

MODULES

Overview

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Chandra Lab
Burdenoff

Welcome back, Vignesh

Projects, experiments, data and the bench — one governed, reproducible research workspace.



12

Projects



34

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21

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9

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58

Notebook entries



6

Analysis pipelines



143

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11

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Recent activity

View all >



AR

Dr. Anita Rao signed notebook entry 'Run 3 observations'.

28m ago

Notebook • [Run 3 observations](#)



Pipeline 'Variant calling' SUCCEEDED over dataset v2.

1h ago

Pipelines • [Variant calling](#)



New dataset 'scRNA-seq – Batch 3' uploaded.

2h ago

Datasets • [scRNA-seq – Batch 3](#)



Cas9 protein dropped to LOW stock (2 vials).

3h ago

Inventory • [Cas9 Protein](#)



VT

You created experiment 'CRISPR Knockout – Rep 2'.

5h ago

Experiments • [CRISPR Knockout – Rep 2](#)

View all activity



Quick actions



New project

Create a new research project



New experiment

Design and run an experiment



New notebook entry

Document your research



Run a pipeline

Execute an analysis pipeline



Projects

New project

Search projects...

Status: All

Field: All

Name	Field	Status	Principal Investigator	Start Date	Updated	
CRISPR Off-Target Screen	Genomics	ACTIVE	Dr. Anita Rao	2026-02-10	2026-05-08	
Proteomics Biomarker Study	Proteomics	ACTIVE	Dr. Sanjay Mehta	2026-03-01	2026-05-07	
Materials Fatigue Analysis	Materials	PLANNING	Dr. Rao	2026-06-15	2026-05-05	
Microbiome Longitudinal	Microbiology	ON_HOLD	Dr. Iyer	2026-01-20	2026-05-01	
Vaccine Stability Panel	Immunology	COMPLETED	Dr. Mehta	2025-11-30	2026-04-28	

← Projects

CRISPR Off-Target Screen

ACTIVE

Edit

Archive

genomics

cas9

off-target

Field	Code	End date
Genomics	CR-001	—
Principal investigator	Start date	Visibility
Dr. Anita Rao	2026-02-10	Workspace

Screen candidate guide RNAs for off-target cleavage across the genome.

Experiments (3)

New experiment

Title	Status	Lead	Updated	
gRNA efficiency panel	RUNNING	Dr. Rao	2h ago	⋮
Western blot validation	ANALYSIS	Dr. Mehta	1d ago	⋮
qPCR replicate series	COMPLETE	Dr. Iyer	3d ago	⋮

Projects

All projects

Archived

Name

CRISPR Activation Study

CR-002

Single-cell Atlas

SC-045

Protein Structure Mapping

PSM-019

Metabolomics Profiling

MP-003

Viral Vector Optimization

VV-007

Spatial Transcriptomics

ST-021

Immunotherapy Targets

IT-008

1-7 of 24 projects

New Project

Create a research project to hold experiments, datasets, and the notebook.

Name *

CRISPR Off-Target Screen

Code *

CR-001

Field *

Genomics

Description

Screen candidate guide RNAs for off-target cleavage.

Start date *

2026-02-10

End date

Select date

Principal investigator *

Dr. Anita Rao

Tags

genomics

cas9

Add tag...

Cancel

Create project

Search projects...

+ New project

PI

Updated

Dr. Anita Rao

2026-05-09

Dr. Miguel Santos

2026-05-08

Dr. Sarah Chen

2026-05-07

Dr. James Lee

2026-05-06

Dr. Priya Nair

2026-05-05

Dr. Elena Garcia

2026-05-04

Dr. David Kim

2026-05-03

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MAIN

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Workspace storage

68.4 GB / 200 GB

Experiments

+ New experiment

Search experiments...

Project: All

Status: All

Title	Project	Status	Lead Researcher	Updated	
gRNA efficiency panel	CRISPR Off-Target Screen	RUNNING	Dr. Rao	2h ago	
Protein purification – batch 7	AlphaFold Validation	ANALYSIS	Dr. Mehta	5h ago	
CRISPR knockout – TP53	Cancer Gene KO	COMPLETE	Dr. Chandra	1d ago	
Single-cell RNA-seq (PBMCs)	Immunology Atlas	ANALYSIS	Dr. Nair	2d ago	
Enzyme kinetics – Variant A	Enzyme Engineering	DESIGN	Dr. Kapoor	3d ago	
Nanoparticle stability study	Drug Delivery Platform	RUNNING	Dr. Singh	4d ago	
Metabolomics – Liver tissue	Toxicology Panel	COMPLETE	Dr. Iyer	5d ago	
Stress assay – Materials	Materials Fatigue Analysis	ABANDONED	Dr. Iyer	1w ago	

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Help & Support



← Experiments

gRNA efficiency panel

RUNNING

▶ Start run

✎ Edit

1 DESIGN

→

2 RUNNING

→

3 ANALYSIS

→

4 COMPLETE

Project

CRISPR Off-Target Screen

Lead researcher

Dr. Anita Rao

Protocol

gRNA Transfection v1

Hypothesis

gRNA-A gives higher on-target efficiency than gRNA-B

Variables

📄 Copy

1 {

2 "cell_line": "HEK293T",

3 "concentration_nM": 50,

4 "replicates": 3

5 }

Runs (4)

