VULTR

Case Study

ImmunoPrecise Antibodies Accelerates Therapeutic Discovery with Vultr

Enabling rapid scalability and cost efficiency for breakthrough biopharma innovation

ImmunoPrecise Antibodies (IPA) is a techbio company leveraging multi-omics modeling and advanced artificial intelligence through proprietary technologies to support the discovery and development of therapeutic antibodies. Known for solving complex industry challenges, IPA provides an integrated end-to-end suite of capabilities for biopharma innovation.

IPA's collaboration with Vultr has enabled rapid scalability and cost efficiency, supporting its mission to advance therapeutic discovery while maintaining compliance and performance standards.

Powering innovation in therapeutic antibodies

IPA partners with 19 of the top 20 pharmaceutical companies and serves over 700 active customers, including biotechs, institutions, and venture capital firms. To meet the demands of the healthcare and life sciences sectors, IPA needed a cloud partner that could provide speed, execution, and scalability.

"Our industry is evolving rapidly, and we needed a cloud provider that could keep up," says Frédéric Chabot, Head of Corporate Development at ImmunoPrecise Antibodies.

IPA faced the challenge of scaling its infrastructure to support complex AI modeling while ensuring compliance with standards like GDPR, ISO27001, SOC2, NIST, and NIS2. They also required features such as managed Kubernetes, automated provisioning, and transparent billing.

IpA

Industry

Healthcare and life sciences

About IPA Therapeutics

ImmunoPrecise Antibodies (IPA) is a techbio company leveraging multi-omics modeling and AI-driven discovery to accelerate therapeutic development. IPA provides an end-to-end suite of capabilities to tackle complex challenges in biopharma innovation.

ipatherapeutics.com

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Meeting IPA's advanced cloud requirements

Vultr emerged as the ideal cloud partner by offering a comprehensive suite of solutions tailored to IPA's needs. Key features that influenced IPA's decision to choose Vultr included:

- Managed Kubernetes for seamless container orchestration and scalability.
- Automated provisioning to instantly upscale or decommission resources as needed.
- Compliance and security with global coverage and support for GDPR-compliant regions.
- Cost efficiency and availability of GPU configurations, including NVIDIA and AMD options, not found on AWS.
- Terraform integration for custom providers and an Infrastructure-as-Code approach.

Expanding AI workloads with next-gen GPUs

Currently, IPA is testing NVIDIA H100s and AMD MI300x GPUs to train a diffusion model for de-novo antibody generation, where the target and template of the binder are known, but the CDRs need to be generated from scratch by the model. Beyond antibody applications, IPA's broader AI-driven initiatives require substantial GPU resources for fine-tuning and training complex models across multiple domains.

Other pipelines that rely heavily on GPU compute include structure prediction (epitope mapping and epitope binning), LLM sequence embeddings (hit expansion, Retrieve&Relate), LLM text embeddings (Article Lens), molecular dynamics simulations, affinity maturation, and other AI-driven workflows. As IPA continues to expand its machine learning and deep learning capabilities, GPU usage is expected to increase, reinforcing the need for scalable, high-performance cloud infrastructure.

Leveraging Vultr's robust cloud infrastructure

IPA utilizes a variety of Vultr's products, including Cloud Compute, GPU Cloud, Object Storage, and Direct Connect, with plans to integrate Managed Kubernetes services soon. Their application architecture is built on a SaaS platform with a React frontend and Golang microservice backend, orchestrated using tools like Cromwell, Meta, and Airflow.

This robust infrastructure enables IPA to support AI-driven analysis pipelines and complex multi-omics modeling, which is crucial for advancing therapeutic antibody discovery.

Driving cost efficiency and multicloud flexibility

As part of its broader multi-cloud strategy, IPA benefits from Vultr's cost-efficient egress/ingress for data transfer and a consistent performance baseline, ensuring seamless integration across platforms. This approach allows IPA to maximize flexibility while harnessing Vultr's advanced compute capabilities to drive innovation in therapeutic discovery.

Cost efficiency was also a key consideration in IPA's decision to expand its cloud infrastructure with Vultr. By leveraging Vultr's platform, IPA estimates cost savings of 50-66% compared to other cloud providers. Additionally, Vultr's transparent and predictable billing structure enables IPA to optimize operational costs while maintaining scalability.

Looking to the future with AI and cloud innovation

IPA plans to expand its use of AI to enhance its therapeutic discovery process further. With Vultr's scalable infrastructure and on-demand GPU capabilities, IPA is well-positioned to innovate and grow in the rapidly evolving biotech landscape.

Results and impact

By leveraging Vultr's advanced cloud solutions, IPA is expecting significant cost savings, enhanced scalability, and the flexibility to pursue a multi-cloud strategy. As they continue to innovate in therapeutic antibodies, Vultr remains a strategic partner in driving growth and impact in healthcare and life sciences.