (1-3 mL) • Bronchoalveolar lavage fluid in sterile container (1-3 mL) • Tracheal aspirate in sterile container (1-3 mL) • Nasopharyngeal swab in UTM • (1-3 mL) • Nasopharyngeal aspirate in sterile container (1-3 mL)
GF-H7N9	H7N9	Within 2 working days	• Sputum (1-3 mL) • Nasal swab in UTM (1-3 mL) • Throat swab in UTM (1-3 mL) • Nasal and throat swab in UTM (1-3 mL) • Bronchoalveolar lavage fluid in sterile container (1-3 mL) • Tracheal aspirate in sterile container (1-3 mL) • Nasopharyngeal swab in UTM (1-3 mL) • Nasopharyngeal aspirate in sterile container (1-3 mL)
GF-MCoV	MERS - CoV	Within 24 hours	• Sputum (1-3 mL) • Nasal and throat swab in UTM (1-3 mL) • Bronchoalveolar lavage fluid in sterile container (1-3 mL) • Tracheal aspirate in sterile container (1-3 mL) • Nasopharyngeal swab in UTM (1-3 mL) • Nasopharyngeal aspirate in sterile container (1-3 mL)
GF-COV19	Covid-19	Refer page 13	• Nasal and throat swab in UTM • (1-3 mL) • Nasopharyngeal swab in UTM (1-3 mL) • Oropharyngeal swab in UTM (1-3 mL) • Tracheal aspirate in sterile container (1-3 mL) • Bronchoalveolar lavage fluid in sterile container (1-3 mL) • Sputum (1-3 mL)

Bloodborne & Herpes Viral Tests

Test Code	PCR Test	TAT	Specimen
GF-BKJC	BK & JC Detection & Quantitation	Within 2 working days	• EDTA blood (3-5 mL) • Cerebrospinal fluid in sterile container (0.5-1 mL) • Urine in sterile container (3-5 mL)
GF-CMV	Cytomegalovirus Detection & Quantitation	Within 2 working days	• EDTA blood (3-5 mL) • Serum (3-5 mL) • Urine in sterile container (3-5 mL) • Eye vitreous fluid (min 0.2 mL) • Tissue biopsy (min 2 mm x 2 mm) • Amniotic fluid (min 0.2 mL) • Bronchoalveolar lavage fluid in sterile container (1-3 mL) • Cerebrospinal fluid in sterile container (1-3 mL) • Swab in UTM
GF-EBV	Epstein Barr Virus (EBV) Detection & Quantitation	Within 2 working days	• Plasma (3-5 mL) • EDTA blood (3-5 mL) • Cerebrospinal fluid in sterile container (1-3 mL) • Bronchoalveolar lavage fluid in sterile container (1-3 mL)
GF-HSV	Herpes Simplex Virus Detection, Typing & Quantitation	Within 2 working days	• Vesicle fluid (3-5 mL) • Vesicle swab from oral/ skin/ genital lesions in UTM (1-3 mL) • Throat swab in babies in UTM (1-3 mL) • High vaginal swab (1-3 mL) • Corneal swab in UTM • Corneal scraping • Eye vitreous fluid (min 0.2 mL) • Amniotic fluid (min 0.2 mL) • Cerebrospinal fluid in sterile container (1-3 mL) • Urine in sterile container (3-5 mL) • Serum (3-5 mL) • Plasma (3-5 mL)
GF-VZV	Varicella Zoster Virus Detection & Quantitation	Within 2 working days	• EDTA blood (3-5 mL) • Whole blood (3-5 mL) • Skin scraping/ scab • Vesicle fluid in sterile container (1-3 mL) • Vesicle swab from oral/ skin/ genital lesions in UTM (1 mL) • Amniotic fluid (min 0.2 mL) • Eye vitreous fluid (min 0.2 mL) • Cerebrospinal fluid in sterile container (1-3 mL) • Serum (3-5 mL) • Plasma (3-5 mL)