#	Status	Started	Completed	
Run 4	✓ SUCCEEDED	May 22, 2024 09:00	May 22, 2024 11:20	Details >
Run 3	✓ SUCCEEDED	May 21, 2024 09:05	May 21, 2024 11:18	Details >
Run 2	⚠ FAILED	May 20, 2024 09:02	May 20, 2024 10:11	Details >
Run 1	⊖ CANCELLED	May 19, 2024 08:45	May 19, 2024 08:50	Details >

+ New run

⋮

Run 4

IN PROGRESS

Started
May 12, 2025 9:14 AM

Operator
Avery Davis

Replicate
3

View run details

→

Steps

- 1 Transfection 
- 2 Selection 
- 3 PCR Analysis 
- 4 Gel Electrophoresis 
- 5 Data Analysis 



Complete run — Run 4

Record a terminal status and observations for this run.

Outcome



SUCCEEDED



FAILED



CANCELLED

Notes

85% on-target efficiency; clean bands

Observations (JSON)

{ } Format

```
1 {
2   "efficiency_pct": 85,
3   "bands": "expected",
4   "replicate": 3
5 }
```

Enter valid JSON — or plain text is stored as a note.

Cancel

✓ Complete run

MODULES

📖

Notebook

🗂

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⏪

Collapse

Lab notebook

A signable, witnessable record of your research.

+

New entry

🔍

Search entries...

Status: All



Run 3 observations

Bands at expected size; 85% efficiency.



SIGNED

📅

signed 2026-07-02

by Dr. Rao



Transfection setup

Seeded HEK293T at 70% confluency.



WITNESSED

📅

witnessed 2026-07-01

by Dr. Mehta



Protein purification trial

Optimized imidazole gradient; improved yield.



SUBMITTED

📅

submitted 2026-06-30

by Dr. Chandra



CRISPR guide design

Designed 3 guides targeting exon 4.



DRAFT

📅

last edited 2026-06-28

by You



Old protocol (discarded)

Initial lysis buffer had high background.



VOID

📅

voided 2026-06-15

by Dr. Rao



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[← Lab notebook](#)

Run 3 observations


SIGNED


Sign


Witness

Overview

Status


SIGNED

Author


Dr. Anita Rao

Created


2026-07-02

Experiment


[gRNA efficiency panel](#)

Run


7538e7d6...



Record

Observed clean bands at the expected size on the gel. Estimated 85% on-target efficiency for gRNA-A vs 60% for gRNA-B. No off-target signal detected in this replicate.

Integrity



Signed by


Dr. Anita Rao


2026-07-02 14:37



Witnessed by


Dr. Sanjay Mehta


2026-07-02 16:05

Attachments (2)



gel_image_run3.png
PNG • 1.24 MB



raw_intensities.csv
CSV • 45.6 KB



- All entries
- 86
-  Run 4 observations
gRNA efficien...
-  PCR validation r...
gRNA efficien...
-  Ligation reaction
gRNA cloning
-  Run 3 observations
gRNA efficien...
-  Oligo quality chec...
gRNA efficien...
-  New gRNA design
CRISPR knock...
-  Efficiency calcul...
gRNA efficien...

Search notebook entries...

Filter

New entry

New notebook entry

Capture observations, link the work, and attach files.

Title

Run 4 observations

Body

Bands at expected size; 85% efficiency...

Experiment

gRNA efficiency panel

Run (optional)

Run 4

Attachments

gel_image_run4.png

1.2 MB

✓

✕

Drag and drop files here or [click to browse](#)

Tags

gel ✕ efficiency ✕

Add tags to help organize and find this entry later.

Cancel

Create entry

TAGS

UPDATED

cloning

pcr

2h ago

gel

analysis

5h ago

notes

ideas

1d ago

gel

efficiency

1d ago

qc

1d ago

protocol

2d ago

data

figures

3d ago

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Storage 128 GB / 500 GB



Burdenoff / Chandra Lab / My Project



VT



Protocols

Versioned, reusable methods — publish to freeze a version.

+ New protocol

Search protocols...

Status: All

Name	Status	Version	Estimated Time	Updated
 Western Blot Detect and analyze specific proteins.	PUBLISHED	v3	🕒 90 min	2026-06-20 >
 gRNA Transfection Transfect cells with gRNA constructs.	DRAFT	v1	🕒 45 min	2026-07-01 >
 RNA Extraction (TRIzol) Isolate total RNA using TRIzol reagent.	PUBLISHED	v2	🕒 60 min	2026-06-18 >
 Gram Staining Differential staining of bacterial cells.	DEPRECATED	v1	🕒 20 min	2026-05-10 >
 Mass Spec Sample Prep Prepare samples for mass spectrometry.	DRAFT	v1	🕒 120 min	2026-06-25 >

Showing 1 to 5 of 5 protocols

< 1 >

Western Blot

✓

PUBLISHED

v3

✎

Edit

+

Add step

🚀

Publish

🕒

Estimated time

90 min

🧪

Materials

PVDF membrane, RIPA buffer, primary antibody, HRP secondary

🛡️

Safety notes

BSL-2; handle methanol in fume hood

Steps (5)

1

PREPARATION

Lyse cells in RIPA buffer on ice (10 min)

⋮

2

MEASUREMENT

Quantify protein by BCA assay

⋮

3

PREPARATION

Load 20 µg per lane on SDS-PAGE gel [Critical]

⋮

4

INCUBATION

Transfer to PVDF, block 1h in 5% milk

⋮

5

ANALYSIS

Image chemiluminescence and quantify bands

⋮

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< Collapse

gRNA Transfection

No description

Steps

#
1
2
3
4
5

Notes

Add any notes about this protocol

No notes yet.

