

Improving Omics Data Exploration and Collaboration Efficiency with DNA Nexus Omics Data Catalog

The Problem:

Biopharma companies increasingly depend on multi-modal omics data to drive innovation, discover biomarkers, and accelerate drug development. However, managing extensive datasets generated internally and through external collaborations is complex, expensive, and prone to errors. Metadata is often unstructured, dispersed across systems, and inconsistently standardized, making data discovery cumbersome and hindering collaboration internally and externally. Traditional methods relying on file naming, tags, or manual searches are inefficient, limiting the potential insights derived from valuable datasets.

The Need:

Biopharma requires a centralized, robust metadata management platform that simplifies the organization of diverse datasets, enables quick data discovery, enhances seamless collaboration internally and externally, and ensures precise compliance controls.



KEY TAKEAWAYS:

- Rapidly identify and reuse critical omics datasets, saving valuable time in your research workflow.
- Streamline internal and external collaborations by simplifying data sharing and access.
- Ensure compliance and protect sensitive information through robust, precise access controls.
- Improve data consistency and quality, reducing errors through structured and standardized metadata.
- Enhance your research capabilities with seamless integration into the DNA Nexus Trusted Research Environment (TRE).

Omics Data Catalog								
No Filters Applied								
<div> <div>Study</div> <div>Subject</div> <div>Sample</div> <div>Assay</div> <div>Data Object</div> </div>								
Sample ID	Sample Name	Sample Type	Accession ID	Tissue	Collection Date	Subject ID (Related)	Study ID (Related)	
<input type="checkbox"/> e-4e8117f9-5eac-4f58-a496-95c184a2466	Sample_name_16	Blood Draw	AccessionID_01	Blood	2021-12-04	Subject_1	Study Name 1 ID-001	
<input type="checkbox"/> e-f8f0d53d-70ad-4e47-b606-4d9d42e97dba	Sample_name_13	Tissue Biopsy	AccessionID_06	Tumor Tissue	2013-07-23	Subject_6	Study Name 3 ID-003	
<input type="checkbox"/> e-e180aef-435a-4d54-a9be-7c6355c856e4	Sample_name_10	Blood Draw	AccessionID_05	Blood	2018-09-01	Subject_5	Study Name 3 ID-003	
<input type="checkbox"/> e-c33449ac-4d86-48ac-b33c-bc876705b1d	Sample_name_17	Throat Swab	AccessionID_09	Lymphoid	2017-07-27	Subject_9	Study Name 5 ID-005	
<input type="checkbox"/> e-b951364-6fe7-4dd7-8022-a7933bbf6517	Sample_name_08	Blood Draw	AccessionID_04	Blood	2021-02-09	Subject_4	Study Name 2 ID-002	
<input type="checkbox"/> e-b867dfb1-c528-4db4-bc4c-6e7954afbb87	Sample_name_01	Blood Draw	AccessionID_01	Blood	2018-03-30	Subject_2	Study Name 1 ID-001	
<input type="checkbox"/> e-7575aade-60bc-4e8d-9562-39257aa00cf4	Sample_name_02	Blood Draw	AccessionID_02	Blood	2021-11-30	Subject_2	Study Name 1 ID-001	
<input type="checkbox"/> e-6ff0652e-3712-4276-a76b-9a0b073ca54e	Sample_name_19	Throat Swab	AccessionID_10	Lymphoid	2022-04-23	Subject_10	Study Name 5 ID-005	
<input type="checkbox"/> e-6e2a0f0a-c9d0-4f2c-983b-fa8b64b4367f	Sample_name_05	Blood Draw	AccessionID_08	Blood	2015-03-23	Subject_8	Study Name 4 ID-004	
<input type="checkbox"/> e-6bc07364-e504-479a-b412-70578a333ea1	Sample_name_15	Blood Draw	AccessionID_02	Blood	2013-04-08	Subject_1	Study Name 1 ID-001	
<input type="checkbox"/> e-6852c11-a64a-4de8-bbd8-48dc42980a6	Sample_name_18	Throat Swab	AccessionID_09	Lymphoid	2021-05-18	Subject_9	Study Name 5 ID-005	
<input type="checkbox"/> e-3cda1c93-751d-4415-9743-adde48d86316	Sample_name_11	Tissue Biopsy	AccessionID_05	Tumor Tissue	2021-05-11	Subject_5	Study Name 3 ID-003	
<input type="checkbox"/> e-3cf82c5c-4762-4949-a68a-fbd321e99011	Sample_name_04	Tissue Biopsy	AccessionID_07	Tumor Tissue	2013-05-09	Subject_7	Study Name 4 ID-004	

Our Solution:


The DNAnexus Omics Data Catalog (ODC) is a centralized, intuitive platform enabling structured and scalable management of omics data and metadata. ODC provides:


- A flexible metadata schema that is extensible and supports business-specific concepts.
- A robust, user-friendly interface enabling faceted and keyword searches to quickly locate relevant data across organizational boundaries.
- Simplified metadata ingestion using an intuitive loader application, allowing seamless updates and ensuring data integrity.
- Advanced access controls to govern data visibility and usage, providing granular permissions tied directly to project roles.
- Integration within the DNAnexus Trusted Research Environment, enhancing secure collaboration with internal teams and external research partners.


Advance your therapeutic area research and external innovation capabilities by implementing the DNAnexus Omics Data Catalog. Experience firsthand how structured metadata management and enhanced data discovery can streamline your research processes, drive faster insights, and support secure collaboration within your Trusted Research Environment. Contact DNAnexus to schedule a demonstration or to learn more about getting started with ODC.


YOUR BENEFITS AND KEY OUTCOMES:


Implementing the Omics Data Catalog empowers biopharma organizations to:

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Accelerate research cycles by dramatically reducing the time required to find and reuse high-value omics datasets.
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Improve collaboration by providing a standardized, transparent metadata environment accessible to diverse internal teams and/or external collaborators (provided they have proper access).
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Minimize redundancies and maximize data utility by avoiding unnecessary data regeneration and ensuring data consistency.
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Enhance compliance and security with controlled access aligned precisely with organizational requirements.
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Facilitate seamless integration with existing workflows, complementing and extending current bioinformatics and analytical tools.