Test Code	PCR Test	TAT	Specimen
GF-HBV	Hepatitis B Virus Detection & Quantitation	Within 2 working days	• EDTA blood/ plasma (3-5 mL) • Serum (3-5 mL)
GF-HCV	Hepatitis C Virus Detection & Quantitation	Within 2 working days	• EDTA blood/ plasma (3-5 mL) • Serum (3-5 mL)
GF-HBV-HCV	Hepatitis B and Hepatitis C Combo Test Virus Detection & Quantitation	Within 2 working days	• EDTA blood/ plasma (3-5 mL) • Serum (3-5 mL)
GF-IMSP1	Immunosuppressed Panel 1 Detection & Quantitation of: BK & JC CMV EBV	Within 2 working days	• EDTA blood (2 x 3 mL) • EDTA plasma (3-5 mL)
GF-IMSP2	Immunosuppressed Panel 2 Detection & Quantitation of: CMV EBV	Within 2 working days	• EDTA blood (2 x 3 mL) • EDTA plasma (3-5 mL) • Bronchoalveolar lavage fluid in sterile container (1-3 mL)
GF-IMSP3	Immunosuppressed Panel 3 Detection & Quantitation of: CMV HSV VZV	Within 2 working days	• EDTA blood (2 x 3 mL) • EDTA plasma (3-5 mL) • Serum (3-5 mL)
GF-EP1	Eye Panel 1 Cytomegalovirus (CMV) Detection & Quantitation Varicella Zoster Virus (VZV) Detection & Quantitation Herpes Simplex Virus (HSV) Detection, Typing & Quantitation	Within 2 working days	• Eye vitreous fluid (min 0.2 mL) • Corneal scraping • Eye swab (swab in UTM)
GF-EP2	Eye Panel 2 Cytomegalovirus (CMV) Detection & Quantitation Varicella Zoster Virus (VZV) Detection & Quantitation Herpes Simplex Virus (HSV) Detection, Typing & Quantitation Epstein Barr Virus (EBV) Detection & Quantitation	Within 2 working days	• Eye vitreous fluid (min 0.2 mL) • Corneal scraping • Eye swab (swab in UTM)

Test Code	PCR Test	TAT	Specimen
GF-CSF1	Cerebrospinal Fluid Panel 1 Cytomegalovirus (CMV) Detection & Quantitation Varicella Zoster Virus (VZV) Detection & Quantitation Herpes Simplex Virus (HSV) Detection, Typing & Quantitation	Within 2 working days	• Cerebrospinal fluid in sterile container (2 mL)
GF-CSF2	Cerebrospinal Fluid Panel 2 Cytomegalovirus (CMV) Detection & Quantitation Varicella Zoster Virus (VZV) Detection & Quantitation Herpes Simplex Virus (HSV) Detection, Typing & Quantitation Epstein Barr Virus (EBV) Detection & Quantitation	Within 2 working days	• Cerebrospinal fluid in sterile container (2 mL)
GF-HIV	HIV detection and viral load	Within 7 working days	• EDTA blood/ plasma (3 x 3 mL)
GF-HIV-CD4/CD8	Combo HIV, CD4 and CD8	Within 8 working days	• EDTA blood (3 x 3 mL)

Sexually Transmitted Infections Panels

<table>
<tr><th>Test Code</th><th>PCR Test</th><th>TAT</th><th>Specimen</th></tr>
<tr><td>GF-STI7</td><td>Chlamydia trachomatis
Neisseria gonorrhoea
Trichomonas vaginalis
Mycoplasma genitalium
Mycoplasma hominis
Ureaplasma urealyticum
Ureaplasma parvum</td><td>Within 2 working days</td><td rowspan="4">For STI7/STI9
<u>In Male</u>
• Urethral swab in UTM (1mL)
• Early morning first void urine in sterile container

<u>In Female</u>
• Urethral swab in UTM (1mL)
• Endocervical swab in UTM
• High vaginal swab in UTM (1 mL)
• Pelvic peritoneal fluid at Laparoscope for infertility, PID cases (1 mL)
• Early morning first void urine in sterile container (5 mL)

<u>In both Gender</u>
• Pharyngeal swab in UTM
• Oral swab (dry swab)

For HPV
<u>In Male</u>
• Genital swab (dry swab)
• Oral swab (dry swab)

<u>In Female</u>
• Genital swab (dry swab)
• Oral swab (dry swab)
• Liquid based cytology specimen - ThinPrep (1-3 mL)</td></tr>
<tr><td>GF-STI8</td><td>Chlamydia trachomatis
Neisseria gonorrhea
Trichomonas vaginalis
Mycoplasma genitalium
Mycoplasma hominis
Ureaplasma urealyticum
Ureaplasma parvum
Human Papillomavirus (28 Genotypes)</td><td>Within 2 working days</td></tr>
<tr><td>GF-STI9</td><td>Chlamydia trachomatis
Neisseria gonorrhea
Trichomonas vaginalis
Mycoplasma genitalium
Mycoplasma hominis
Ureaplasma urealyticum
Ureaplasma parvum
HSV-1, HSV-2 (Detection & Quantitation)</td><td>Within 2 working days</td></tr>
<tr><td>GF-STI10</td><td>Chlamydia trachomatis
Neisseria gonorrhea
Trichomonas vaginalis
Mycoplasma genitalium
Mycoplasma hominis
Ureaplasma urealyticum
Ureaplasma parvum
HSV-1, HSV-2 (Detection & Quantitation)
Human Papillomavirus (28 Genotypes)</td><td>Within 2 working days</td></tr>
<tr><td>GF-HPV</td><td>Human Papillomavirus (28 Genotypes)