+ Add protocol step

Append an ordered, typed step to gRNA Transfection (draft).

Instruction

Seed HEK293T cells at 70% confluency in a 6-well plate.

56 / 1000

Kind

PREPARATION

Ordinal

1

Duration (min)

15

Critical step



Mark this step as critical for the protocol.

Cancel

Add step

Preview protocol

+ Add step

Reorder

DURATION

KIND

15 min

PREPARATION

10 min

PREPARATION

20 min

INCUBATION

5 min

MEASUREMENT

10 min

ANALYSIS

Datasets

Immutable, checksummed versions — provenance by construction.

+ New dataset

Search datasets...

Kind: All

Status: All



Name	Kind	Status	Latest version	Updated	
Sequencing reads (FASTQ)	RAW	ACTIVE	v3	2h ago	
Aligned BAM	PROCESSED	ACTIVE	v2	5h ago	
Gene expression counts	DERIVED	ACTIVE	v1	1d ago	
Sample metadata	METADATA	ACTIVE	v4	2d ago	
Variant calls (VCF)	DERIVED	ACTIVE	v2	3d ago	
QC metrics summary	ANALYTICS	ACTIVE	v1	5d ago	
Imaging data (OME-TIFF)	RAW	ACTIVE	v5	6d ago	

Showing 1 to 10 of 16 datasets

<

1

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>

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Burdenoff / Chandra Lab / My Project

Search...

K



VT



← Datasets



RAW

Sequencing reads (FASTQ)

● ACTIVE

Archive

+ Add version



Project
CRISPR Off-Target Screen



Latest version
v3



Kind

RAW



Versions (3)

VERSION		CHECKSUM (SHA-256)		ROWS	SIZE	CHANGE NOTES
● v3	reads_v3.fastq.gz	sha256:9ad5b7...e0		12,480,332	5.2 GB	added lane 4 reads — 2h ago
● v2	reads_v2.fastq.gz	sha256:6f3c2a...91		10,734,221	4.1 GB	reprocessed lane 3 — 2d ago
● v1	reads_v1.fastq.gz	sha256:2b8e91...c4		8,945,112	3.6 GB	initial import — 5d ago



v3 is used by pipeline run of 'Variant calling'. [↗](#)

Name
 Sequencing reads (FASTQ) FASTQ
 RNA-seq counts CSV
 Protein quantification PARQUET
 Metabolomics (raw) RAW
 Imaging results OME-TIFF

Showing 1 to 5 of 23 results



Add dataset version

Register a new immutable version of 'Sequencing reads (FASTQ)'.

Attachments



Drag and drop files here, or [click to browse](#)
Supports FASTQ, FASTQ.GZ, GZ up to 50 GB



reads_lane4.fastq.gz — 5.2 GB



stored in Files



✓ Upload complete

Change note

added lane 4 reads

18 / 500

Checksum (SHA-256)

9ad5b775d4e3...



Row count

12,480,332

Size (bytes)

5242880000

Cancel

Add version

Latest version	Updated	Size
v3.1.0	May 12, 2024 2:43 PM	12.6 GB
v2.0.0	Apr 28, 2024 10:15 AM	320 MB
v1.4.2	Apr 15, 2024 9:02 AM	2.3 GB
v1.0.1	Mar 22, 2024 4:11 PM	8.7 GB
v2.2.0	Feb 10, 2024 11:37 AM	16.1 GB

< 1 2 3 >

Refresh

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Pipelines

Reproducible analysis over a pinned dataset version.

+ New pipeline

▶ Run pipeline



Variant calling

nextflow

v1.4

● Active



RNA-seq DE

snakemake

v2.0

● Active



QC & trimming

bash

v1.1

● Active



Recent pipeline runs

Pipeline	Status	Dataset version	Started	Finished	
Variant calling	✓ SUCCEEDED	Sequencing reads v3	09:12	09:58	View run details and log
RNA-seq DE	⋯ RUNNING	Aligned BAM v2	10:20	—	View run details and log
QC & trimming	⌚ QUEUED	Sequencing reads v3	—	—	View run details and log
Variant calling	✗ FAILED	Sequencing reads v2	08:00	08:03	View run details and log

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Next >

Pipelines

Build, run and share reproducible pipelines

Search pipelines...

All Mine Share

Name
 Variant calling nextflow v1.4
 RNA-seq quantification nextflow v2.1
 ChIP-seq peak calling nextflow v1.2
 Metagenomics profiling nextflow v3.0
 ATAC-seq analysis nextflow v1.3
 Small RNA analysis nextflow v1.1



Run a pipeline

Reproducible run over an exact dataset version.

