

## CHEMICAL TESTING

1. **Macro and micronutrient**
  - Total Nitrogen, N
  - Phosphorus, P
  - Potassium, K
  - Calcium, Ca
  - Magnesium, Mg
  - Boron, B
  - Molybdenum, Mo
  - Ferum, Fe
  - Manganese, Mn
  - Sodium, Na
2. **Element Analysis (ICP-MS)**
  - Cadmium, Cd
  - Lead, Pb
  - Arsenic, As
  - Mercury, Hg
  - Aluminum, Al
  - Chromium, Cr
  - Nickel, Ni
  - Silver, Ag
  - Beryllium, Be
  - Cobalt, Co
  - Vanadium, V
  - Copper, Cu
  - Selenium, Se
  - Strontium Sr
  - Zinc, Zn
3. **Water Analysis**
  - PH
  - Total Phosphorus
  - Chromium
  - Copper
  - Magnesium
  - Sodium
  - Kalium
  - Ferum
  - Calcium
  - Turbidity\*
  - Total Suspended Solid\*
4. **Moisture (moisture analyzer)**
5. **Antioxidant (DPPH, TPC)**

## MICROBIOLOGY TESTING

1. **Beneficial microbe Analysis**  
\*Accredited under SMM for ISO/IEC 17025
  - Actinomycetes
  - Yeast
  - Lactobacillus
  - Nitrogen Fixing
  - Nitrifying
2. **Pathogen microbe Analysis**  
\*Accredited under SMM for ISO/IEC 17025
  - Salmonella spp
  - Pseudomonas
  - E.coli
  - Yeast & Mold Count
  - Enterobacter
  - Staphylococcus aureus
3. **Anti-microbial Testing**
  - Gram positive
  - Gram negative
  - Yeast
  - Total bacteria count

## FOOD ANALYSIS

1. **Proximate Analysis**  
\*Accredited under SMM for ISO/IEC 17025
  - Protein
  - Fat
  - Ash
  - Moisture
  - Energy
  - Carbohydrate
  - Crude Fiber
2. **Sensory Evaluation Test**
3. **Dissolution Test**

## COSMECEUTICAL AND FRAGRANCE ANALYSIS

1. **Particle size and PDI**
2. **Sensory evaluation - cosmetic and fragrance**
  - Skin Feel
  - Spreadability
  - Tackiness / greasiness / stickiness
  - After-feel
  - Fragrance acceptance
3. **Skin physiological analysis - In house**
  - Skin elasticity
  - Skin collagen intensity
  - Skin colour evaluation (melanin and erythema index value)
  - Skin surface pH evaluation
  - Skin surface sebum evaluation
  - Transepidermal water loss (TEWL)
4. **Facial imaging - In house (new, Q3)**
  - Wrinkle
  - Pore size
  - Skin roughness
  - Spot
  - UV acne
  - UV spot
  - UV moisture
5. **Transdermal drug delivery - in vitro (new, Q3)**

## CHROMATOGRAPHY ANALYSIS

1. **HPLC**
  - Eurycomanone
  - Marker compound analysis
  - Vitamin B and C
2. **GC**
  - Essential Oil
  - Fatty acid analysis (new, Q4)
  - Sample treatment (Q4)
3. **LCMS/MS**  
\*Accredited under SMM for ISO/IEC 17025 (Eurycomanone & Cordycepin)
  - Compound Profiling
  - Marker Compound quantification
  - Eurycomanone
  - Cordycepin





# IBD LABORATORY SERVICES

## INTRODUCTION

Institute Bioproduct Development (IBD) under Laboratory Services division assures that all the laboratory staffs are committed to meet customer requirement and satisfaction by providing professional services, particularly on staff competency, testing reliability and good quality system. In line with the IBD vision to be the Leading Centre in Research and Business Development of Speciality Chemicals and Biochemicals, the laboratories shall adopt and comply with the requirements of National Laboratory Accreditation Scheme (Skim Akreditasi Makmal Malaysia, SAMM) under International Standard of MSISO/IEC17025.

## SERVICES AND RESEARCH AREA

- *Natural products*
- *Pharmaceuticals*
- *Medicinal Compounds*
- *Cosmetics*
- *Food Products*
- *Biological samples*
- *Fertilizers and*
- *Environmental samples.*

## LABORATORY SERVICES

- *Chemical Testing*
- *Microbiology Testing*
- *Food Analysis*
- *Chromatography Analysis*
- *Cosmeceutical and Fragrance Analysis*

## RESEARCH AND EDUCATIONAL ACTIVITIES

Research collaborations with researchers from UTM, other high educational institutions, research institutions, governments and private agencies including NGO's are welcome. Laboratory facilities for research, educational and training activities are available. Class and hands-on teaching courses on analytical testing techniques for herbal and natural products, heavy metals and microbiological samples are provided, as well as for method development and validation



## AWARDS AND ACHIEVEMENTS

- *Certified MS ISO/IEC17025 under Department of Standard Malaysia*
- *BioNexus Partner Programme under Biotechcorp Sdn. Bhd.*

## Contact

Administration Person

**NORHAIRUNNISA BINTI MD NASIR**

Tel : **07-553 1559**

E-mail : [nisa@ibd.utm.my](mailto:nisa@ibd.utm.my)

Head of Laboratory

**SITI HAJAR MAT SARIP**

Tel : **07-553 1648**

E-mail : [hajar@ibd.utm.my](mailto:hajar@ibd.utm.my)