FLOWRepository

CYTO 2012

Publishing MIFlowCyt Compliant Data to ISAC's FlowRepository.org for Cytometry A and Other Journals

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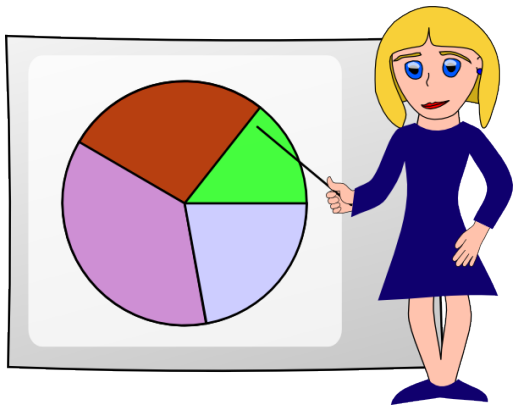
Terry Fox Laboratory
BC Cancer Agency, Vancouver, BC, Canada

June 27, 2012

Outline

- Introduction
  - Motivation
  - Background
- FlowRepository
  - Data review and download
  - Data upload and annotation
  - Data sharing
- Summary & Conclusions
  - Summary
  - Future Work
  - Acknowledgments



Why share your data?

- Promote open scientific inquiry and progress in the field
  - Allow for re-exploration of existing datasets to test new or alternative hypotheses and methods of analysis
  - Allow for independent validation and refutation of experimental findings
- Required or encouraged by many funding agencies and scientific journals

What to share?

- A dump of FCS files is not enough
  - Data without context are not understandable to others
- Minimum Information about a Flow Cytometry Experiment
  - Outlines the minimum information required to report about flow cytometry experiments
  - Represents the community consensus
    - 33 coauthors from 19 institutions
    - ISAC Recommendation
  - Required/recommended by Cytometry A and Nature

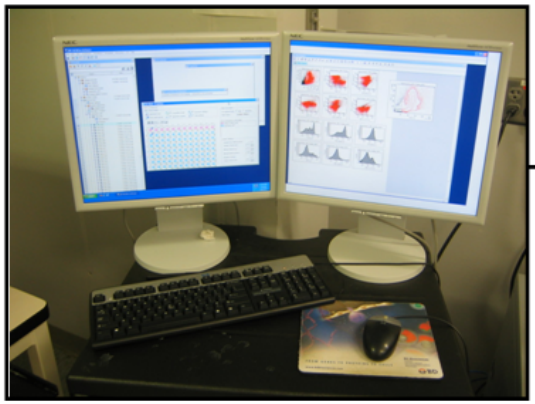
Lee et al., MIFlowCyt: the Minimum Information about a Flow Cytometry Experiment. *Cytometry A*. 2008; 73(10): 926-930

MIFlowCyt components

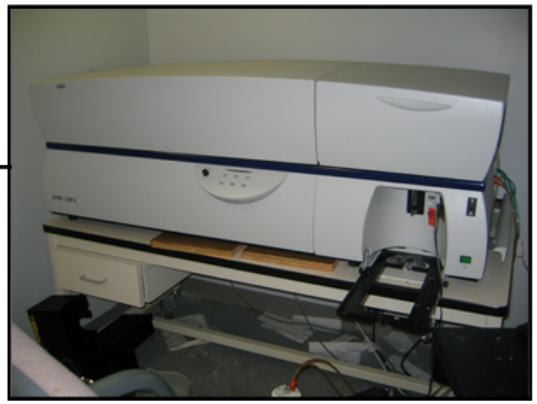
Experiment overview

Sample description

MIFlowCyt
compliant experiment description



Data analysis



Instrumentation

MIFlowCyt components

Experiment overview

- Purpose
- Keywords
- Experiment variables
- Date(s)
- Organization(s)
- Primary contact
- Quality control measures

Sample description

- Description
- Sample material
- Treatment
- Fluorescent reagents
- Source
- Biological samples: Organism with taxonomy, phenotype, genotype, age, gender, ...
- Location for environmental samples

Data analysis

- FCS data files
- Compensation and other transformations
- Gating details including gate description, statistics and boundaries or images or gate membership details

Instrumentation details

- Make
- Model
- User-adjustable components (e.g., detector voltages)
- Customized configurations

How to share all these details?

- Manuscript, e.g., the methods section
- Manuscript's supplemental information
- Data repository

FlowRepository – What is it?

- A public online resource of annotated flow cytometry datasets
  - Primarily those associated with peer-reviewed publications
- Web-based application created by extending and adapting Cytobank
  - Mainly to incorporate MIFlowCyt
- Open source
  - Affero General Public License
- Supported by ISAC and generously hosted by Carnegie Mellon University

FlowRepository – What do you need to start?