Pipeline

 Variant calling (nextflow v1.4)

Dataset (optional)

 Sequencing reads (FASTQ)

Dataset version (optional)

 v3 · sha256:9ad5b7... · 12.4M rows

Parameters (JSON)

```
1 {
2   "reference": "GRCh38",
3   "caller": "gatk4",
4   "emit": ["vcf", "metrics"],
5   "filters": {
6     "min_base_quality": 20,
7     "min_mapping_quality": 30,
8     "min_depth": 10
9   },
10  "resources": {"cpus": 8, "memory": "32 GB"}
11 }
```

 Pinning a version makes this run fully reproducible.

Cancel

 Run pipeline

+ New pipeline

Filters

Last updated	Updated by
May 12, 2024	AR Alex Rivera
Apr 28, 2024	EZ Emily Zhang
Apr 15, 2024	MC Michael Chen
Apr 10, 2024	PN Priya Nair
Mar 30, 2024	AR Alex Rivera
Mar 18, 2024	EZ Emily Zhang

LS LabsOfScienceAccelerate discovery

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VT Vignesh T.VResearcher

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Pipelines

Pipeline runs

Monitor and manage your pipeline runs.

Search runs...

All pipelines

All statuses

Run ID	Pipeline	Status	Started
PR-2025-00124	Variant calling (nextflow)	SUCCEEDED	Today, 09:12
PR-2025-00123	RNA-seq quantification	SUCCEEDED	Today, 02:41
PR-2025-00122	FASTQ QC	FAILED	Yesterday, 21:03
PR-2025-00121	ChIP-seq peak calling	SUCCEEDED	Yesterday, 17:36
PR-2025-00120	Metagenomics profiling	RUNNING	Yesterday, 14:18
PR-2025-00119	Assembly (spades)	SUCCEEDED	May 19, 2025
PR-2025-00118	Structural variant calling	CANCELLED	May 19, 2025
PR-2025-00117	Methylation analysis	SUCCEEDED	May 18, 2025

Showing 1 to 8 of 128 runs

<

1

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...

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>

Pipeline run details

SUCCEEDED

Pipeline

Variant calling (nextflow)

Dataset version

Sequencing reads v3 (pinned)

Output dataset

Variant calls (VCF) v1

Triggered by

Vignesh T.V

Time

Started: 09:12Finished: 09:58Duration: 46m

Run log

DAGInputsOutputsMetricsMetadata

Run log

Download log

1

[09:12]

Staging inputs from Files...

2

[09:12]

Resolving dataset version: Sequencing reads v3 (pinned)

3

[09:12]

Launching Nextflow 23.10.1

4

[09:13]

Containe: nf-core/variant-calling:2.4.0

5

[09:14]

Alignment complete (bwa-mem2)

6

[09:21]

Marking duplicates (sambamba)

7

[09:24]

Base quality score recalibration (GATK BQSR)

8

[09:31]

Calling variants (gatk HaplotypeCaller)

9

[09:56]

Indexing VCF (tabix + bcftools)

10

[09:57]

Wrote 48,201 variants → Variant calls (VCF) v1

11

[09:58]

Run SUCCEEDED.

View output dataset

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Chandra Lab
Workspace

Inventory

Reagents, consumables and samples with auto stock status.

[+ New item](#)

Category: All



Status: All



Item	Category	Status	Quantity	Reorder Level	Expiry	
Cas9 protein	REAGENT	LOW	2 vials	3	2026-12-01	...
Taq polymerase	REAGENT	IN_STOCK	24 units	5	2027-03-15	...
LB Agar	CONSUMABLE	IN_STOCK	15 bottles	5	2026-09-10	...
Pipette tips (1000 µL)	CONSUMABLE	LOW	1 box (96 tips)	2	2026-08-20	...
Patient Sample A12	SAMPLE	IN_STOCK	8 aliquots	2	2026-11-30	...
dNTP Mix (10 mM each)	REAGENT	OUT_OF_STOCK	0 units	10	2026-07-01	...
DMEM (High Glucose)	REAGENT	IN_STOCK	6 bottles	3	2026-10-05	...
96-well PCR Plate	CONSUMABLE	LOW	3 plates	5	2027-01-15	...

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1

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...

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8 per page



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AP Ava Patel
Researcher

All items

Consumables

248 items

Item



Cas9 protein
Cat. #LS-PRT-001



gRNA Scaffold
Cat. #LS-RNA-02



NEB 5x CutSmart
Cat. #LS-ENZ-01



LB Broth (1L)
Cat. #LS-MED-01



Ampicillin (50 mg)
Cat. #LS-ANT-01



96-Well PCR Plate
Cat. #LS-PLT-96

Adjust stock — Cas9 protein

Apply a signed change; status updates automatically



Current: 10 vials



Reorder level: 3



New: 2 vials **LOW**

Delta



-8



Negative to reduce stock, positive to increase.

Reason

Used in gRNA efficiency panel, Run 4



This adjustment drops Cas9 protein below its reorder level (LOW). A notification will be sent.