<u>19 High Risk- HPV</u>
16, 18, 26, 31, 33, 35, 39, 45, 51, 52, 53, 56, 58, 59, 66, 68, 69, 73, 82

<u>9 Low Risk- HPV</u>
6,11, 40, 42, 43, 44, 54, 61, 70</td><td>Within 2 working days</td><td><u>In Male</u>
• Genital swab (dry swab)
• Oral swab (dry swab)

<u>In Female</u>
• Genital swab (dry swab)
• High vaginal swab (dry swab)
• Paraffin embedded sections
• Liquid based cytology specimen e.g. ThinPrep and SurePath (1-3 mL)
• Oral swab (dry swab)</td></tr>
</table>

Fever Panel

Test Code	PCR Test	TAT	Specimen
GF-DEN	Dengue Virus Detection & Typing	Within 2 working days	• EDTA blood (2 x 3 mL) • EDTA plasma (2 mL) • Whole blood (2 x 3 mL) • Serum (2 mL)
GF-DEN-CHIK-ZIKA	Dengue Virus Detection Chikungunya Virus Detection Zika Virus Detection	Within 3 working days	
GF-MEL	Melioidosis *Burkholderia pseudomallei* Detection	Within 3 working days	• Plasma (3 mL) • EDTA blood (3-5 mL)
GF-LEPT	Leptospirosis *Leptospira* Detection	Within 3 working days	• EDTA blood/ plasma (3 mL) • Early morning first void urine in sterile container (5 mL)
GF-TFP	Tropical Fever Panel Leptospirosis (*Leptospira* spp.) Melioidosis (*Burkholdheria pseudomallei*) Typhoid (*Salmonella* spp.) Malaria (*Plasmodium* spp.) Dengue Virus Detection & Typing	Within 3 working days	• Plasma (3 mL) • EDTA blood (3-5 mL)

Gastrointestinal Panels

Test Code	PCR Test	TAT	Specimen
GF-HBP1	*Helicobacter pylori* & Antibiotic Resistance Genes Detection PCR Clarithromycin-23S rRNA Quinolone- gyr A Furazolidone- por D, oor D Amoxicillin- PBPS Tetracyline 16S rRNA	Within 2 working days	• Gastric mucosal biopsy
GF-HBP2	*Helicobacter pylori* & Antibiotic Resistance Genes Detection PCR & Gene Sequencing Metronidazole - frxA & rdxA Tetracycline 16S rRNA Clarithromycin - 23S rRNA Fluoroquinolone - gyrA & gyrB Amoxicillin - pbp1 Rifampicin - rpoB	Within 3 weeks	• Gastric mucosal biopsy in sterile container (min 2 mm x 2 mm) • Tissue biopsy in sterile container (min 2 mm x 2 mm)
GF/GI PANEL 1	**GF/GI PANEL 1: 22 Targets** <u>Bacterial Targets</u> 1. *Campylobacter spp.* (*C. jejuni, C. upsaliensis, C. coli*) 2. *Clostridium difficile* (Toxin A/B) 3. *Plesiomonas shigelloides* 4. *Salmonella spp.* 5. *Yersinia enterocolitica* 6. *Vibrio spp.* (*V. parahaemolyticus, V. vulnificus, V. cholerae*) 7. *Vibrio cholerae* <u>*E. coli / Shigella* Targets</u> 1. *E. coli* O157 2. Enteroaggregative *E. coli* (EAEC) 3. Enteropathogenic *E. coli* (EPEC) 4. Enterotoxigenic *E. coli* (ETEC) 5. Shiga-like toxin-producing *E. coli* (STEC) stx1/stx2 *E. coli* O157 6. *Shigella* / Enteroinvasive *E. col*i (EIEC) <u>Viral Targets</u> 1. Human Adenovirus F40/41 2. Astrovirus 3. Norovirus GI/GII 4. Rotavirus A 5. Sapovirus (GI, GII, GIV, GV) <u>Parasitic Targets</u> 1. *Cyclospora cayetanensis* 2. *Cryptosporidium spp.* 3. *Entamoeba histolytica* 4. *Giardia lamblia*	Within 3 working days	• Stool