- A computer with Internet connection
  - Fast connection is good, especially when uploading large datasets
- Web browser
  - Firefox or Chrome recommended
  - Safari or Internet Explorer also works but may not look great
- Ability to run Java Applets in the Web browser
  - Java version 1.5.1 or higher is required for data upload, download and online analysis
- A Google ID, Yahoo! ID, or another OpenID
  - Required for write access

Accessing FlowRepository

- Navigate your Web browser to http://flowrepository.org
  - Or https://flowrepository.org if you prefer a secure protocol

Accessing FlowRepository

- Navigate your Web browser to http://flowrepository.org
  - Or https://flowrepository.org if you prefer a secure protocol
- Demonstration (offline)
  - Access FlowRepository
  - Review a public dataset
  - Deposit, annotate and share a dataset

FlowRepository

https://flowrepository.org

FLOWRepository

Login

Did you know?

A guide to FlowRepository is available at the documentation site for Cytobank and FlowRepository.

We also have a Quick start guide.

You can contact us by filling out a support ticket.

Supporting journal

FlowRepository at CYTO 2012

» **Sunday, June 24:** State of the Art Lectures - Computational Analysis of High-Dimensional Data

» **Tuesday, June 26:** Parallel 8 - Cytometry Technology: Cytometry Software and Informatics

» **Wednesday, June 27:** Workshop 13 - Publishing MIFlowCyt Compliant Data to ISAC's FlowRepository.org for Cytometry A and Other Journals

FlowRepository

FlowRepository is a database of flow cytometry experiments where you can query and download data collected and annotated according to the MIFlowCyt standard.

Query

Enter a term to search all publicly available experiments:

Query

Hide query fields

- ☑ Experiment Names
- ☑ Repository Identifiers
- ☑ Keywords
- ☑ Researcher Names
- ☑ Reagents and Manufacturers
- ☑ Instruments and Manufacturers
- ☐ FCS Files (Headers)
- ☑ Sample Annotations
- ☑ Pubmed IDs

Links

Browse all public datasets
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Funding
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Identification of B cells | Query

Hide query fields

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- Type *Identification of B cells* in the Query field

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FlowRepository

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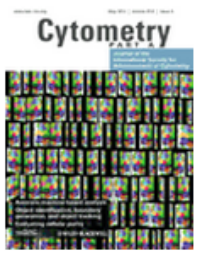

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1 matching experiment found.

Search:

Experiment Name	Repository ID	Pubmed ID(s)	FCS Files	Illustrations	Primary Researcher	Project	MIFlowCyt Score	Updated
Identification of B cells through negative gating	FR-FCM-ZZZ3	[20131398]	284	3	Karin Breuer			12:19 PM

Showing 1 to 1 of 1 entries

- FR-FCM-ZZZ3 is the dataset repository identifier
- Each identifier is in the form of FR-FCM-*xxxx*
- A public view of an experiment can be accessed directly via https://flowrepository.org/id/FR-FCM-*xxxx*

Experiment: Identification of B cells through negative gating **ID:** FR-FCM-ZZZ3 **Primary Researcher:** Karin Breuer MIFlowCyt Score: 89.83%

« Back to All Public Experiments

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Experiment Overview

Repository ID:	FR-FCM-ZZZ3	**Experiment name:**	Identification of B cells through negative gating	**MIFlowCyt score:**	89.83%
Primary researcher:	Karin Breuer	**PI/manager:**	Karin Breuer	**Uploaded by:**	Karin Breuer
Experiment dates:	2007-05-30 - 2007-08-21	**Dataset uploaded:**	Apr 2011	**Last updated:**	12:19 PM
Keywords:	[Innate Immune Response] [Toll-like receptors] [Activation markers] [B cells] [MIFlowCyt]	**Pubmed IDs:**	[20131398]		
Organizations:	Child & Family Research Institute, Department of Pediatrics, Vancouver, BC (Canada) University of Washington Medical Center, Department of Immunology, Seattle, Washington (USA)				
Purpose:	The purpose of the experiment presented here was to test whether human B cells can be identified through a negative-gating strategy.				
Conclusion:	B cells can be identified through a negative-gating strategy. Specifically, B lymphocytes are the MHC II+, CD14neg, CD11cneg, and CD123neg cells. Only on the extreme ends of a response spectrum (i.e., either none of the B cells respond to a given innate stimulation or all/most B cells respond but not monocyte, mDC or pDC) would this B cell negative-gating strategy supply acceptable data. In other words, our negative-gating strategy would potentially be difficult to interpret if both B cell and non-B cell populations responded in low frequency.				
Comments:	We set out to compare a negative-gating strategy to identify B cells with the usual positive identification of these cells using the canonical B cell surface marker, CD19. We also wanted to assess the functional response of these B cells to Toll-like receptor stimulation using the following TLR ligands: PAM3CSK4, LPS, and CpG-A ODN 2336. The blood draws, PBMC isolation, and TLR stimulations were performed between 30 May and 5 June 2007. The flow cytometry analyses were performed between 8 June and 21 August 2007.				
Quality control:	To standardize voltage settings across samples acquired on different days, single stained controls were included. Voltages were adjusted such that fluorescence intensity was identical for each antibody, regardless of date of acquisition.				

