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Your Science, Within Reach

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Global Leaders in Single-Cell and Spatial

Empowering Discovery with Single-Cell and Spatial Transcriptomic Technologies

How Our Solutions Can Benefit Your Research

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About Omics Empower

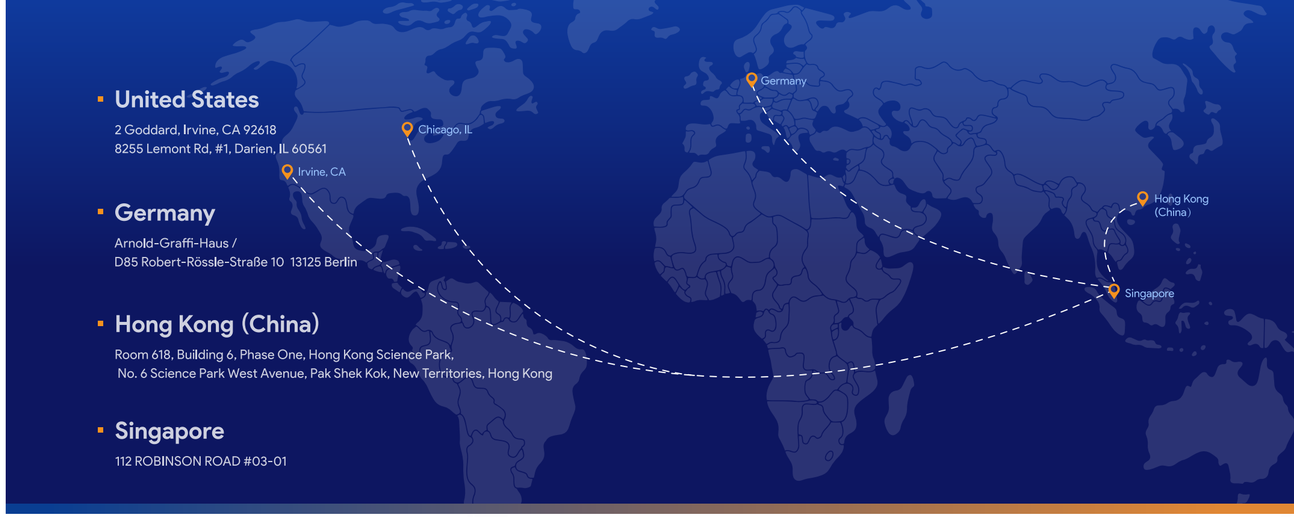
Omics Empower is a global multi-omics CRO providing high-quality experimental and analytical services to support life science research. We partner with researchers across academia, biotech, and pharmaceutical organizations, delivering reliable data and responsive project support across a wide range of research applications.

As a multi-omics service provider, we combine broad technical capabilities with a strong commitment to scientific rigor, operational reliability, and collaborative execution. Our teams work closely with clients to build fit-for-purpose workflows that align with project goals, sample characteristics, and downstream analysis needs.

Publications	Lab Exp	Sample Type
500+	17,000+	2,000+

Since 2018, we have built strong expertise in single-cell and spatial transcriptomics, supporting projects from study planning and sample processing to sequencing and bioinformatics analysis. Our laboratories across the U.S., Europe, and Asia enable efficient coordination and responsive support for international research teams, while continuing to expand our global footprint to meet evolving research needs.

With 500+ publications supported, 17,000+ experiments completed, and 2,000+ sample types handled, Omics Empower combines broad multi-omics capabilities with focused single-cell and spatial expertise to support research projects worldwide.



Global Reach, Coordinated Multi-Omics Support

Omics Empower combines a global laboratory network with multi-omics service expertise to support international life science research. Across the U.S., Europe, and Asia, our teams provide responsive communication, efficient coordination, and reliable execution across **single-cell sequencing, spatial transcriptomics, yeast library,** and **bioinformatics analysis.**

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What We Offer?

