

COMPANY PROFILE 2023

ZAKESY BIOTECH
SDN. BHD.



Professor Dato' Dr. MOHD ZAKI SALLEH

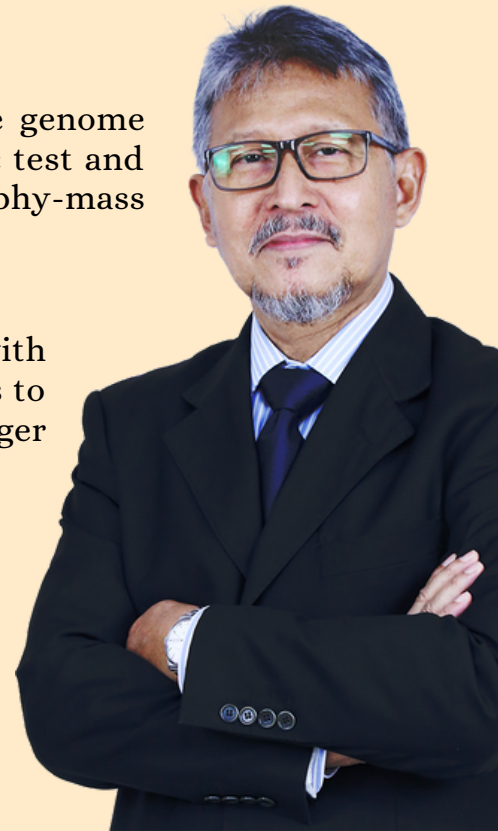
Director of Zakesy Biotech

Zakesy Biotech Sdn. Bhd. is a start-up company by a group of researchers at iPROMISE, Universiti Teknologi MARA (UiTM). The main objective is to spearhead the use of genetic tests for precision healthcare. Zakesy Biotech Sdn. Bhd. was established since 09 January 2019

We aspire to conduct and translate cutting edge research to navigate Precision Health. Our team comprises of researchers who are equipped with skills and knowledge in providing the best services.

Other research areas at the company include whole genome and exome sequencing, SNP array, pharmacogenomic test and analytical profiling using Liquid chromatography-mass spectrometry (LC-MS).

We employ young, enthusiastic candidates to work with Zakesy. We also continue to train talented individuals to fill the market with skillful and knowledgeable younger generations.



