DNAnexus®
Titan™

Multi-omics Data Management and Analysis for Pharmaceutical Research & Development

The Promise & Challenge of Multi-Omics Data

Genomics, transcriptomics, and other omics data are becoming increasingly integrated in the drug discovery and development process— giving scientists the opportunity to radically improve our understanding of disease etiology and develop new treatments. These data are incredibly rich resources, but many legacy informatics tools can't keep up with their growing size and complexity. Leveraging multi-omics datasets requires working within an informatics environment designed to handle unprecedented scale, reduce data silos, streamline collaboration, and manage the burden of ever-changing regulatory and security requirements.

Streamline Data Management & Analysis

DNAnexus Titan™ is a flexible, cloud-based solution that brings multi-omics data and pipelines together in one place for streamlined analysis. DNAnexus Titan powers a standardizable, scalable, and secure environment for secondary analysis and other compute intensive operations, allowing your team to focus on what's important—advancing R&D and accelerate time-to-results.

- ✔ **Leverage parallel and cluster computing**

- ✔ **Streamline data exchange with external partners and service providers**

- ✔ **Build reproducible, standardized and portable pipelines**

- ✔ **Safeguard data & mitigate compliance risk**

- ✔ **Support GxP processes**

> " *DNAnexus saves the bioinformatican's time as well as compute time, and therefore decreases turnaround time. This enables R&D researchers to answer questions and get rare disease treatments to market faster. You can't put a price tag on that.*

Sean Daughtery
Director, Bioinformatics, Ultragenyx

ultragenyx
pharmaceutical

DNAnexus®

DNAnexus Titan™ makes it easy to scale collaborative next-generation sequencing data analysis—all in a secure and compliant environment.

Scalability & Performance

DNAnexus Titan is designed to scale to handle complex analysis of huge datasets, while ensuring optimal performance, with large-scale data processing technologies such as Spark.

Data Sharing, Collaboration & Access Control

Collaborate across the hall or international borders seamlessly. Share data, pipelines, and analysis results with role-based permissioning and access controls. **DNAnexus Titan** provides a centralized, secure environment for researchers to manage access by file, project, and user level.

File-Based Data Management & Traceability

DNAnexus Titan's file management tools enable users to easily add metadata, define user access rules, and track data provenance, making data Findable, Accessible, Interoperable and Reusable (FAIR).

Comprehensive Analytical Tools

DNAnexus Titan comes with ready-to-use common genomics, transcriptomics, association and other analysis pipelines. An open SDK supports users to build their own custom applications using preferred programming languages. Developers can move custom workflows and apps to the cloud using industry-standard workflow description and management systems including Docker, CWL/WDL, and Nextflow.

Data Science & Machine Learning

DNAnexus Titan includes embedded JupyterLab with python, R and Bash support. Pre-installed packages accelerate genomics and statistical analysis, and support machine learning algorithms. Easily install additional packages to expand data science capabilities.

Data Visualization Support

Support multiple approaches to provide rich visualization capability, including support for IGV genome browser, and RShiny apps, all in the controlled and secure environment.

Industry-Leading Security & Compliance

DNAnexus Titan meets the industry's most stringent security and privacy requirements. The platform undergoes regular independent audits using the ISO27001, NIST 800 series frameworks, and is compliant with HIPAA, GDPR, EU 2017/746, CAP/CLIA regulations & more.

Quality Systems

DNAnexus Titan is 21 CFR § 11 (Annex 11) compliant with respect to electronic records and is supported with Quality Systems aligned with 21 CFR § 820 and ISO 13485.