- Single-Cell Sequencing
- Spatial Transcriptomics
- Next-Generation Sequencing
- Bioinformatics & Data Analysis

Single-Cell Sequencing Services

Omics Empower provides end-to-end single-cell sequencing services across **10x Genomics** and **MobiDrop** platforms, with experience supporting diverse and challenging sample types from sample handling to bioinformatics analysis.

The workflow shown below is a representative example based on the 10x Chromium platform.

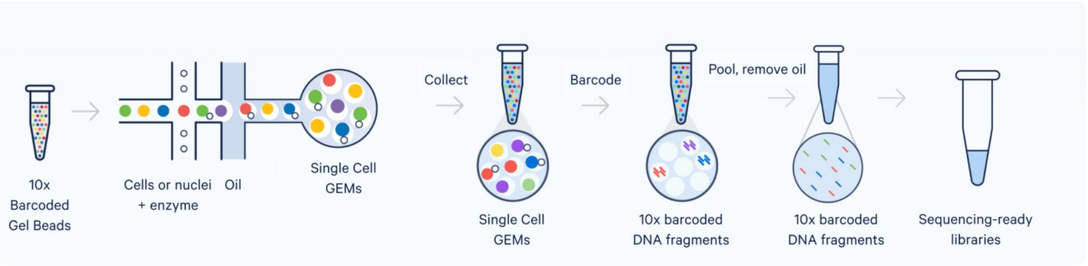

Figure 1 . Illustrative workflow of the 10x Chromium single-cell RNA sequencing library preparation process (Source: 10x Genomics)

Single-Cell Sequencing Platforms

- Single-Cell 3' RNA sequencing
- Single-Nuclei RNA sequencing
- Single-Cell 5'+ immune repertoire sequencing (V(D)J)
- Single-Cell ATAC-seq
- Single Cell Gene Expression Flex

10x Chromium Controller

10x Chromium iX

MobiNova®-100

10x Single-Cell Assay Overview

	10x 3' scRNA-seq	10x 5' scRNA-seq	10x FLEX	10x ATAC
Capture Principle	Poly(A)	Poly(A)	Probe-Based	Transposase-Accessible Chromatin (ATAC)
Sample Requirement	Fresh, Frozen	Fresh	Fresh, Frozen, FFPE	Fresh, Frozen
Cell Type	Single Cell; Single Cell Nucleus	Single Cell	Single Cell; Single Cell Nucleus	Single Cell; Single Cell Nucleus
Fixation Required	No	No	Yes (Not required for FFPE)	No
Species	Eukaryotes	Human, Mouse	Human, Mouse	Eukaryotes
Immune Repertoire (T & B Cells Only)	No	Yes	No	No

Spatial Transcriptomics Services

Spatial transcriptomics reveals not only what cells express, but also where they are located within tissue—providing critical spatial context beyond single-cell RNA sequencing.

Omics Empower provides end-to-end spatial transcriptomics services across major platforms, including 10x Visium, 10x Xenium, and STOmics Stereo-seq, with workflows optimized for fresh-frozen and FFPE samples. We support reliable project execution through established imaging workflows and experienced sample handling.

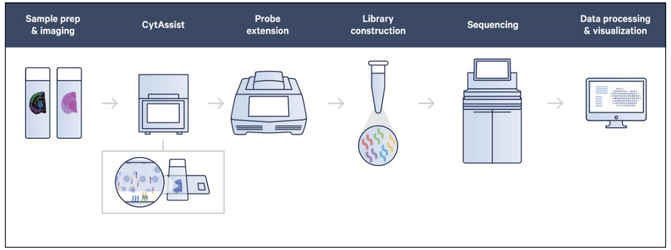

Figure 2. Example workflow for 10x Visium with CytAssist (Source: 10x Genomics)

	10x Visium V2	10x Visium HD V3		STOmics stereo-seq V1.3	STOmics stereo-seq V1.1	10x Xenium
Species Type	Human and mouse	Human and mouse	All Species	All Species	All Species	Human and mouse+ Special Species Customization
Sample Type	FF/FxF/FFPE	FF/FxF/FFPE	FF	FF	FFPE	FF/FFPE
Resolution	55μm 1-10 cells	2μm 1 cell	2μm 1 cell	500nm 1 cell	500nm 1 cell	0.22μm
Capture Area (chip)	6.5 × 6.5mm 11 × 11mm	6.5 × 6.5mm	6.5 x 6.5mm	5 × 5mm 10 × 10mm	5 × 5mm 10 × 10mm	10.45 × 22.45mm