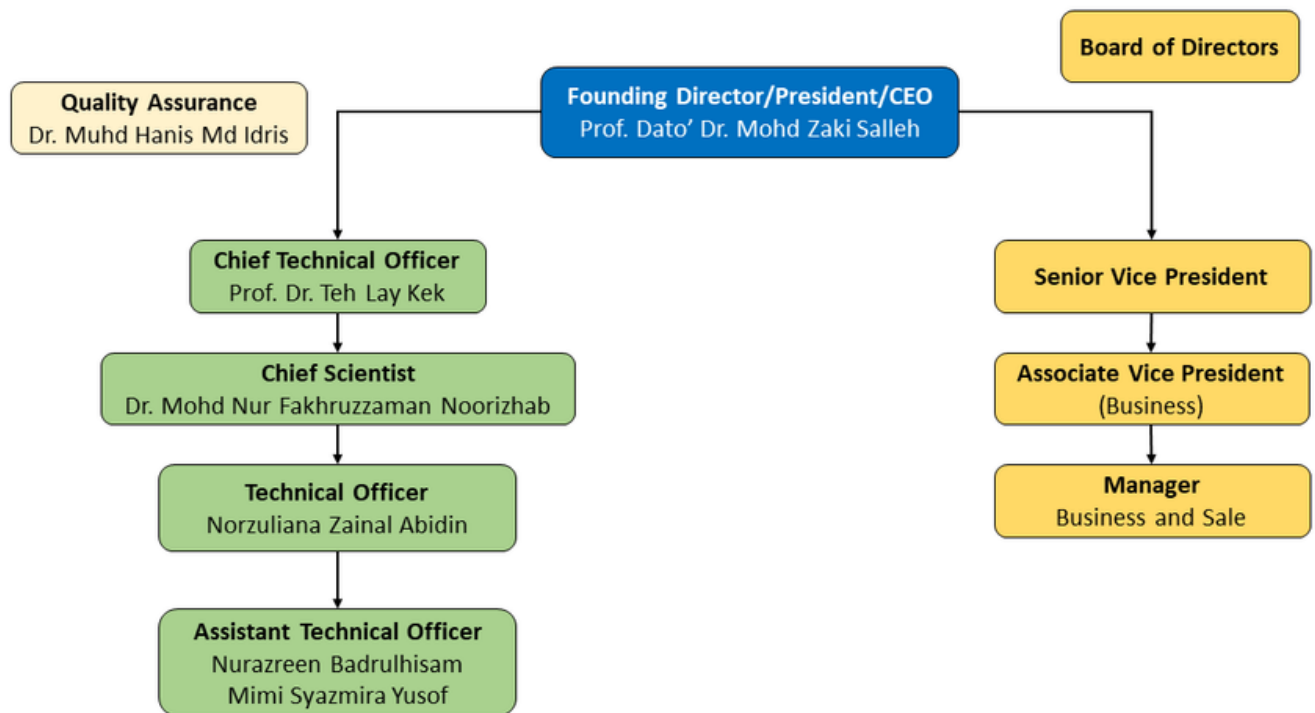
QUALITY POLICIES

- ✓ **Maintain** good laboratory practices and good professional practice of our testing services to our customers.
- ✓ **Avoid** involvement in any activities that would diminish confidence in its competence, impartiality, confidentiality and consistent operation of the laboratory.
- ✓ **Provide** the highest level of quality for the testing services in compliance with the governing standards of this industry.
- ✓ **Ensure** tests and services shall always be carried out in accordance with stated standardized methods and/or our customer's requirements.

