TCG Lifesciences | Chembiotek

DMPK Bioanalysis

At TCG Lifesciences (TCGLS), our DMPK Bioanalysis division delivers high-quality, decision-enabling data to support drug discovery and development across a broad range of therapeutic modalities. With extensive expertise in LC–MS/MS-based bioanalysis of ADME and PK samples, biomarker assays, and metabolite identification, we provide precise, reproducible, and robust solutions to advance early discovery programmes.

Our team combines scientific rigour with high-throughput capability, enabling accelerated timelines.

Core Bioanalytical Capabilities

Modality Expertise

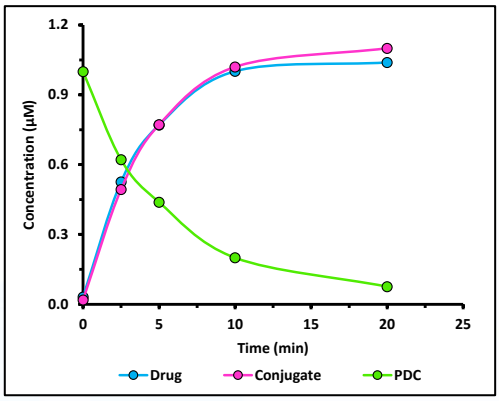
- **Small Molecules**
- **Small Peptides (< 2.5 kDa)**
- **Polymer-Drug Conjugates (< 1.5 kDa)**

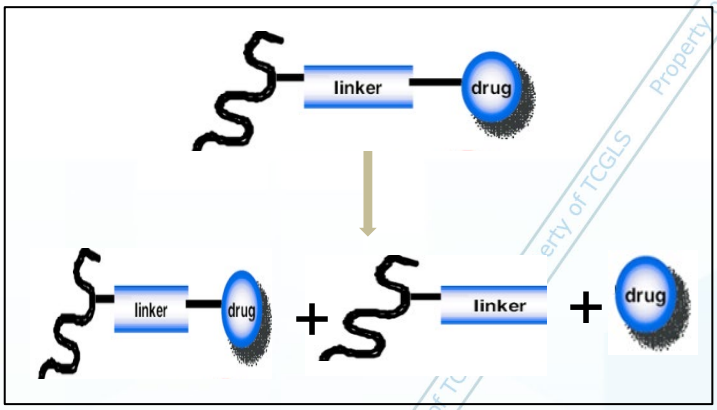
Assay Matrices

- **Biofluids**: Plasma, Serum, CSF, Urine, Bile, Synovial Fluid
- **Tissue Samples**: Brain, Liver, Kidney, Lungs, Spleen, Colon, Skin, DRG, Sciatic Nerve
- **Dried Blood Spot (DBS) Assays** for Preclinical Studies

Bioanalytical Method Development for Polymer–Drug Conjugates

One of our specialised bioanalytical services is the analysis of mPEG–drug conjugates, a key component within the polymer–drug conjugate (PDC) modality. This work requires careful interpretation of multiple entities—including the polymer–drug conjugate, polymer, and novel chemical entity (NCE). At TCGLS, we have established robust and reliable assay platforms that deliver accurate, reproducible data to effectively meet client requirements.