Experiment variables

Individuals

a2006_O1T2pb05i_A1_A01.fcs · a2006_O1T2pb05i_A2_A02.fcs · a2006_O1T2pb05i_A3_A03.fcs · a2006_O1T2pb05i_A4_A04.fcs · a2006_O1T2pb05i_A5_A05.fcs · a2006_O1T2pb05i_A6_A06.fcs · a2006_O1T2pb05i_A7_A07.fcs · a2006_O1T2pb05i_A8_A08.fcs · a2006_O1T2pb05i_B1_B01.fcs · a2006_O1T2pb05i_B2_B02.fcs · a2006_O1T2pb05i_B3_B03.fcs · a2006_O1T2pb05i_B4_B04.fcs · a2006_O1T2pb05i_B5_B05.fcs · a2006_O1T2pb05i_B6_B06.fcs · a2006_O1T2pb05i_B7_B07.fcs · a2006_O1T2pb05i_B8_B08.fcs · a2006_O1T2pb05i_C1_C01.fcs · a2006_O1T2pb05i_C2_C02.fcs · a2006_O1T2pb05i_C3_C03.fcs · a2006_O1T2pb05i_C4_C04.fcs · a2006_O1T2pb05i_C5_C05.fcs · a2006_O1T2pb05i_C6_C06.fcs · a2006_O1T2pb05i_C7_C07.fcs · a2006_O1T2pb05i_C8_C08.fcs · a2006_O1T2pb05i_D1_D01.fcs · a2006_O1T2pb05i_D2_D02.fcs · a2006_O1T2pb05i_D3_D03.fcs · a2006_O1T2pb05i_D4_D04.fcs · a2006_O1T2pb05i_D5_D05.fcs · a2006_O1T2pb05i_D6_D06.fcs · a2006_O1T2pb05i_D7_D07.fcs · a2006_O1T2pb05i_D8_D08.fcs · a2006_O1T2pb05i_E1_E01.fcs · a2006_O1T2pb05i_E2_E02.fcs · a2006_O1T2pb05i_E3_E03.fcs · a2006_O1T2pb05i_E4_E04.fcs · a2006_O1T2pb05i_E5_E05.fcs · a2006_O1T2pb05i_E6_E06.fcs · a2006_O1T2pb05i_E7_E07.fcs · a2006_O1T2pb05i_E8_E08.fcs · a2006_O1T2pb05i_F1_F01.fcs · a2006_O1T2pb05i_F2_F02.fcs · a2006_O1T2pb05i_F3_F03.fcs · a2006_O1T2pb05i_F4_F04.fcs · a2006_O1T2pb05i_controls_G10_G10.fcs · a2006_O1T2pb05i_controls_G11_G11.fcs · a2006_O1T2pb05i_controls_G12_G12.fcs · a2006_O1T2pb05i_controls_G1_G01.fcs · a2006_O1T2pb05i_controls_G2_G02.fcs · a2006_O1T2pb05i_controls_G3_G03.fcs · a2006_O1T2pb05i_controls_G4_G04.fcs · a2006_O1T2pb05i_controls_G5_G05.fcs · a2006_O1T2pb05i_controls_G6_G06.fcs ·