QUALITY OBJECTIVES

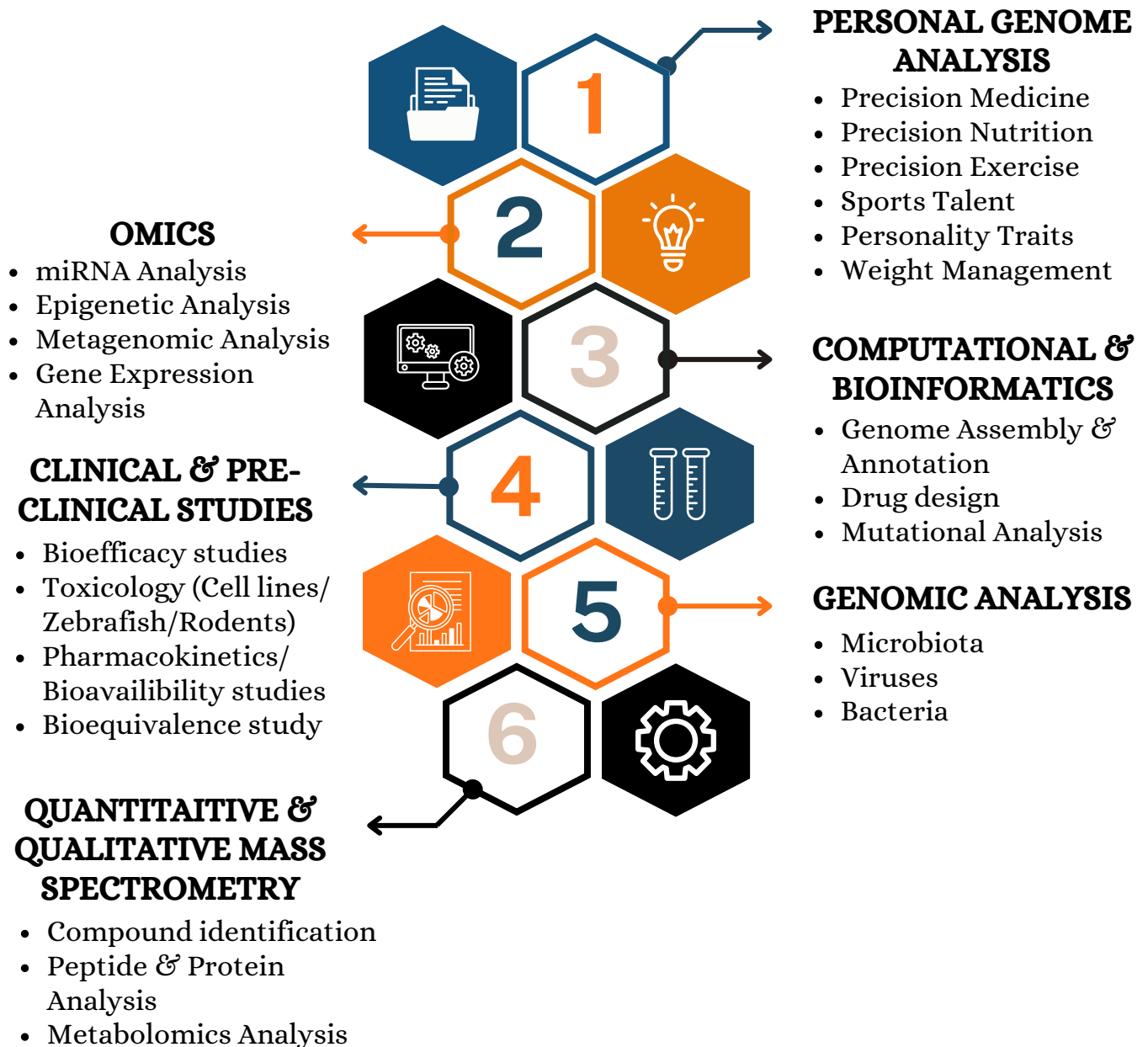
- ① To ensure that all personnel who manage, perform or verify work affecting the results of the laboratory activities are trained and skilled staff.
- ② To ensure not more than 3 of the complaints per year are in relation to quality issues.
- ③ To achieve 85% customer satisfaction.

