

Mapping Human Liver Disease in Large-Scale Human Primary Cell Next Generation Sequencing Project with Ochre Bio

Case Study of Lexogen NGS Services

Ochre Bio is a biotechnology company developing RNA medicines for under-treated chronic liver diseases. Ochre builds and integrates extensive human liver data, including proprietary gene perturbation and disease atlases, to make causal pathway predictions for target discovery and facilitate the development of RNA therapies. Ochre's proprietary OBELiX software enables interrogation of gene biology in human cells, tissue and whole livers, and provides an AI-driven discovery engine for target prioritization.

Confronting Human Liver Fibrosis and Cirrhosis

Targeting liver fibrosis and cirrhosis is paramount to mitigating the escalating global prevalence of chronic liver diseases, yet effective therapeutic coverage remains elusive. Ochre Bio is tackling these pervasive disease mechanisms with pipeline RNA-based therapies, **leveraging powerful proprietary AI models and an exclusive focus on human primary cells to redefine drug discovery for liver disease.**

Largest Functional Human Liver Atlas to Date

Over 120,000 liver samples were sequenced by Lexogen to generate casual gene perturbation data for Ochre Bio, establishing the most extensive human liver functional genomics resource there is until now. High-fidelity RNA-Seq data is foundational for Ochre's human discovery platform (Fig. 1). **Lexogen NGS Services has been a trusted long-term sequencing partner to Ochre Bio** delivering high-quality RNA-Seq data from various sample inputs including bio-banked FFPE to micro-organ and primary hepatocyte samples at scale and in time. Lexogen's expert teams provide state-of-the-art, streamlined, and customizable workflows to deliver the best results across all sample types, including the most challenging.

Key Capabilities of Lexogen NGS Services Valued by Ochre Bio

- ✓ Fully **customized RNA-Seq workflow** designed to meet stringent quality parameters and unique biological requirements
- ✓ Robust **extraction-free, high-resolution RNA-Seq** capabilities with **proprietary THOR technology**
- ✓ Deep expertise in handling **biological and technical complexity of liver tissue**
- ✓ Dedicated commitment to deliver **highest quality of RNA-Seq data** with robust technology and rigorous validation
- ✓ **High-throughput capabilities** for processing 120,000 samples are instrumental for meaningful AI-driven liver drug discovery
- ✓ **Operational excellence** with best practices and highly controlled operating procedures
- ✓ Trusted **long-term partnership** at eye level
- ✓ Recognized leader for **RNA-Seq expertise** and NGS services

Setting New Standards for Human-data-driven Medicine by Integrating Transcriptomics and Computation



Human Discovery Platform

- Proprietary gene perturbation
- Disease atlas generation



Human Validation Platform

- Perfused livers
- Diseased tissue slices
- Primary cells



RNA Platform

- Design of RNA-based therapies
- In-house production

Bulk/ Single-cell RNA Sequencing by Lexogen NGS Services

Figure 1 | Lexogen NGS Services generates high-quality RNA-Seq data for Ochre Bio's liver atlas, successfully accelerating liver drug discovery.



“In AI-driven target discovery, a platform is only as powerful as the data fueling it. With more than 120,000 samples derived from primary human hepatocytes, an inherently complex and variable system, rigorous data quality and cross-sample consistency become essential for interpretability. High-fidelity sequencing data, standardized processing, and reproducible assay performance enable machine-learning models to separate true biological signal from technical noise. Lexogen’s proprietary THOR technology and expert RNA-Seq service has delivered outstanding data at a large-scale enabling better target predictions in the future.”

Dr. Quin Wills, Founder and CEO, Ochre Bio

Lexogen NGS Service, the Trusted NGS Development Partner for Drug Discovery

Lexogen NGS Services empowers the pharmaceutical and biotech industries by providing **customized sequencing services and tailored bioinformatics solutions**. We enable the complete adoption of end-to-end RNA-Seq workflows, **expediting drug discovery by delivering unprecedented insights into gene expression, disease mechanisms, and drug responses**. Like Ochre Bio, our biotech and pharma clients share these common values with Lexogen:



**RNA & NGS
Expertise**



Customization



**Consistency &
Quality**



Scalability



Confidentiality

Reaching Milestones of Early Drug Discovery with High-quality RNA-Seq Data Generated by Lexogen

Beyond our recent collaboration with Ochre Bio, Lexogen maintains a **broad and successful track record of initiatives across the entire drug discovery workflow**, fostering novel discoveries for diverse therapeutic areas. A subset of our routinely covered applications includes:

► High-throughput Drug Sequencing

- Extraction-free, cell-based compound screening
- Consistent and ensured data quality at scale

► Mode-of-action Studies

- Robust end-to-end Whole Transcriptome Workflows
- Efficacy studies for novel cancer immunotherapies

► Single-cell RNA Sequencing

- Cell population identification for disease research
- Immune Profiling by TCR/ BCR-Seq

► Target Identification on FFPE Samples

- Experienced with low-quality samples (DV200 <50)
- Pathway-level analysis in various cancer models

► Biomarker Discovery in Biofluid Samples

- Small RNA-Seq of blood-derived patient samples
- Low-input RNA, e.g., from extracellular vesicles

► Combined RNA/DNA Sequencing

- Precision Cancer Vaccine Development
- Highest data protection with precious patient material

Supported Sample Types

Lexogen NGS Services specializes in maximizing yield and quality from minimal and degraded RNA samples from the following origins:

- ✓ Extracted RNA
- ✓ Cell, tissues, organoids
- ✓ FFPE curls and sections
- ✓ Blood, plasma, serum
- ✓ Dried blood spots
- ✓ Extracellular vesicles
- ✓ Fixed and cryopreserved cell suspensions

We routinely work with challenging sample inputs and constantly expand our capacities.

Ready to shape your milestones?
Get in touch via the code!

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