Cancel

Apply adjustment

Export

Status

Location

LOW

-80 °C Freezer 1
Rack A • Box 3

OK

-20 °C Freezer 2
Rack B • Box 7

OK

-20 °C Freezer 2
Rack B • Box 2

OK

Room Temp
Shelf 2

OK

-20 °C Freezer 3
Rack C • Box 1

OK

Room Temp
Cabinet 1

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< Collapse



Instruments

Shared equipment with bookings and overlap protection.

+ New instrument



Search instruments...

All status



All custodians



Confocal Microscope LSM-900

Zeiss LSM 900

● AVAILABLE

 Dr. Iyer

Book



Thermocycler T100

Bio-Rad T100

● IN_USE

 Dr. Rao

Book



Mass Spec Q-Exactive

Thermo Scientific

● MAINTENANCE

 Dr. Mehta

Book



Flow Cytometer Aurora

Cytek Aurora

● AVAILABLE

 Dr. Sen

Book



Plate Reader Synergy H1

BioTek Synergy H1

● IN_USE

 Dr. Kapoor

Book



Ultralow Freezer -80°C

Thermo TSX Series

● AVAILABLE

 Dr. Nair

Book

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Instruments



Confocal Microscope LSM-900

Zeiss LSM 900

AVAILABLE

Book instrument

Custodian
Dr. Iyer

Location
Imaging Suite B

Requires approval
Yes

Bookings (4)

Status	Start	End	Purpose	Experiment	
CONFIRMED	Aug 1 09:00	Aug 1 11:00	Image WB gels	gRNA efficiency panel	Cancel
CONFIRMED	Aug 2 13:00	Aug 2 15:00	Live-cell imaging	qPCR replicate series	Cancel
REQUESTED	Aug 3 10:00	Aug 3 12:00	Colocalization	—	Cancel
COMPLETED	Jul 28 09:00	Jul 28 10:30	Test scan	—	

Overlapping time windows are automatically rejected.

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-  **Instruments**

 Alex Kim
Research Team

 Help & support 

Instruments 12

Manage and book instruments

All Available

-  **Confocal Microscope**
LSM-900
ID: INST-0001
-  **Flow Cytometer**
BD LSRFortessa
ID: INST-0002
-  **qPCR System**
QuantStudio 7
ID: INST-0003
-  **Ultra-low temperature freezer**
Thermo ULT
ID: INST-0004

Showing 1 to 4 of 12 instruments

[+ Add instrument](#)

🔍 Search instruments 

Location	Status
Imaging Core Room 2.101	● Available
Flow Core Room 1.203	● In use
Molecular Core Room 1.110	● Available
Storage Room Room B.05	● Available

Book instrument — Confocal Microscope LSM-900

Reserve a time window; overlaps are rejected

Start time

 2026-08-04 09:00 

End time

 2026-08-04 11:00 

Purpose

Image Western blot gels

Experiment (optional)

gRNA efficiency panel 

Availability — August 4, 2026 

08:00

09:00

10:00

11:00

12:00

13:00

14:00

15:00

16:00

17:00

09:00 – 11:00
Available

✔

Selected time window is available.

Cancel

Book instrument

MAIN

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- [Projects](#)
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WORKSPACE

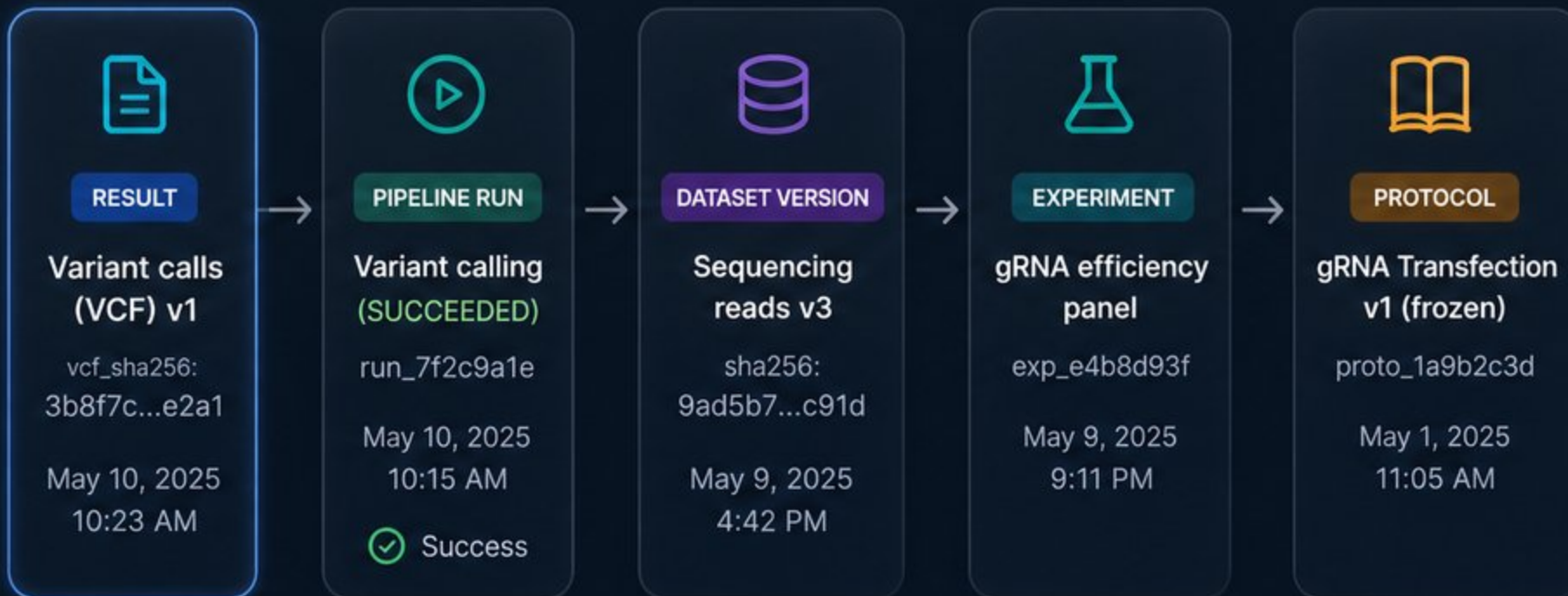
- [Files](#)
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Provenance & Reproducibility