ZAKESY BIOTECH SDN. BHD. ORGANISATION CHART



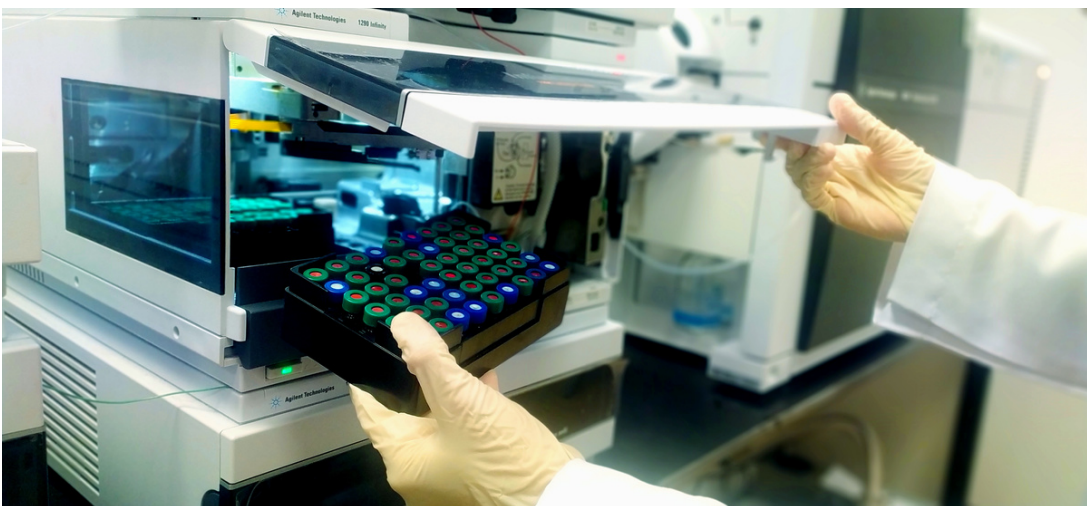
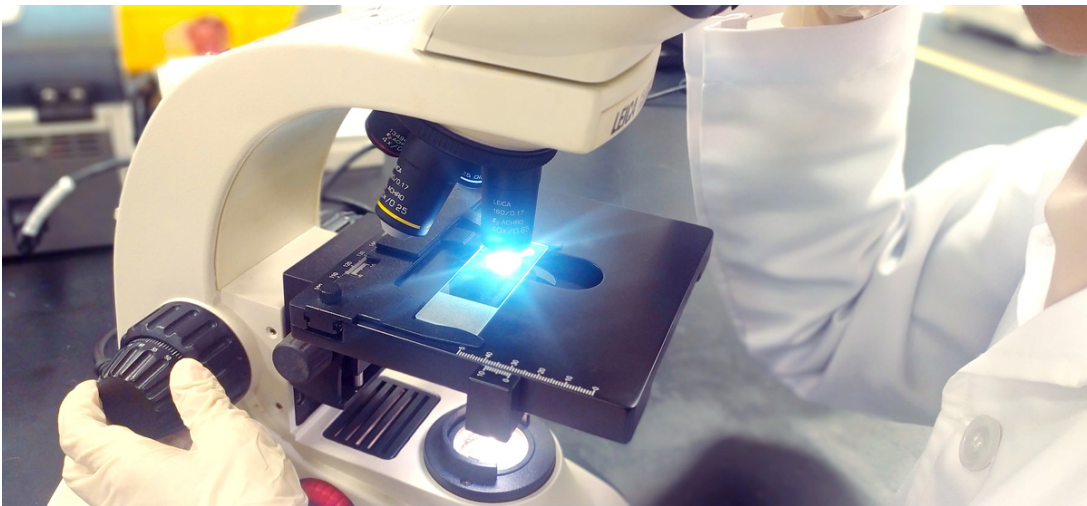
OVERVIEW OF OUR SERVICES

We're providing comprehensive molecular analysis approach.



SERVICES OFFERED BY ZAKESY BIOTECH

Zakesy Biotech is dedicated to provide quality and professional services to our valued customers, with the aim of fostering and strengthening linkages and collaborations. We are delighted to introduce a comprehensive range of services specifically designed to enhance and facilitate collaborations between academic institutes and industries. Our goal is to drive and achieve higher outputs by bridging the gap between these essential sectors. We are offering affordable, high quality and fast services in the field of DNA sequencing, genotyping, metabolomics and proteomics.



NEXT-GENERATION SEQUENCING (NGS)

Zakesy Biotech Sdn. Bhd. offers multiple sequencing services. Our facilities guarantee a three month return of data output and providing subsequent downstream analysis. The service is tailored according to :-

1 DNA Sequencing

- Resequencing
- Exome sequencing
- Small whole-genomes

5 Targeted Sequencing

- Targeted RNA sequencing
- Targeted resequencing

2 RNA Seq

- Gene expression studies
- Detection of novel transcripts

6 Amplicon Sequencing

- Customized panel

3 Small RNA-Seq

- Discovery profiling
- Differential sRNA expression
- Novel miRNA discovery
- small non-coding RNA discovery

7 Personal Genome

- Ancestry
- Allergy risk
- Personality
- Diet and nutrition
- Combat obesity
- Sport and exercise performance
- Disease risk
- Covid-19 risk
- Pharmacogenomics
- Cancer risk

4 16s and shot-gun metagenomics

- Bacterial identification
- Microbiome studies

BIOINFORMATICS DATA ANALYSIS SERVICES

1 DNA Sequencing

We analyse the raw reads from sequencing runs to determine the quality for subsequent downstream analysis. Customers may also choose to consult us regarding the recommended steps for subsequent analyses.

2 Whole-genome assembly

We provide de novo assembly of small genomes, and alignment of genomes of various sizes. Our resources also enable the mapping of sequencing reads to large reference genomes.