Tissue chips panoramic scanner

10x Genomics Xenium

Stereo-seq microscope

10x Genomics Visium CytAssist

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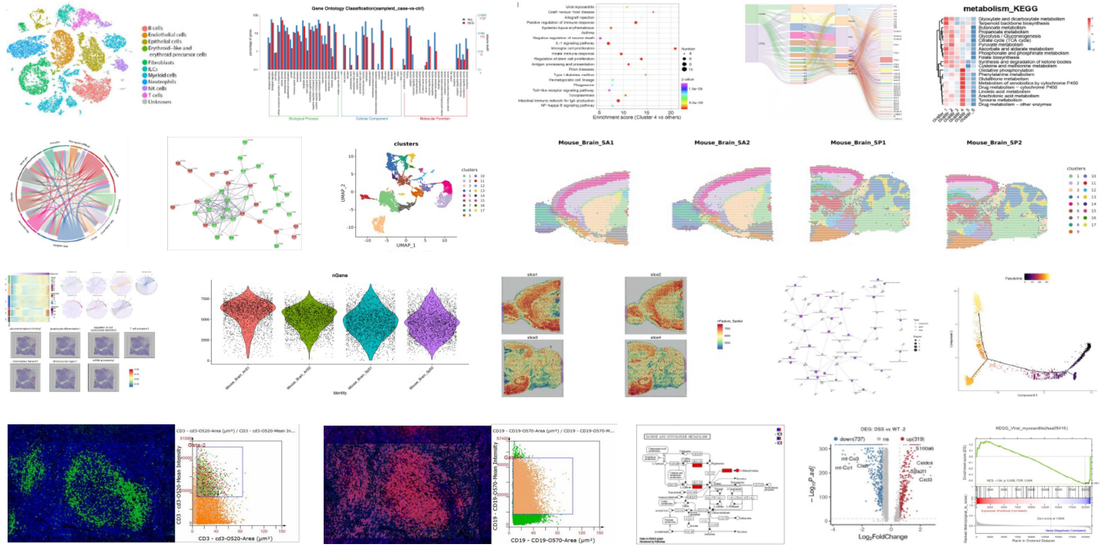
Bioinformatics and Data Analysis

- **Advanced QC and Statistical Analysis**
- **Customizable Workflows from Sample to Data**
- **Multi-Omics Integration Analysis:**

  Our multi-omics integration analysis supports data normalization, comparative analysis, and correlation analysis across genomics, transcriptomics, proteomics, metabolomics, and lipidomics datasets, helping reveal relationships across molecular layers.

Integrated normalization and correlation analysis across:

Genomics | Transcriptomics | Proteomics | Metabolomics | Lipidomics



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What We've Supported

Oncolytic virus VG161 in refractory hepatocellular carcinoma

IF: **50.5** Journal: **Nature** Published: **23 Apr 2025**

Services provided:

10x 5′ scRNA sequencing & spatial transcriptome sequencing & whole transcriptome sequencing

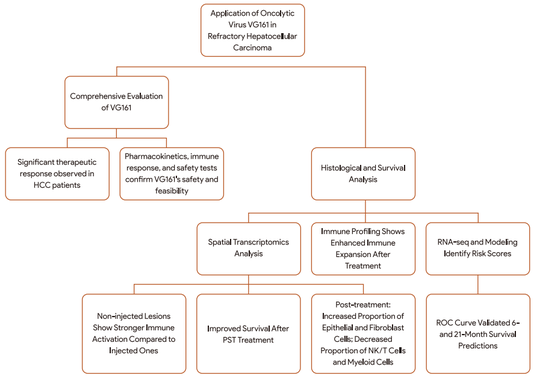
Study Design:

Phase I Clinical Trial: A total of 44 patients were enrolled, including 11 patients in the dose-escalation phase and 33 patients in the dose-expansion phase.
Single-cell RNA Sequencing: Surgical specimen from one HCC patient and biopsy samples from four HCC patients (n=4 pre-treatment; n=4 post-treatment).
Spatial Transcriptomic Sequencing: Surgical specimen from one HCC patient.

