

GPUs Help Athos Discover Next-Generation Treatments and Medicine

Pioneering biotech company deploys NVIDIA HGX™ H100 on Vultr

Athos Therapeutics, Inc. is a pioneering biotechnology company dedicated to unraveling the complexities of autoimmune and cancer biology through molecular-level analysis. Their innovative drug development platform leverages a vast repository of high-quality patient samples and data from leading global hospital systems. Using a systems biology approach, Athos develops precision therapeutics, focusing on first-in-class treatments tailored to specific molecular subtypes of diseases.

“The Athos platform identifies novel drug targets by integrating clinical and molecular datasets into disease interactomes and matches them to its small-molecule computational chemistry platform. To date, Athos has analyzed samples from more than 25,000 human patients and identified novel drug targets across different autoimmune diseases and cancer, including our lead compound ATH-063,” said Dr. Dimitra Chalkia, VP of Computational Biology at Athos.

This process enables Athos to pinpoint key hubs within these networks and align them with its advanced small-molecule computational and medicinal chemistry platforms. The cornerstone of Athos’s innovation is its fully autonomous AI analytical platform.

The three Athos founders include: a key figure behind two multi-billion-dollar FDA-approved drugs (Xtandi and Erleada), one of the founders of Kite Pharma, and the discoverer of the miR-124 drug target currently in a Phase III trial for Inflammatory Bowel Disease (IBD). Athos’ flagship compound, ATH-063, is being developed for IBD, and their robust pipeline features small molecule therapies aimed at various autoimmune diseases and cancers.

Dimitrios Iliopoulos,
PhD MBA, President
and CEO, Athos

“Athos is committed to providing novel precision therapeutics for patients with autoimmune diseases and cancer. The combination of Vultr Cloud GPU, accelerated by NVIDIA, and Dell infrastructure enables us to achieve our aims. Our AI computational teams are excited about collaborating with Vultr.”



Industry

Biotechnology and medicine

About Athos Therapeutics

Athos Therapeutics Inc. is a clinical-stage biotechnology company pioneering the development of artificial intelligence-based precision small molecule therapeutics for patients with immune-mediated diseases and cancer

athostx.com

The challenge: Finding the right cloud provider to support medical breakthroughs

The Athos platform requires reliable access to GPUs to train AI algorithms. When searching for a cloud provider, Athos sought a platform that could offer:

- Scalable and agile solutions that can adapt to hardware upgrades and reduce the risk of limited technical support and increasing long-term costs
- A user-friendly interface allowing for simple interactions with computational resources
- Cost efficiency by eliminating the need to build, operate, and maintain their data centers – saving significantly on hardware, utilities, and maintenance expenses
- Engineering support and maintenance for hardware failures, driver, and software dependency issues
- Disaster recovery in the event of hardware or software failures – crucial for recovering data and AI algorithm checkpoints
- Security and confidentiality for intellectual property, omics data, and proprietary AI algorithms
- Monitoring and management for optimizing resources and increasing hardware utility rates and efficiencies

Athos takes flight with Vultr

Athos previously utilized public cloud platforms for training algorithms, but the pricing structure was high, and the support from engineering teams was limited. As Athos' data needs grew and operations scaled, they needed a new cloud solution. Athos was introduced to Vultr through their work with Dell Technologies. The solution: utilizing NVIDIA HGX™ H100 GPUs on Vultr Cloud GPU.

“Because our datasets continue to grow every year, Vultr and Dell’s scalable and secure NVIDIA GPU infrastructure enables us to train such large datasets for precision medicine on autoimmune diseases and cancer,” said June Guo, VP of Artificial Intelligence & Machine Learning at Athos.

“NVIDIA H100 Tensor Core GPU with the transformer engine allows us to train large models with mixed precision and great performance improvement, which makes the iteration of our AI model development much faster.”

“Besides reliable access to NVIDIA HGX™ H100s, the excellent Vultr engineer support minimizes downtime and maximizes our productivity,” said Guo.

Bringing medical innovation within reach with GPUs

By harnessing the power of the latest NVIDIA GPUs on Vultr’s platform, Athos can scale their work to discover life-saving medicines and accelerate medical innovation.

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AI is powering tomorrow’s treatments, helping to aid in drug discovery and development, genomics and precision medicine, and clinical imaging. Vultr Cloud GPU, powered by NVIDIA, brings advanced AI and machine learning capabilities within reach of businesses at the forefront of these developments, like Athos.

“Athos has developed state-of-the-art patient sample procurement, machine learning, and artificial intelligence platforms for unbiased omics analysis, medicinal chemistry, and AI-driven patient stratification for targeted clinical trials. Collectively, these advances power truly precision drug development. By partnering with Dell and Vultr we have now added high-performance infrastructure to expand and protect our advances,” said Keith B Hoffman, PhD, CBO of Athos.

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