3 Variant analysis

Our pipelines offer the detection and analysis of different variants occurring within a sample genome. Customers may choose to target specific types of variations, or screen for any and all changes in the target genome sequence.

4 Gene annotation

We provide services for the identification of genes as well as their putative functions. Customers may choose to analyse short sequences, or entire genomes.

5 RNA-seq

We analyse transcriptomic data to infer gene expression levels in the customer-provided samples. In addition, information such as alternative splicing and variations in the transcriptome may also be analysed.

6 Metagenomics analysis

We provide analysis of metagenomes to acquire the relative abundance of different bacteria within a sample. Our pipeline also allows for the annotation of the metagenomes, providing an overview of the different genes present.

7 Comparative genomics analysis

We offer comparative analysis of multiple small genomes in order to highlight differences present. Customers may choose the target of the analysis.

PHARMACODIAGNOSTIC SERVICES

PCR-PGX-01 -A1

CYP2C9: CYP2C9*2, CYP2C9*3, CYP2C9*4

CYP2C9 variants are responsible for the variability of drug response in patient treated with warfarin, anti-diabetics and nonsteroidal anti-inflammatory drugs.

PCR-PGX-01 -A2

CYP2D6: Deletion (CYP2D6*5), Duplication (CYP2D6*xN), CYP2D6*4, CYP2D6*10, CYP2D6*14

CYP2C9 variants are responsible for the variability of drug response in patient treated with warfarin, anti-diabetics and nonsteroidal anti-inflammatory drugs.

PCR-PGX-01 -A3

CYP2D6: Sanger sequencing of Exon 1 to Exon 9

CYP2D6 variants which are responsible for variable drug metabolism capacity observed in patients. Drugs which are metabolized by CYP2D6 include tamoxifen, anti-arrhythmic, antipsychotic, anti-depressant, and beta-blockers.



We explore the potentials of pharmacogenomics and personalised medicine to identify the right drugs for the right patients. Pharmacogenomics allow us to get a better understanding on the use of drugs based on one's unique genetic makeup.

We take the lead in realizing the dream of pharmacogenomics-based personalised medicine by developing pharmacodiagnostic kits which determine the genetic variations that are known to influence patients' response to various clinical important drugs.

PCR-PGX-01 -A4

CYP2C19: CYP2C19*2, CYP2C19*3, CYP2C19*17

CYP2C19 variants helps to evaluate the risk for clopidogrel resistance. Clopidogrel is a medication used to prevent harmful blood clots from developing in people who are at risk of a heart attack or stroke.

PCR-PGX-01 -A5

HLA-B*15:02 (5 SNPs markers) + HLA-B*31:01 (1 SNPs markers)

HLA-B*15:02 variant responsible for the development of fatal drug-induced skin reactions such as Steven Johnson Syndrome (SJS) and Toxic Epidermal Necrolysis (TEN). Individuals who carry these genetic variants are at increased risk of the adverse skin reaction when drugs such as carbamazepine and phenytoin are consumed.

PCR-PGX-01 -A6

VKORC1: VKORC1 C1173T, VKORC1 G-1639A, VKORC1 T381C, **VKORC1 D36Y

VKORC1 variants that affect the dosing requirement of warfarin, which is an anticoagulant drug. Patients with the defective alleles are at increased risks of bleeding or warfarin resistance.

QUALITATIVE MASS SPECTROMETRY

We offer services in accurate mass detection as well as the studies of metabolomics using the current state of of art equipment, LCMS-QTOF. Metabolomics allow researchers to view biological systems in a way that is different from but complementary to genomics and transcriptomics. The LCMS/MS Q-TOF (Agilent Technologies 6520, Santa Clara, CA, USA) system is capable of delivering unmatched mass accuracy, mass resolution and speed for metabolomics, proteomics, product degradation and other complex experiments.