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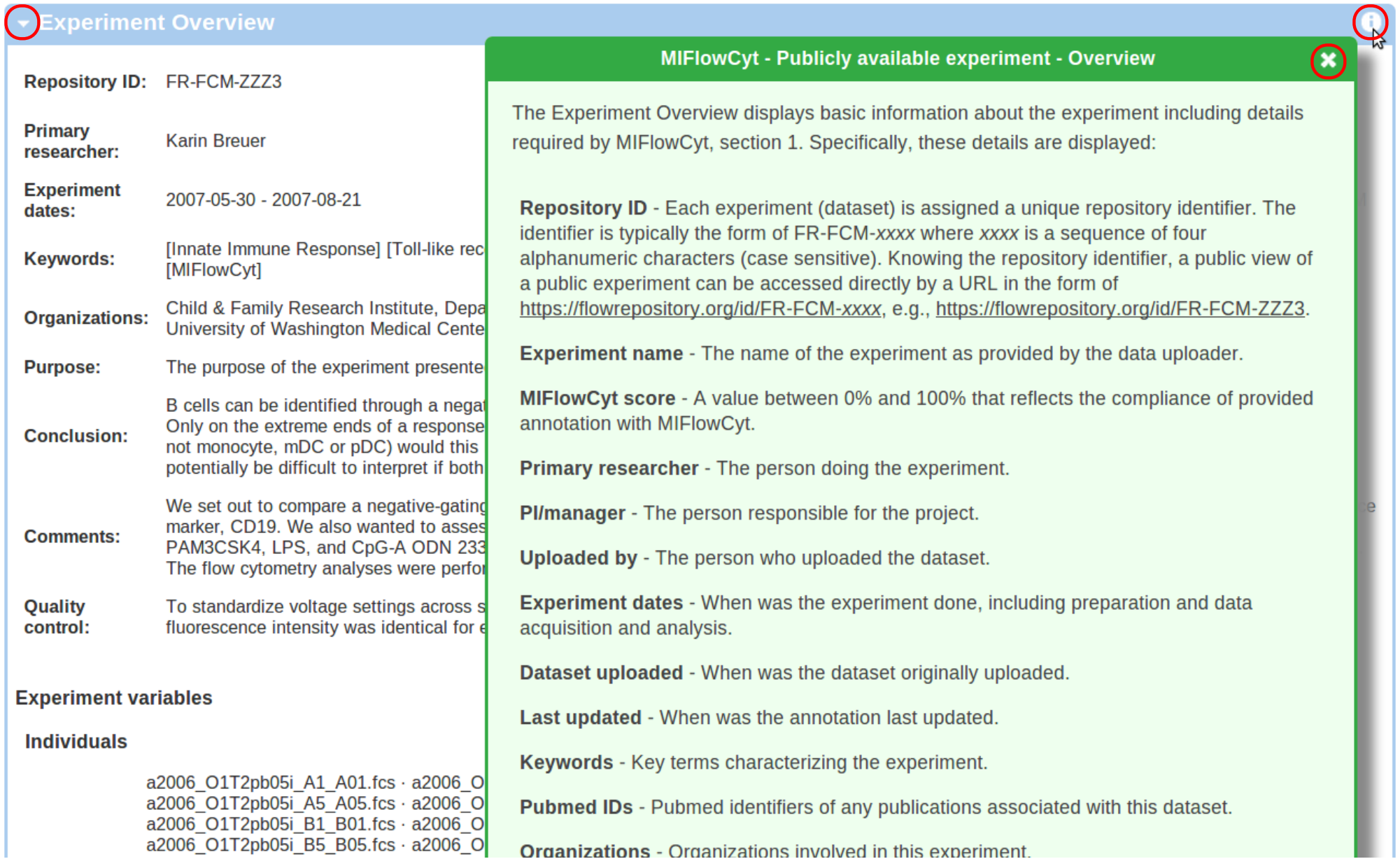
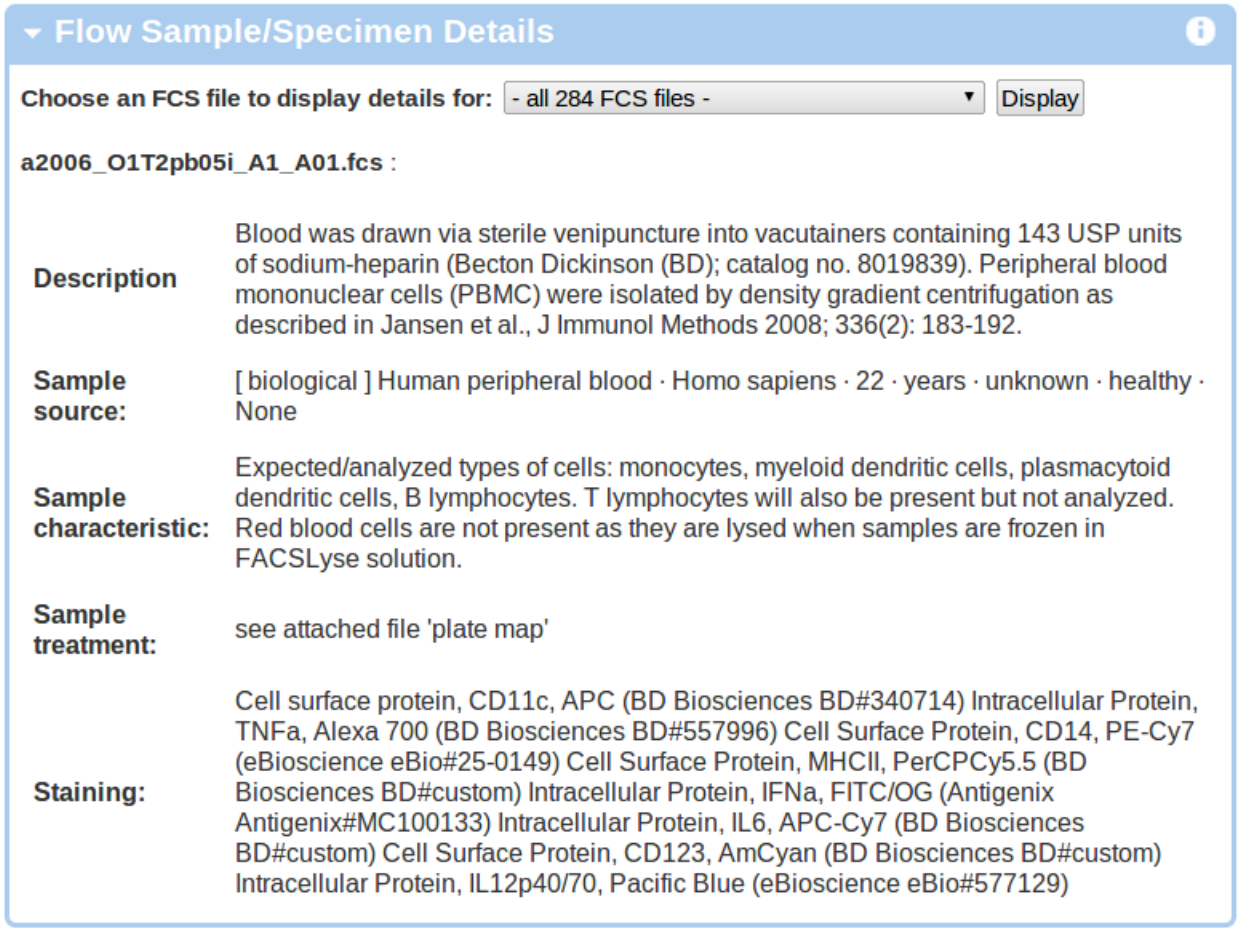
- Experiment description is organized into 4 boxes corresponding to the 4 sections of MIFlowCyt