Abstract:

Hepatocellular carcinoma remains a life-threatening malignancy with limited therapeutic options following the failure of second-line treatments1,2. Oncolytic viruses selectively replicate in and lyse cancer cells, releasing neoantigens and stimulating systemic antitumour immunity3, offering a potential therapeutic option. Here we present the results of a multicentre phase 1 clinical trial evaluating VG161, an engineered oncolytic herpes simplex virus that expresses IL-12, IL-15, IL-15Rα and a PD-1–PD-L1-blocking fusion protein4, for safety and efficacy in patients with advanced liver cancer. VG161 was well tolerated, with no dose-limiting toxicities observed, and it demonstrated promising efficacy by reshaping the tumour immune microenvironment and re-sensitizing tumours that were previously resistant to systemic treatments. Notably, we also found that patients who had previously been sensitive to checkpoint inhibitor therapy showed enhanced efficacy with VG161 treatment. Furthermore, we developed an efficacy-prediction model based on differentially expressed genes, which successfully identified patients who were likely to benefit from VG161 and predicted prolonged overall survival. These findings position VG161 as a promising third-line therapeutic option for refractory hepatocellular carcinoma. This provides a new avenue for treatment and advances the field of oncolytic virus-based immunotherapies.

Technical route



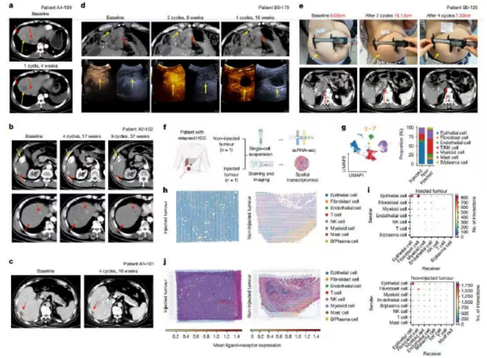


Fig 3. Representative tumor response data of responding patients

Neural-activity-regulated and glia-mediated control of brain lymphatic development

IF: **45.5** Journal: **Cell** Published: **April 30, 2025**

Services provided:
Single-cell transcriptome sequencing

Abstract:
The nervous system regulates peripheral immune responses under physiological and pathological conditions, but the brain′s impact on immune system development remains unknown. Meningeal mural lymphatic endothelial cells (muLECs), embedded in the leptomeninges, form an immune niche surrounding the brain that contributes to brain immunosurveillance. Here, we report that the brain controls the development of muLECs via a specialized glial subpopulation, slc6a11b+ radial astrocytes (RAs), a process modulated by neural activity in zebrafish. slc6a11b+ RAs, with processes extending to the meninges, govern muLEC formation by expressing vascular endothelial growth factor C (*vegfc*). Moreover, neural activity regulates muLEC development, and this regulation requires Vegfc in *slc6a11b*+ RAs. Intriguingly, slc6a11b+ RAs cooperate with calcium-binding EGF domain 1 (*ccbe1*)+ fibroblasts to restrict muLEC growth on the brain surface via controlling mature Vegfc distribution. Thus, our study uncovers a glia-mediated and neural-activity-regulated control of brain lymphatic development and highlights the importance of inter-tissue cellular cooperation in development.

