

Laboratory Services

in vitro Assays for Metabolic Diseases

Team 60+ scientists with background in

metabolic disorders

Experience Established 50+ metabolism targets

Fast Turnaround time of 5 workdays for

most assays

High performance 200+ projects completed

Assay Formats

- Binding (Radioligand Binding, HTRF, NanoBRET, SPR)
- Biochemical enzyme activity (Luminescence, Fluorescence, HTRF, LC/MS)
- Post-translational modifications (Mass Spec, AlphaLISA, HTRF, Fluorescent polarization, High content screening)
- Enzyme substrates in cells (Mass Spec, AlphaScreen, ELISA/MSD, ICW, ICE, High content screening, Western blotting)

Metabolism-related Targets

- GPCR
- Carboxylase
- Hydrolase
- Nuclear receptor
- Ion channel
- Kinase
- Oxidoreductase
- And more target types

Areas of Research

Glucose Metabolism

Lipid Metabolism

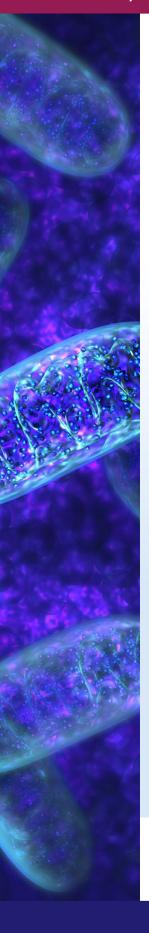
Mitochondria Metabolism

Neurotransmitter Metabolism

Nuclei Acid Metabolism

Fibrosis

Tailored Metabolism Assays for Your Research Needs



Glucose Metabolism

Glucose metabolismrelated screens to target diabetes, obesity, and related conditions.

Insulin

- Glucose stimulated insulin secretion
- Insulin-dependent cell proliferation

Glucose Uptake and Reabsorption

- 3H 2-DG uptake
- G6PDH uptake
- 14C-AMG uptake
- Adipocyte cell model

Lipogenesis and Lipolysis

- Adipocytes cell model
- 14C-Glucose based lipogenesis assay
- Glycerol detection
- Free fatty acid detection

Lipid Metabolism

Targeting lipid metabolism for atherosclerosis, fatty liver disease, and related metabolic disorders.

de novo Lipogenesis

14C Acetate assay

Fatty Acid Oxidation

 ¹⁴Ci-Palmitc or ¹⁴C-Oleic radiolabeled assays

TCA Metabolism

 Tracing radioactive ¹⁴C-tagged TCA intermediates

Lipid Accumulation

 Differentiation of human adipocytes

Lipid Droplet Formation

High content imaging

Cholesterol Metabolism & LDL Uptake

 LDLR reduction and function rescue assay

Mitochondria Metabolism

Comprehensive mitometabolic profiling to discover therapies targeting mitochondrial dysfunction.

Mitochondrial Biogenesis

- COX-I (mitochondrial DNA) vs SDHA (nuclear DNA)
- 7s DNA and mtDNA assessment (mitochondrial DNA)

Mitochondrial Toxicity

- Mitochondrial membrane potential
- Cytochrome C release assay
- Glucose vs. galactose

Oxygen Consumption

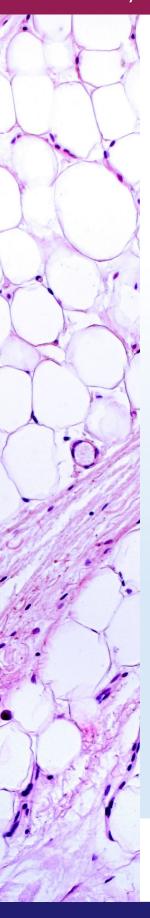
- Oxygen consumption rate (OCR)
- Extracellular acidification rate (ECAR)
- Glycolytic flux

Oxidative Stress

Reactive oxygen species (ROS)

Pharmaron is a global life science service provider that offers a broad spectrum of research, development and manufacturing service capabilities throughout the entire drug discovery, preclinical and clinical development process across multiple therapeutic modalities, including small molecules, biologics and CGT products.

Tailored Metabolism Assays for Your Research Needs



Neurotransmitter Metabolism

Neurotransmitter metabolism-related screens targeting a wide range of neuropsychiatric, neurological, respiratory and cardiovascular conditions.

- Neuronal transmitter uptake by FLIPR and Radiochemistry
- GPCR functional (cAMP, FLIPR) assays
- GPCR radioligand binding assays

Nuclei Acid Metabolism

Nucleic acid metabolism assays for gout, hyperuricemia, and renal uric acid issues.

Xanthine Oxidase

Gout, hyperuricemia

Urate Transporter 1

 Gout, tumor lysis syndrome

Organic Anion Transporters

Gout, hyperuricemia, kidney stones

Fibrosis

Targeting TGF- β induced pulmonary and hepatic fibrosis assay.

TGF-β induced **Pulmonary Fibrosis**

- Fibrosis-related marker
- Integrin and ECM binding
- Cell adhesion

TGF-β induced Hepatic Fibrosis

Fibrosis-related marker

in vivo Metabolic Disease Models

- Type I and II diabetes
- GLP-1R humanized model
- Fibrosis
- NAFLD
- NASH

- Nephropathy
- Hyperuricemia
- PSC model
- Hyperlipidemia
- Thyroidectomy
- Intestinal peristalsis
- Cardiovascular models
- Acute liver and kidney injury
- Hypocalcemia

Biomarkers and test article exposure in plasma and tissues can be measured for PK/PD studies.

Pharmaron is a global life science service provider that offers a broad spectrum of research, development and manufacturing service capabilities throughout the entire drug discovery, preclinical and clinical development process across multiple therapeutic modalities, including small molecules, biologics and CGT products.

Explore Compound Efficacy with Comprehensive Assay Cascades

Example: GLP1R Screening Cascade

Primary screening with hGLP1R cAMP cellular assay

MoA study (agonist, antagonist)

Binding assay (Tag-lite) Radioligand binding

Secondary screening (across species) mGLP1R, rGLP1R, dGLP1R, rbGLP1R, mkGLP1R cAMP Secondary screening (biased signaling) hGLP1R b-arrestin and pERK assay, internalization

Selectivity screening hGIPR, hGCGR, hGLP2R cAMP assay Dual receptors expression system

GPCR selectivity screening (>240 GPCR targets)

Safety panel screening (45 & 95 targets)

Glucose homeostasis (glucose uptake, GSIS, lipogenesis, lipolysis, insulin receptor binding)











Manufacturing & Control