- Mousing over an "i" will display a related help topic
- The "x" closes the pop-up window
- Arrows on the left in title bars collapse and restore panels

Reviewing flow sample details

- Scroll down to see additional information



Flow Sample/Specimen Details

Choose an FCS file to display details for: - all 284 FCS files - Display

a2006_O1T2pb05i_A1_A01.fcs :

Description	Blood was drawn via sterile venipuncture into vacutainers containing 143 USP units of sodium-heparin (Becton Dickinson (BD); catalog no. 8019839). Peripheral blood mononuclear cells (PBMC) were isolated by density gradient centrifugation as described in Jansen et al., J Immunol Methods 2008; 336(2): 183-192.
Sample source:	[biological] Human peripheral blood · Homo sapiens · 22 · years · unknown · healthy · None
Sample characteristic:	Expected/analyzed types of cells: monocytes, myeloid dendritic cells, plasmacytoid dendritic cells, B lymphocytes. T lymphocytes will also be present but not analyzed. Red blood cells are not present as they are lysed when samples are frozen in FACSLyse solution.
Sample treatment:	see attached file 'plate map'
Staining:	Cell surface protein, CD11c, APC (BD Biosciences BD#340714) Intracellular Protein, TNFa, Alexa 700 (BD Biosciences BD#557996) Cell Surface Protein, CD14, PE-Cy7 (eBioscience eBio#25-0149) Cell Surface Protein, MHCII, PerCPCy5.5 (BD Biosciences BD#custom) Intracellular Protein, IFNa, FITC/OG (Antigenix Antigenix#MC100133) Intracellular Protein, IL6, APC-Cy7 (BD Biosciences BD#custom) Cell Surface Protein, CD123, AmCyan (BD Biosciences BD#custom) Intracellular Protein, IL12p40/70, Pacific Blue (eBioscience eBio#577129)

Instrumentation details and data analysis

Flow Cytometer Details

BD FACSAria II, Becton Dickinson (BD Biosciences) used for:
A02 details · 2nd Settings details · A04 details · A06 details · A07 details · A08 details · A09 details · B01 details · B02 details · B03 details · B04 details · B06 details · B07 details · B08 details · B09 details · B10 details · B11 details · C01 details · C02 details · C03 details · C04 details · C06 details · C07 details · C08 details · C09 details · D01 details · D02 details · D03 details · D04 details · D06 details · D07 details · D08 d… ils · E04 details · E06 details · E07 details · E08 details · … 6 details · F07 details · F08 details · F09 details · F10 det… s · G07 details · G08 details · G09 details · H01 details · … 08 details · H09 details · H10 details · A01 details