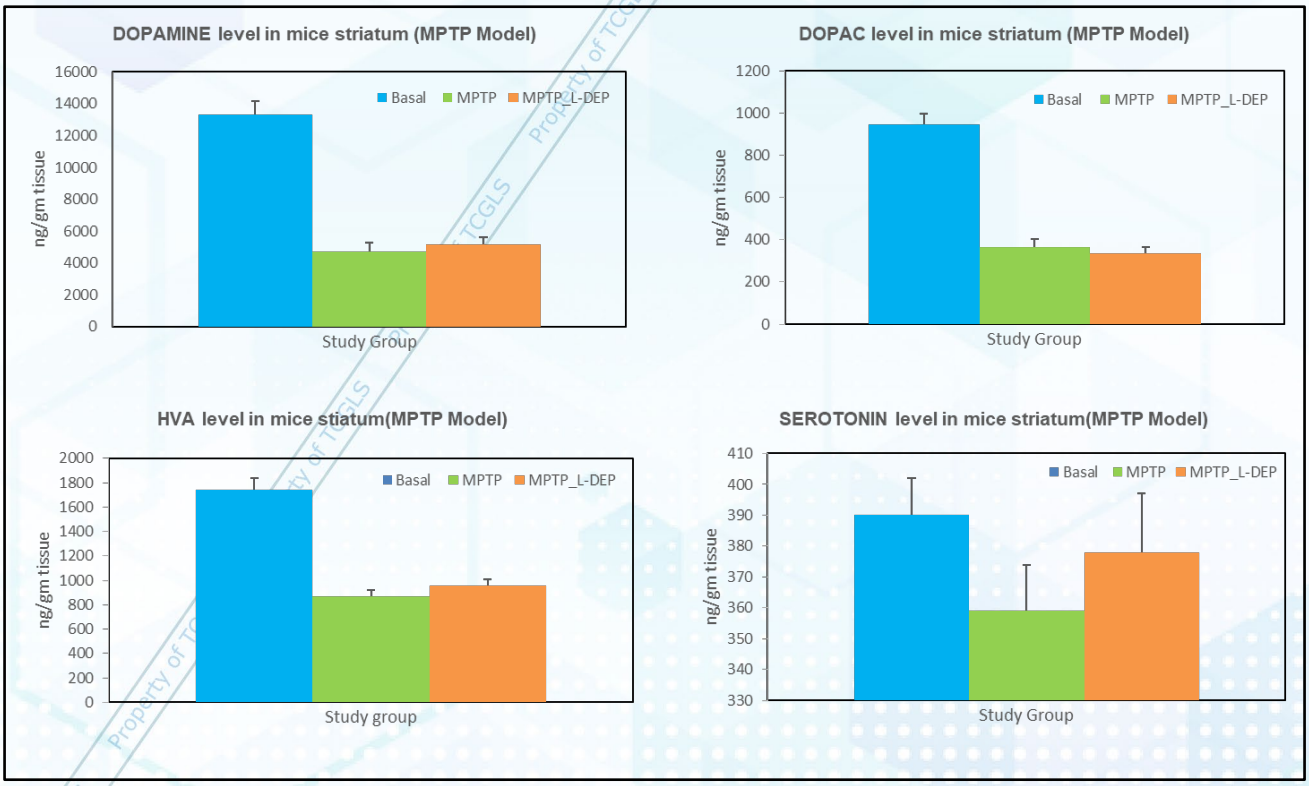


Biomarker Quantification

Our Biomarker Solutions Supporting PD Models

At TCGLS, our bioanalysis services are designed to accelerate drug development through innovative biomarker solutions. Our specialised platforms enable accurate and sensitive quantification of pharmacodynamic (PD) biomarkers, providing critical insights into drug mechanism, efficacy, and biological response.

With end-to-end capabilities—from assay development through to validated bioanalytical support—we are a trusted partner in biomarker-driven research. A recent advancement includes the use of the MPTP mouse model, which mimics key features of Parkinson's disease, enabling detailed analysis of dopamine and its metabolites.



Neurotransmitter levels on Day 7 of treatment

Our Biomarker analysis platform can identify and quantify a range of components which include:

- **Neurotransmitters:** Dopamine, DOPAC, HVA, Serotonin
- **Lipid Mediators:** LPA and others
- **Custom-developed LC–MS/MS Biomarker Assays**

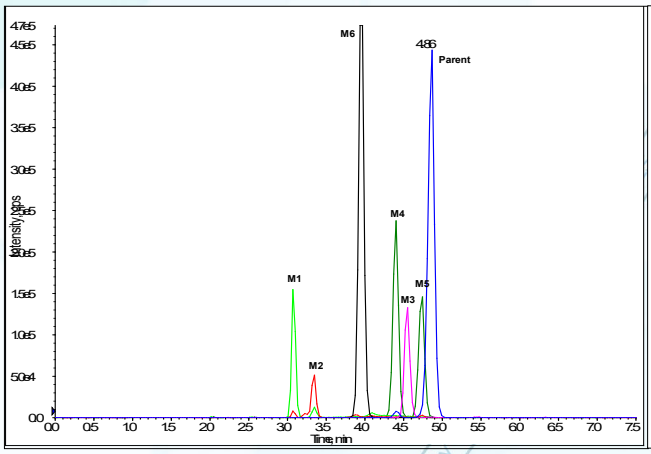
Metabolite Identification (MetID)

- **Small Molecule MetID (Soft Spot Prediction) –** Phase I and Phase II

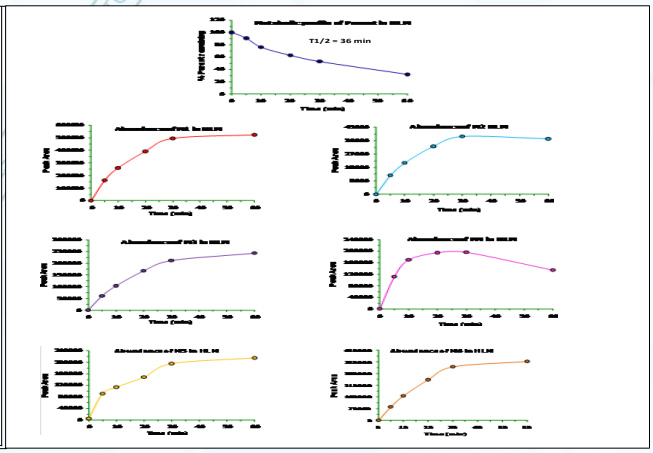
Our Key Feature: Metabolite Identification

At TCGLS, our Bioanalysis team provides comprehensive Metabolite Identification (MetID) services for small molecules, spanning both Phase I and Phase II metabolites. Using advanced analytical instrumentation, we accurately identify and characterise drug metabolites, including probable structure elucidation, to support lead optimisation.

