



Advancing Mitochondrial Disease Drug Development with Integrated Preclinical Services

At **Protheragen**, we provide comprehensive R&D solutions to accelerate the discovery and development of therapies targeting mitochondrial diseases. Our platform combines disease-specific models, functional analysis, and therapeutic development support—all under one roof.

Key Services Modules

Stage	Capabilities
Target & Biomarker Discovery	Genetic, protein, and enzyme biomarkers; diagnostic kit development
Model Development & Evaluation	Mitochondrial cell models, animal models, functional and morphological analysis
Therapeutic R&D	Development of small molecules, macromolecules, gene and cell therapies
Preclinical Research	Efficacy, PK/PD, toxicity studies in disease-relevant systems

We Specialize In:

- ✓ **Systemic Mitochondrial Disorders**
e.g., MELAS, Leigh syndrome
- ✓ **Ocular Mitochondrial Diseases**
e.g., LHON, retinal degeneration
- ✓ **Muscle-Specific Mitochondrial Diseases**
e.g., mitochondrial myopathy, myoclonic epilepsy
- ✓ **Neurodegenerative Mitochondrial Conditions**
e.g., MERRF, NARP

 Partner with us to move from research to actionable insights and IND-enabling data.



Advanced Modeling & Mitochondrial Function Platforms



Cell-Based Models

- Lymphoblastoid cells, fibroblasts
- Cybrid models
- iPSC-derived neurons, muscle cells, and retinal cells



Animal Models

- Mouse, rat, zebrafish, Drosophila, *C. elegans*
- Available in genetic, induced, and tissue-specific formats



Mitochondrial Functional Assays

- Mitochondrial membrane potential, ROS, ATP measurement
- Organelle morphology, damage detection
- Protein isolation, fission/fusion tracking (*in vitro*/*in vivo*)



Therapeutic Modalities We Support

- Small Molecule Drug Development
- Macromolecular Drug Development
- Cell Therapy (e.g., mitochondrial transfer, iPSC-based)
- Gene Therapy Development
- Vaccine Development



Research Reagents & Featured Products

- Mitochondrial Isolation Kits & Staining Reagents
- Organelle Specific Diagnostic Assay Kits
- Activators and Inhibitors of Mitochondrial Metabolism
- Mitochondrial Specific Antibodies

Let's Transform Mitochondrial Disease Therapy Together

Please note that we are a research service provider and do not provide diagnostic or treatment services to individuals.