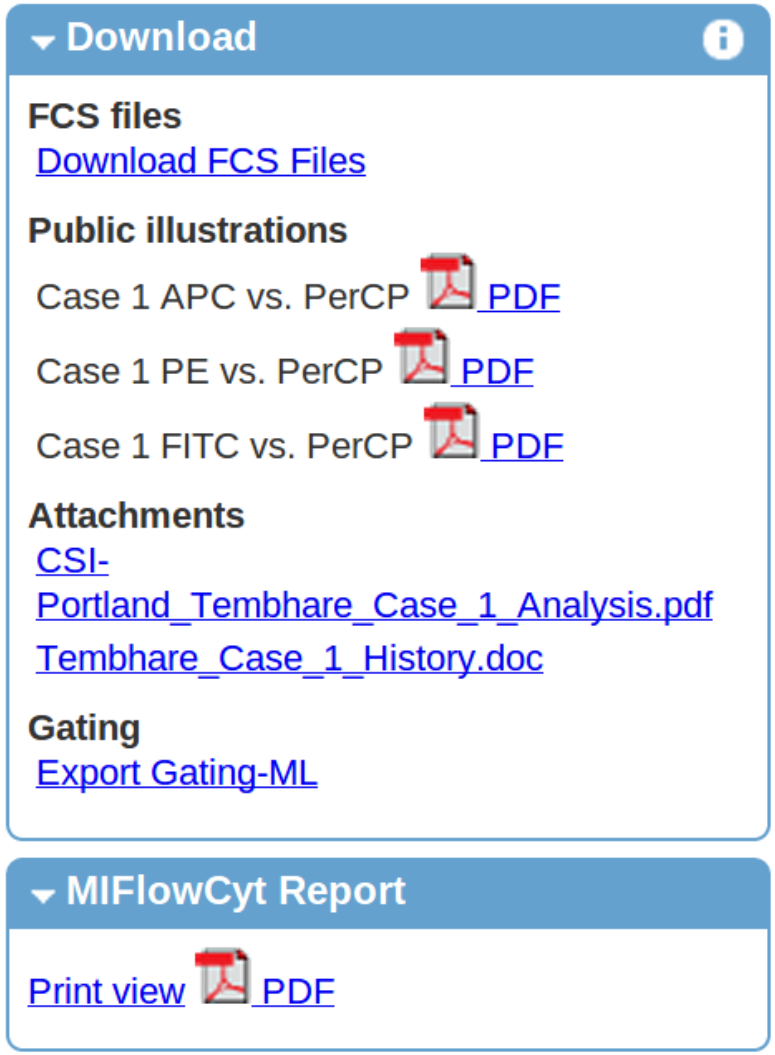
Instrument model: BD FACSAria II
Manufacturer: Becton Dickinson (BD Biosciences)
Flow Cell Type: Quartz cuvette
Other flow fluidics details: 160-um x 250-um, 15-mm long
Optical Paths: [FSC-H - FSC-Height] [SSC-H - SSC-Height] [FL1-H - CD45RA FITC] [FL2-H - CD45RO PE] [FL2-A - FL2-A] [FL3-H - CD3 PerCP] [FL4-H - CD8 APC]
Installation dates of filters in Optical Paths: When the instrument was bought in May 2007.

Data Analysis Details

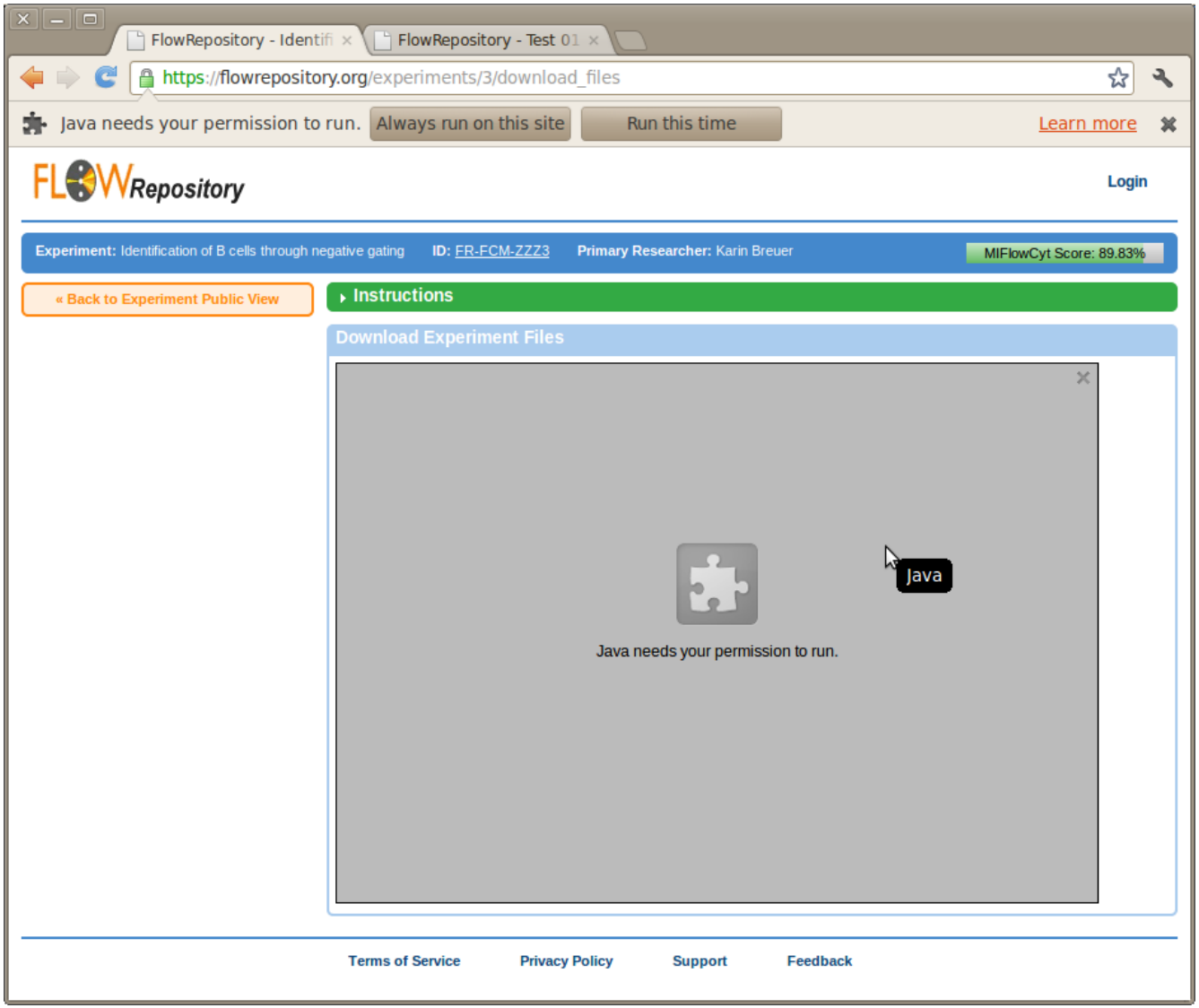
Choose which illustration to display: Panel