Test Code	PCR Test	TAT	Specimen
GF/GI PANEL 2	**GF/GI PANEL 2: 24 Targets** <u>Bacterial Targets</u> 1. *Campylobacter spp.* (*C. jejuni, C. upsaliensis, C. coli*) 2. *Clostridium difficile* (tcdA/tcdB) 3. *Plesiomonas shigelloides* 4. *Salmonella spp*. 5. *Yersinia enterocolitica* 6. *Vibrio cholerae* 7. *Vibrio parahaemolyticus* 8. *Vibrio vulnificus* <u>*E. coli / Shigella* Targets</u> 1. Shiga-like toxin-producing *E. coli* (STEC) 2. Shiga-like toxin-producing *E. coli* (STEC) serotype O157:H7 3. Enteroaggregative *E. coli* (EAEC) 4. Enteropathogenic *E. coli* (EPEC) 5. Enterotoxigenic *E. coli* (ETEC) 6. *Shigella / Enteroinvasive E. coli* (EIEC) <u>Viral Targets</u> 1. Human Adenovirus F40/F41 2. Astrovirus 3. Norovirus GI 4. Norovirus GII 5. Rotavirus A 6. Sapovirus (GI, GII, GIV, GV) <u>Parasitic Targets</u> 1. *Cyclospora cayetanensis* 2. *Cryptosporidium spp.* 3. *Entamoeba histolytica* 4. *Giardia lamblia*	Within 3 working days	• Stool

Neurological Panel

Test Code	PCR Test	TAT	Specimen
GF-BRCL	*Brucella* Detection	Within 7 working days	• EDTA blood (3-5 mL) • Cerebrospinal fluid in sterile container (0.5-1 mL)
GF-ME	Meningitis/ Encephalitis Panel <u>Bacteria</u> *Escherichia coli* K1 *Haemophilus influenza* *Listeria monocytogenes* *Neisseria meningitides* *Streptococcus agalactiae* *Streptococcus pneumonia* <u>Viruses</u> Cytomegalovirus Enterovirus HSV-1, HSV-2 Human herpesvirus 6 Human parechovirus Varicella Zoster Virus <u>Yeast</u> *Cryptococcus neoformans/gattii*	Within 4 working days	• Cerebrospinal fluid in sterile container (0.5-1 mL)
GF-CNS	Detection of: HSV-1, HSV-2 VZV CMV EBV Enterovirus Adenovirus Parechovirus Human herpesvirus 6 Human herpesvirus 7 Parvovirus (B19) *Neisseria meningitidis* *Streptococcus pneumonia* *Haemophilus influenzae* *Streptococcus agalactiae* (Group B *Streptococcus*/ GBS) *Listeria monocytogenes* *Escherichia coli* Mumps	Within 7 working days	• Cerebrospinal fluid in sterile container (2 mL) • EDTA blood (3-5 mL)

Food Intolerance & Allergy Panel

Test Code	Test	TAT	Specimen
GF-AT(FD)	**Food Detective** Test reaction up to 59 types of foods Cereals: Corn, durum wheat, gluten, oats, rice, rye, wheat Nuts & beans: Almond, Brazil nut, cashew, cocoa bean, peanut, legume mix (pea, lentil, haricot), soya bean, walnut Meat: Beef, chicken, lamb, pork Fish: Tuna, fresh water fish mix (salmon, trout), shellfish mix (shrimp, prawn, crab, lobster, mussel), white fish mix (haddock, cod, plaice) Vegetables: Broccoli, cabbage, carrot, celery, leek, cucumber, potato, peppers (red, green, yellow) Fruits: Apple, blackcurrant, grapefruit, olive, orange, strawberry, tomato, lemon, melon mix (cantaloupe, watermelon) Other: Egg (whole), cow's milk, garlic, ginger, mushroom, tea, yeast	Within 2 working days	• 4 mL blood in EDTA tube
GF-MA	**Malaysian Allergy Panel** Food allergens: Egg white, egg yolk, cow's milk, codfish, wheat, white rice, sesame seed, peanut, soybean, crab, shrimp, clam, beef, orange, tuna, salmon, chicken, banana, chocolate Latex allergen: Latex Mold allergens: *Penicillium, Cladosporium, Aspergillus, Mucor, Candida, Alternaria* Grass allergens: Bermuda grass, Timothy grass Pet allergens: Can dander, dog dander Inhalant allergens: *Dermatophagoides pteronyssinus, Dermatophagoides farinae, Blomia tropicalis, cockroach mix, house dust*	Within 4 working days	• 4 mL blood in plain tube

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