

Complete Solutions for GLP-1 Agonist Research

Integrated drug discovery solutions

The glucagon-like peptide-1 (GLP-1) drug landscape has rapidly evolved, extending far beyond well-established roles in managing type 2 diabetes and obesity. GLP-1 receptor agonists, which mimic the incretin hormone GLP-1, initially gained prominence for their ability to regulate blood sugar and promote weight loss. However, recent research has revealed their potential in a range of other therapeutic areas. From cardiovascular protection and improved cognitive function in neurodegenerative diseases like Alzheimer's, to the modulation of inflammatory pathways in conditions such as metabolic dysfunction-associated steatohepatitis (MASH), the versatility of GLP-1 drugs is redefining their role in modern medicine. This expanding therapeutic relevance focuses on the interface of metabolic dysfunction and chronic disease. Inotiv's drug discovery engine can drive innovative and comprehensive approaches to develop new therapeutics in these areas.



Drug discovery presents foundational requirements, regardless of the disease or modality at hand. Inotiv drug discovery scientists provide a drug discovery engine to support multiple therapeutic areas and is **fueled with innovative platforms to drive programs** from early discovery through the clinic.



Disease Pharmacology Models

Inotiv's *in vivo* pharmacology models are designed to mimic different aspects of disease and disorders. These models are indispensable tools for understanding GLP-1 related disease mechanisms and for preclinical validation of drug targets and intervention strategies.

OBESITY, DIABETES, AND METABOLIC DYSFUNCTION

- Type 1 Diabetes
- Type 2 Diabetes
- Obesity/Pre-Diabetes

CARDIOVASCULAR DISEASE

- Heart Failure
- Vascular Disease

LIVER DISEASE

- Regeneration
- MASH
- Acute Liver Injury
- Hepatitis B Virus
- Fibrosis

RENAL DISEASE

- Acute Kidney Injury (AKI)
- Chronic Kidney Disease (CKD)
- Experimental Diabetic Kidney Disease (DKD)
- Hypertensive Nephropathy
- Nephritis
- Nephrotic Syndrome

PULMONARY DISEASE

- Obstructive
- Restrictive
- Pulmonary Arterial Hypertension (PAH)

NEURODEGENERATION / NEUROINFLAMMATION

- Alzheimer's Disease
- Parkinson's Disease
- ALS
- Multiple Sclerosis

GASTROINTESTINAL INFLAMMATION

- Ulcerative Colitis
- Crohn's Disease
- Ileitis
- Small intestinal injury

Development of Translational Efficacy & Biomarker Strategy

Preclinical assessment of novel therapeutics for diseases involving GLP-1 include analysis of translation efficacy and incorporate a biomarker strategy to confirm mechanistic changes in the *in vivo* models and enable translation to the clinic. Inotiv offers a full range of biomarker assays including targeted and global proteomics to monitor key protein drug targets and the disease pathways they control.

Integrated Assays Providing Key Data Points Relative to Your Target

- Tissue and cell profiles
- Histopathology
- Hematology

Detection, visualization, and pathway analysis of your target

- Immunohistochemistry/Immunofluorescence
- ELISA
- Gene and protein multiplex assays

Analyze specific cell populations relative to your target

• Flow Cytometry

Quantify your protein drug target and key disease pathways

• Targeted and Global Proteomic Assays by Mass Spectrometry (LC-MS/MS)

Qualifying Safety and Tolerability

Drug Discovery programs typically include initial assessment of toxicity for a therapeutic, but interpretation requires appropriate context. Inotiv attaches greater importance to understanding the mechanisms of action of candidate drugs by crafting a fully integrated data package involving pharmacology, target engagement, pathway activation, and early exploratory toxicology – all supported by drug metabolism, pathology, and histology.

COMPLETE SOLUTIONS FOR GLP-1 AGONIST RESEARCH

Inotiv's multi-disciplined approach for assessing GLP-1 therapeutics navigates the complexity and interconnectedness of the physiological systems they influence. A comprehensive, multi-faceted evaluation ensures that GLP-1 drugs can meet their fullest potential and maximize benefits for patient health.