Visualize the full lineage of this result and the exact context that produced it.

Provenance: Variant calls (VCF) v1

View as DAG



Result
Pipeline Run
Dataset Version
Experiment
Protocol



Every result traces back to the exact data version, experiment, and frozen protocol that produced it.

Details

Name

Variant calls (VCF) v1

Type

RESULT

ID

res_6c8d9e7f

Checksum (SHA-256)

3b8f7c8b6a2f4d1e9c0a7b6c8d...

Created

May 10, 2025 10:23 AM
(UTC-07:00)

Modified

May 10, 2025 10:23 AM
(UTC-07:00)

Actor

Dr. Anita Rao
anita.rao@chandra-lab.org

Workspace

Chandra Lab

Project

My Project

Storage Location

s3://burdenoff/chandra-lab/datasets/results/vcf/v1/

Download Provenance (JSON)

Overview

Welcome back, Sarah. Here's what's happening in your workspace.

crispr

PROJECTS

CRISPR Off-Target Screen

ACTIVE

EXPERIMENTS

gRNA efficiency panel

RUNNING

DATASETS

Sequencing reads (FASTQ) v3

PROTOCOLS

gRNA Transfection v1

DRAFT

NOTEBOOK

Run 3 observations

SIGNED

↑

↓

navigate

↵

open

esc

close

gRNA library prep

Experiment updated

2h ago

SC

Flow cytometry analysis

Notebook updated

3h ago

AM

Experiments Running

12

↗ 20% vs last week

Datasets

128

↗ 18% vs last week

My Projects

View all

CRISPR Off-Target Screen

ACTIVE

★

Cancer Cell Line Panel

PLANNING

☆

Protein Structure Mapping

ACTIVE

☆

MODULES

- 🏠

Overview
- 📁

Projects
- 🧪

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Inventory
- 🔬

Instruments

WORKSPACE

- 📁

Files
- 🏷️

Tags
- 💬

Conversations

📊

Analytics

Research Analytics

📅

Last 90 days

▼



Experiments completed

27

↗️ 35%

vs prior 90 days



Run success rate

82%

↗️ 8%

vs prior 90 days



Datasets versioned

41

↔️ 21%

vs prior 90 days



Avg time to sign

1.4 days

↘️ 12%

vs prior 90 days

Experiment throughput by week ⓘ



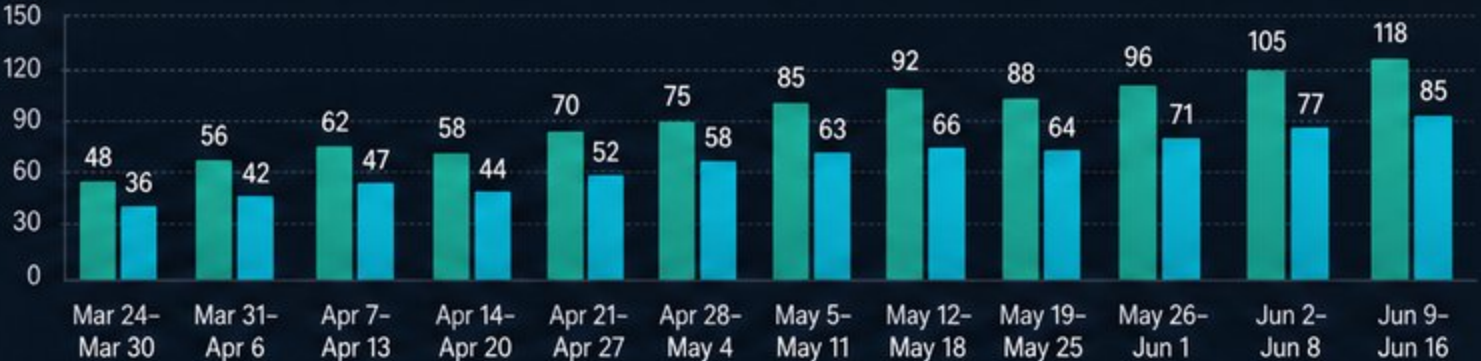
Experiment status distribution ⓘ



Pipeline runs by status ⓘ



Notebook entries signed vs witnessed ⓘ





LabsOfScience

MODULES

Overview

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Storage
256 GB of 1 TB used

Home > Burdenoff / Chandra Lab / My Project



gRNA efficiency panel

● RUNNING

EXP-2025-0451 | May 12, 2025 • 10:18 AM | Dr. Chandra

Overview Details Runs Results Files Metadata Activity

STATUS

● Running

Run 3 of 5

PROGRESS

63%

Est. 1h 24m left

STARTED

May 12, 2025

10:18 AM

LAST UPDATE

22 minutes ago

10:53 AM



Run Progress

- Run 1 Completed
- Run 2 Completed
- Run 3 In progress
- Run 4 Pending
- Run 5 Pending

Experiment Notes

Testing 8 gRNAs targeting EMX1 locus in K562 cells. Using SpCas9, electroporation method, and NGS readout.

Linked Items

- EMX1 target design v2 (Protocol)
- K562 cell line (Inventory)

Discussion 5 comments

Dr. Sanjay Mehta 2h

Can we bump replicates to 4 for gRNA-B? The variance looks a bit high.

2 likes

Dr. Priya Nair 1h

Agree with Sanjay. I'll update the plan and re-run that arm.

1 like

Dr. Iyer 45m

Off-target signal looks clean in Run 3. Attaching the IGV snapshot.

igv_run3_snapshot.png 1.2 MB

2 likes

Dr. Ananya Rao 20m

Thanks! I'll include this in the QC report.

1 like

Write a comment... Send



Projects