Our studies are performed across a broad range of assay systems—including liver microsomes, hepatocytes, plasma, and *in vivo* models—ensuring complete and reliable identification of Phase I/II metabolites (3-5).



LC-MRM trace of metabolites and parent



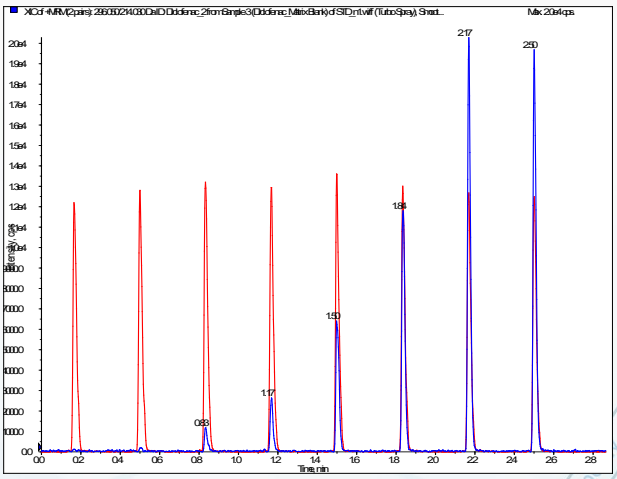
Abundance of metabolites

High-Throughput Bioanalysis

- **Rapid Turnaround for Discovery Projects**

Our Promise – High Throughput Turnaround

With highly sensitive MS platforms such as API 7500, 6500+, 5500+, and 6495C QQQ, combined with autosamplers including RapidFire and LSI, we have significantly enhanced throughput. Our robust analytical platform ensures rapid turnaround times for collaborators, typically achieving 2.5–4-hour cycle times for 384 samples.



Sample run in LSI platform: 8 injections in < 3 min

- **Robust SOPs Ensuring Accuracy, Sensitivity, and Reproducibility**

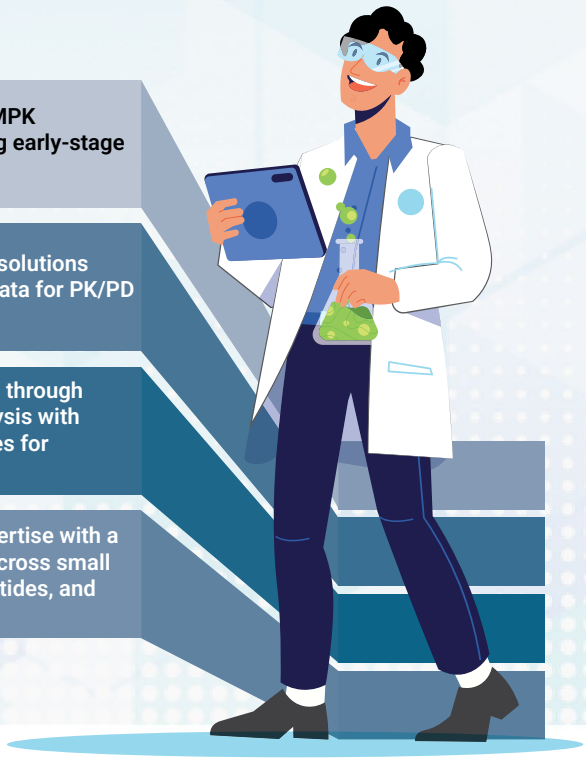
Instrument Platforms

Our laboratories are equipped with state-of-the-art, industry-standard instrumentation, ensuring high sensitivity, reproducibility, and scalability:

- **Rapid Fire 400:** 384-sample analysis achieved within 2.5–4 hours
- **MS Platforms:** API 7500, 6500+, 5500+, 4000; 6495C QQQ
- **Liquid Chromatography Systems:** Shimadzu LC-40AD, LC-30AD, LC-20AD
- **Autosamplers:** PAL3-RSI, LSI-I
- **Automation in Method Development:** LeadScape® and DiscoveryQuant™ for automated LC–MS/MS method development

Why Partner with TCGLS?

1. Precise and robust DMPK bioanalysis supporting early-stage drug discovery
2. MetID and biomarker solutions delivering seamless data for PK/PD correlation
3. Accelerated timelines through high-throughput analysis with 2.5–4-hour cycle times for 384 samples
4. Proven scientific expertise with a strong track record across small molecules, small peptides, and novel modalities



More Information
bd@tcgls.com
www.tcgls.com