Download

- Panels on the left allow you to download
  - Data
  - Attachments
  - Saved illustrations
  - Gates (in Gating-ML)
  - MIFlowCyt reports



Download FCS files – make sure Java is allowed to run



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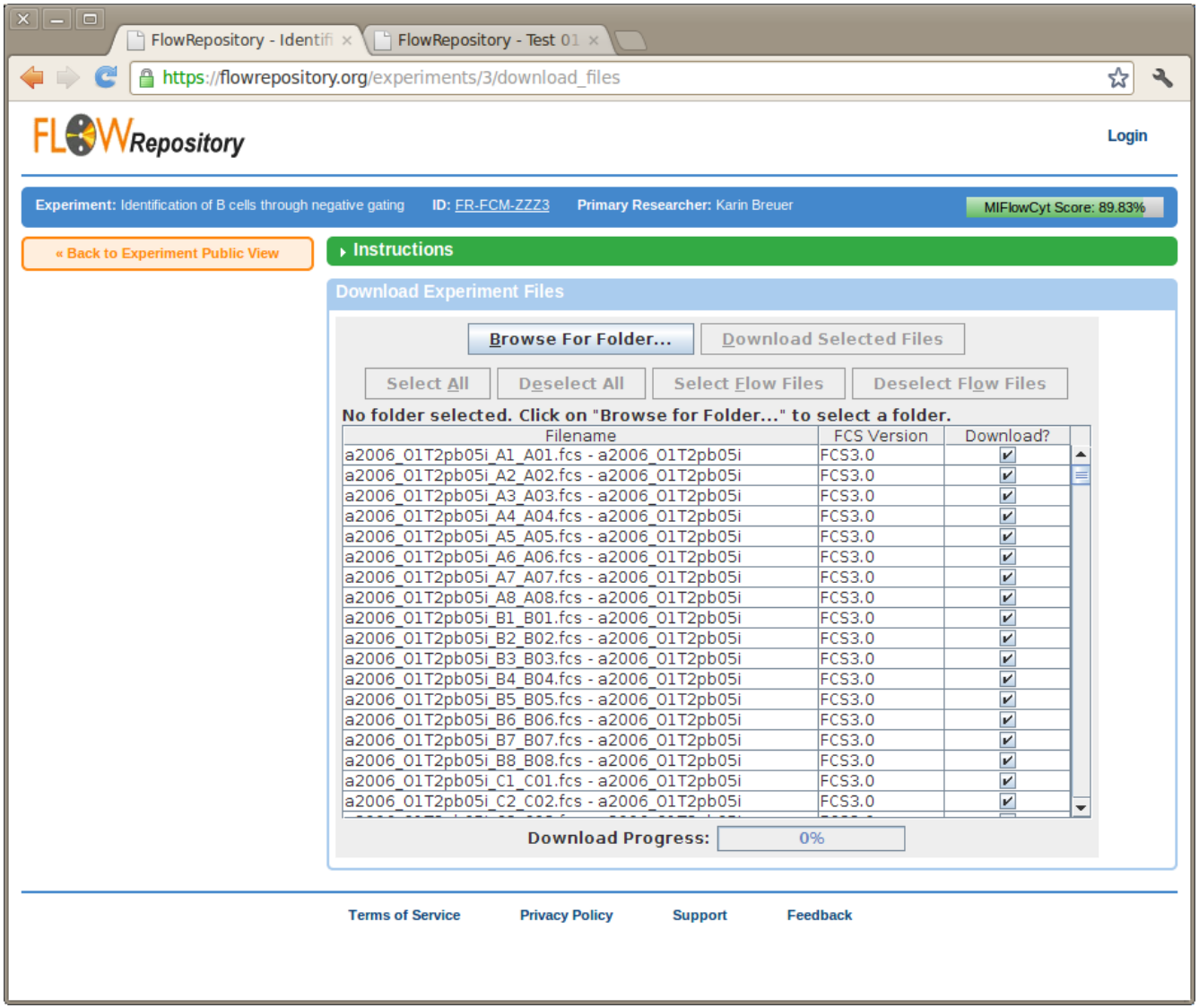