Services Offered

SERVICES	TYPES OF SAMPLES	EXPECTED RESULT
Metabolomics	<ul style="list-style-type: none">• Biofluids<ol style="list-style-type: none">1. Plasma2. Serum3. Urine• Tissue sample• Bacterial sample• Cell culture sample	<ul style="list-style-type: none">• Raw data (.d)• Analysis<ol style="list-style-type: none">1. p-value2. fold-change value3. Principle Component Analysis (PCA)4. Clustering analysis
Exact mass detection	<ul style="list-style-type: none">• Natural product (plant extract)• Pure compound	<ul style="list-style-type: none">• Raw data (.d)• Compound report
Compound identification (Tandem MS/MS)	<ul style="list-style-type: none">• Biofluids• Tissue & Cell Culture sample• Bacterial sample• Natural product (plant extract)	<ul style="list-style-type: none">• Raw data (.d)• Compound report

Applications of Metabolomics Platform

- Basic research
- Clinical research
- Environmental toxicology
- Crop optimization
- Food science

QUANTITATIVE MASS SPECTROMETRY

Zakesy Sdn. Bhd. through iPROMISE provides quantitative analysis services using Agilent 6400 Series Triple Quadrupole LC/MS System. Triple-Quad is proven choices for quantitative applications in fields as diverse as drug metabolism and pharmacokinetics (DMPK) studies, biomarker validation, clinical research, food testing, forensics, toxicology, and environmental analyses. In 2018, the Bioanalytical Unit is accredited with MS ISO/IEC 17025 for quantitation analysis of fluconazole.

Bioanalytical Lab

In compliance with ISO 17025



Analytical Facilities :

- Sample Receipt Counter
- Sample Preparation Room
- LCMSMS Room
- Weighing Room
- Statistical Room
- Archive Room

Quality Assurance :

- 13 SOPs for management
- 08 SOPs for technical
- 14 Working Instructions
- 13 Equipment SOPs

Zakesy Sdn. Bhd. through iPROMISE support collaborative research and development (R&D) in the field of bio-analytical with industries in BioNexus Partnership Program. Type of services offered by Zakesy are :

- Bio-equivalence study
- Pharmacokinetics and drug analysis
- Peptide quantitation
- Food safety
- Environmental toxicology
- Natural product

Contact Us



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ABOUT US

A start up company at iPROMISE, Universiti Teknologi MARA (UiTM). The main objective is to spearhead the use of genetic tests for precision healthcare.

TARGETED GENOTYPING



Pharmacogenomics



- **CYP2C9**
Warfarin Sensitivity
- **CYP2D6**
Antipsychotics & Tamoxifen Sensitivity
- **CYP2C19**
Clopidogrel Resistance
- **HLA-B*15:02**
Steven Johnson Syndrome & Toxic Epidermal Necrolysis
- **VKORC1**
Warfarin Sensitivity and Resistance

PERSONALIZED GENOME SEQUENCING



- Whole Genome Sequencing
- Whole Exome Sequencing
- Asian Screening Array

- Ancestry
- Allergies
- Personality
- Nutrigenetics
- Weight management
- Sport genomics
- Disease risks
- COVID-19 risk
- Pharmacogenomics

Food Sensitivity Panel

- Gluten Intolerance
- Lactose Intolerance
- Caffeine Intolerance

Nutrigenomics Panel

- Vitamin Deficiency

Diet & Weight Management Panel

- Matching Diet Type
- Resting Metabolic Rate
- Weight Loss-Regain
- Obesity
- Responses to Monosaturated Fats
- Responses to Polysaturated Fats

Sport Performance Panel

- Inflammatory Response
- Post Exercise Recovery
- Injury Risk
- Exercise Response
- Power/Endurance & VO2 Max Potential
- Response to Monosaturated Fats

MASS SPECTROPHOTOMETRY

Qualitative MS:

- Liquid Chromatography Mass Spectrometry Quadrupole Time of Flight (LCMS/MS Q-TOF)

Quantitative MS:

- Liquid Chromatography Mass Spectrometry Triple Quadrupole (LC/MS QQQ)



CONTACT US

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