Technical route

Multiple technical approaches reveal the mechanism of neural activity regulating lymphatic system development via glial cells

Construct transgenic zebrafish lines, investigate neural activity effects on mulEC development through pharmacological inhibition, eye removal, and electrical stimulation

scRNA-seq and transgenic zebrafish lines identify major sources of Vegfc in the brain

RA cell functional loss and specific pathway blockade experiments to investigate mulEC developmental mechanisms

Multiple wet lab experiments validate neural activity and RA mechanisms in brain lymphatic system development

Knockout of *ccbe1* in fibroblasts and Vegfc overexpression in RAs to investigate mulEC localization on brain surface

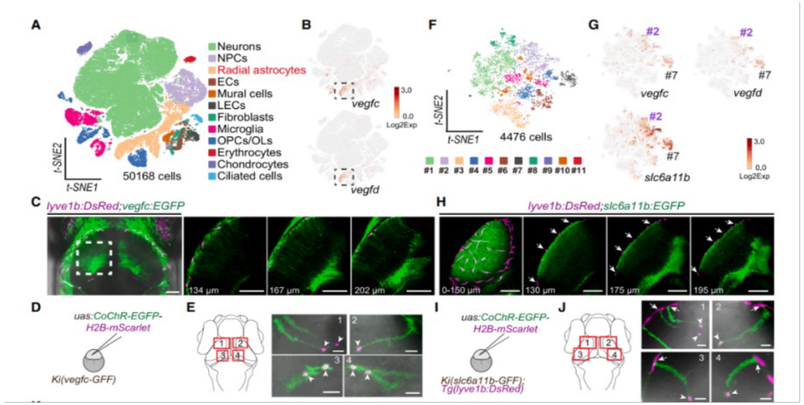


Fig 4. *slc6a11b*+ RAs are the main source of Vegfc/Vegfd in the brain

Selected Publications

No.	Year of Publication	Journal	Impact Factor	Article Title	Species	Sample / Tissue	Services provided
1	2025	*Signal Transduction and Targeted Therapy*	52.7	Preclinical and first-in-human of purinostat mesylate, a novel selective HDAC I/IIb inhibitor, in relapsed/refractory multiple myeloma and lymphoma	Mouse	Bone marrow cells	10x Single Cell 3'; Bulk RNA-seq
2	2025	*Nature*	48.50	Amplifying antigen-induced cellular responses with proximity labelling	Mouse	Subcutaneous tumor	10x Single Cell 3'
3	2025	*Science*	45.8	Microglia replacement halts the progression of microgliopathy in mice and humans	Mouse	Brain	10x Single Cell 3'
4	2025	*Cell*	42.5	Anti-BCMA CAR-T therapy in patients with progressive multiple sclerosis	Human	Cerebrospinal fluid (CSF), PBMCs, bone marrow	10x Single Cell 5'
5	2025	*Cancer Discovery*	33.30	Molecular and immune correlates of response to first-line de-escalated chemotherapy plus penpulimab and anlotinib in advanced cervical cancer	Human	Cervical caancer (FFPE)	10x Flex

No.	Year of Publication	Journal	Impact Factor	Article Title	Species	Sample / Tissue	Services provided
6	2025	*iMeta*	33.2	Single - cell sequencing reveals the role of IL - 33+ endothelial subsets in promoting early gastric cancer progression	Human	Gastric cancer	10x Single Cell 3'; Bulk RNA-seq
7	2026	*Theranostics Nature Communications*	13.30	Pathogenomic analysis reveals clinically relevant epithelial-mesenchymal plasticity in esophageal squamous cell carcinoma	Human	Esophageal cancer	10x Visium HD
8	2025	*Neuron*	15.7	Single-nucleus transcriptomics reveal the morpho-genesis and artemisinin biosynthesis in Artemisia annua glandular trichomes	Artemisia annua	Leaf	10x Single-Nucleus RNA-seq
9	2025	*Leukemia*	15.00	Globally patterned locus coeruleus-norepinephrine neuron-pericyte coupling orchestrates brain-wide vascular dynamics	Zebrafish	Brain pericytes	10x Single Cell 3'
10	2025	*Journal of Animal*	13.40	asxl1 C-terminal truncation and SRSF2 mutation drive leukemogenesis via immune reprogramming	Zebrafish	Kidney	10x Single Cell 3'
11	2026	*Science and* Biotechnology	6.5	Dissecting the development of bovine testicular tissue using spatial transcriptomics	Cattle	Testis	STOmics Stereo-seq