- All
- Active
- Planning



CRISPR Off-Target Screen

ACTIVE

● Genomics • Dr. Rao



Proteomics Biomarker Study

ACTIVE

● Proteomics • Dr. Mehta



Materials Fatigue Analysis

PLANNING

● Materials • Dr. Rao



Microbiome Longitudinal

ON_HOLD

● Microbiology



Overview



Projects



Experiments



Notebook



More



Notebook entry



Run 3 observations

✓ SIGNED



Author: Dr. Anita Rao



Experiment: gRNA efficiency panel



Created: 2026-07-02



Record

Clean bands at expected size; ~85% on-target efficiency for gRNA-A.



Integrity



Signed by Dr. Rao · Jul 2, 14:37



Witnessed by Dr. Mehta · Jul 2, 16:05



Attachments



gel_image_run3.png
1.2 MB · PNG



raw_intensities.csv
48.6 KB · CSV



Sign



Witness



Overview



Projects



Experiments



Notebook



More

EXP-0142 — Western blot, HSP70 induction

IN PROGRESS

Protocol: WB-HSP70 v3 (published) · Project: Heat-shock response · Lead: R. Sandoval

Hypothesis

Heat shock at 42 C induces HSP70 expression within 30 minutes.

Induction should scale with exposure duration.

Variables

temperature	42 C
duration	30 min
replicates	3

Runs

Run # ,	Status	Started	Completed	Outcome
3	COMPLETED	12 Jul	12 Jul	Band present
2	COMPLETED	09 Jul	09 Jul	Inconclusive
1	ABORTED	05 Jul	—	Lysate degraded

Research Assistant

Context: Experiment EXP-0142

What protocol does this experiment follow, and did run 2 use the same version?

- This experiment follows protocol WB-HSP70 v3.
- Yes, run 2 also used version v3.
- Protocol history confirms no changes between these runs.

Ask about this experiment...



Usage draws on workspace credits





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- Datasets
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- Inventory
- Instruments

AI Agent — labsofscience-mcp (connected)

studio

Tools (45)

projects_list
experiments_get
runs_start
notebook_create
notebook_sign [destructive]
protocols_publish [destructive]
datasets_add_version
inventory_adjust

Create a notebook entry for run 3 of EXP-0142, then sign it.

Created notebook entry NB-0219.

'notebook_sign' is a destructive action and was NOT executed. Re-call with confirm: true once you intend to proceed.

Confirm signing NB-0219?

Confirm

Cancel

LabsOfScience

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Notebook > Kirby Lab

Search research

RS

Notebook entries

ID	Title	Experiment	Status	Author	Witness	Updated
NB-0219	Run 3 observations	EXP-0142	DRAFT	R. Sandoval	—	just now
NB-0218	Lysate prep	EXP-0142	WITNESSED	R. Sandoval	A. Okafor	12 Jul
NB-0217	Gel imaging notes	EXP-0139	SIGNED	A. Okafor	—	09 Jul

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- AI Operations

AI Operations

Workspace model

- ☒ Google Gemini — Gemini 2.5 Flash `text][json]` **DEFAULT**
- ☐ Google Gemini — Gemini 2.5 Pro `text][json][reasoning]`
- ☐ OpenAI — GPT-4o mini `text][json]`
- ☐ OpenAI — GPT-4o `text][json][reasoning]`
- ☐ Anthropic — Claude 3.5 Haiku `text][json]`
- ☐ Anthropic — Claude 3.7 Sonnet `text][json][reasoning]`
- ☐ OpenRouter — Auto-routed `text]`

Save workspace model

A pinned provider is called directly — it will not fall back to another vendor.

Provider status

- Gemini — key not configured
- OpenAI — key not configured
- Anthropic — key not configured
- OpenRouter — key not configured

Decision ledger

- All
- Manual
- Scheduled
- Event

Time	Trigger	Provider · Model	Prompt summary	Tokens in/out	Latency	Status
------	---------	------------------	----------------	---------------	---------	--------



No AI decisions recorded yet

This ledger is append-only. Rows appear once the decision engine makes its first call.

Read-only for every role — corrections are new rows, never edits.

Western blot — HSP70 induction (draft)

DRAFT

AI-DRAFTED

Version 1 · Project: Heat-shock response · Drafted via Gemini 2.5 Flash · Not published

AI proposes this protocol

Review the steps before publishing. Publishing freezes this version.

Accept & publish

Edit steps

Override — record why

Grounded in

WB-HSP70 v3 (published)

WB-generic v2 (published)

EXP-0139 runs 1–4

Steps

- | | | |
|--|-----------|---|
| 1. Prepare lysate — | 20 min |  |
| 2. Determine protein concentration — | 15 min |  |
| 3. Run SDS-PAGE gel — | 60 min |  |
| 4. Transfer to membrane — | 45 min |  |
| 5. Block and incubate primary antibody — overnight | overnight |  |
| 6. Wash, secondary antibody, image — | 90 min |  |

Safety notes

Handle acrylamide in the fume hood.

Methanol transfer buffer — gloves required.

Draft written to the protocol library — it freezes only when a human publishes it.

Experiments / EXP-0142

EXP-0142 — Western blot, HSP70 induction

IN PROGRESS

Protocol: WB-HSP70 v3 · Runs: 3 · Lead: R. Sandoval

AI proposes run 4

Gemini 2.5 Flash

Change: temperature 42 C → 45 C
Hold: duration 30 min, replicates 3
Reason: run 2 inconclusive at 42 C; run 3 band present but faint
Grounded in runs 1–3 and notebook entries NB-0217, NB-0218

Accept — create planned run Adjust parameters Override — record why

Ledger entry

Trigger: MANUAL
Provider · Model: gemini · gemini-2.5-flash
Tokens in/out: 1,842 / 261
Latency: 1,930 ms
Status: SUCCEEDED

Runs

Run #	Status	Temp	Duration	Outcome	Completed
3	COMPLETED	42 C	30 min	Band present (faint)	12 Jul
2	COMPLETED	42 C	30 min	Inconclusive	09 Jul
1	ABORTED	42 C	30 min	Lysate degraded	05 Jul
4	PROPOSED	45 C	30 min	—	—

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Protocols > Kirby Lab

Code	Name	Version	Status	Owner	Updated
WB-HSP70	Western blot — HSP70 induction	v3	PUBLISHED	A. Okafor	02 Jun
WB-GEN	Western blot — generic	v2	PUBLISHED	A. Okafor	14 May
LYS-PREP	Lysate preparation	v5	PUBLISHED	R. Sandoval	28 Apr

Research Assistant

Context: Protocols

Has anyone here run an HSP70 western blot before?

Yes, this protocol has been run in this workspace.

The most recent successful run was noted in NB-0219 (the cited source).

Citations (4)

PROTOCOL · Western blot — HSP70 induction · v3 (frozen 02 Jun)

NOTEBOOK · Run 3 observations · NB-0219 · witnessed

NOTEBOOK · Lysate prep · NB-0218 · witnessed

DATASET · HSP70 blot densitometry · v2 · sha256 4f9c...21ab

Grounded in this workspace only. Answers without citations are marked ungrounded.

Ask about your lab records...

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AI Operations / Scheduled loop

Kirby Lab

Loop settings

Enabled for this workspace



Cadence: Every 24 hours



Daily call cap: 200

Daily cost cap: \$5.00

Last run: today 06:00 · Next run: tomorrow 06:00

Reruns are idempotent — a flagged item is not re-flagged.

Pause loop

This workspace only

Opt-in per workspace. Other workspaces are unaffected.

Opt-in per workspace. Other workspaces are unaffected.

What the loop flagged

Signal	Item	Detail	Action drafted	Status
Stalled run	EXP-0142 run 4	Pending 9 days	Notify lead	DRAFTED
Stalled pipeline	PIPE-0032 run 11	Never completed	Notify data steward	DRAFTED
Low stock	Anti-HSP70 antibody	2 vials, reorder at 5	Reorder reminder	DRAFTED
Inactive project	Heat-shock response	No activity 41 days	Notify PI	DISMISSED

Ledger — last cadence

Time	Trigger	Provider · Model	Prompt summary	Latency	Status
	SCHEDULED	gemini · gemini-2.5-flash	stalled-run review	1,410 ms	SUCCEEDED
	SCHEDULED	gemini · gemini-2.5-flash	low-stock review	980 ms	SUCCEEDED
	SCHEDULED	gemini · gemini-2.5-flash	inactive-project review	1,120 ms	SUCCEEDED