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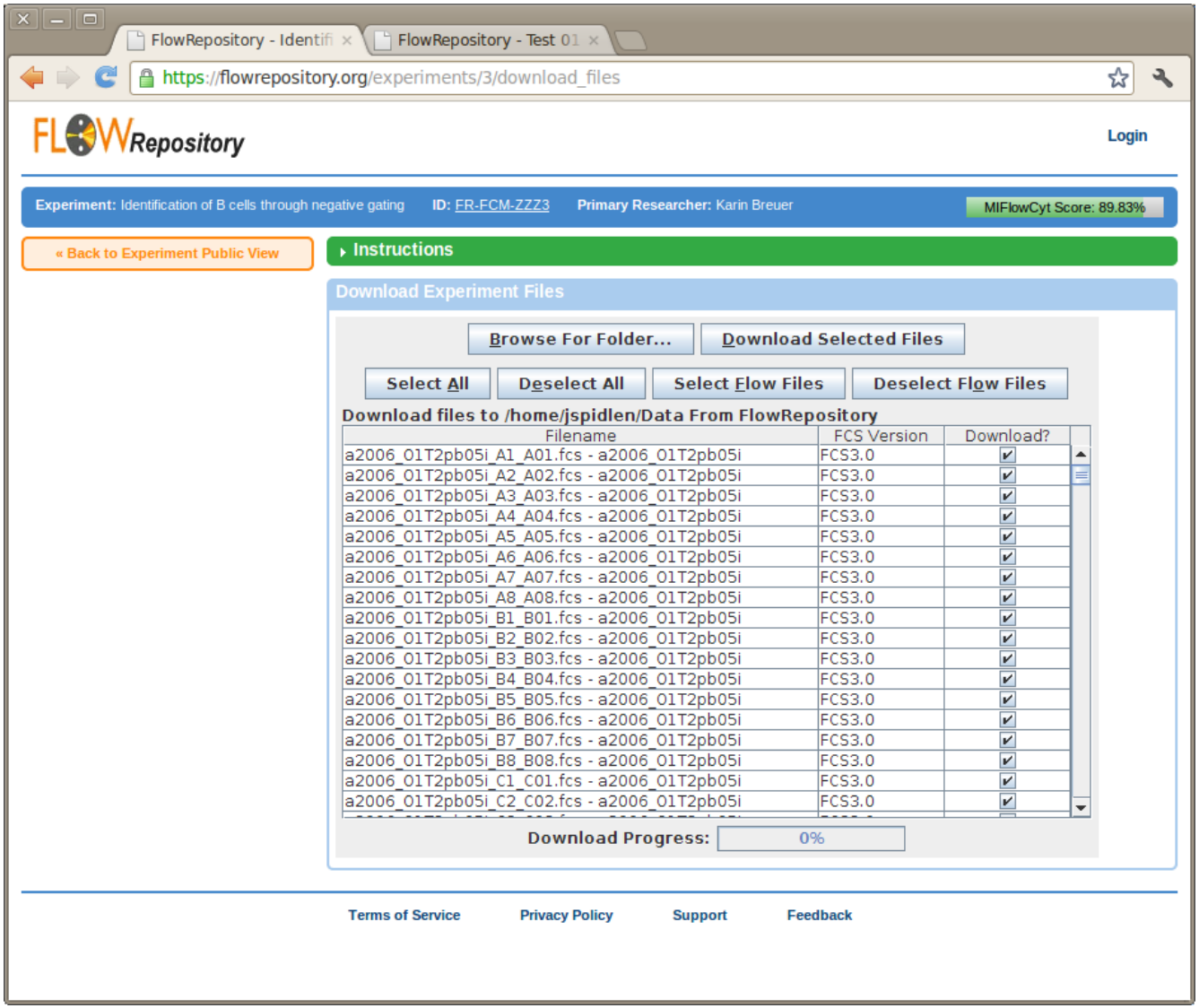

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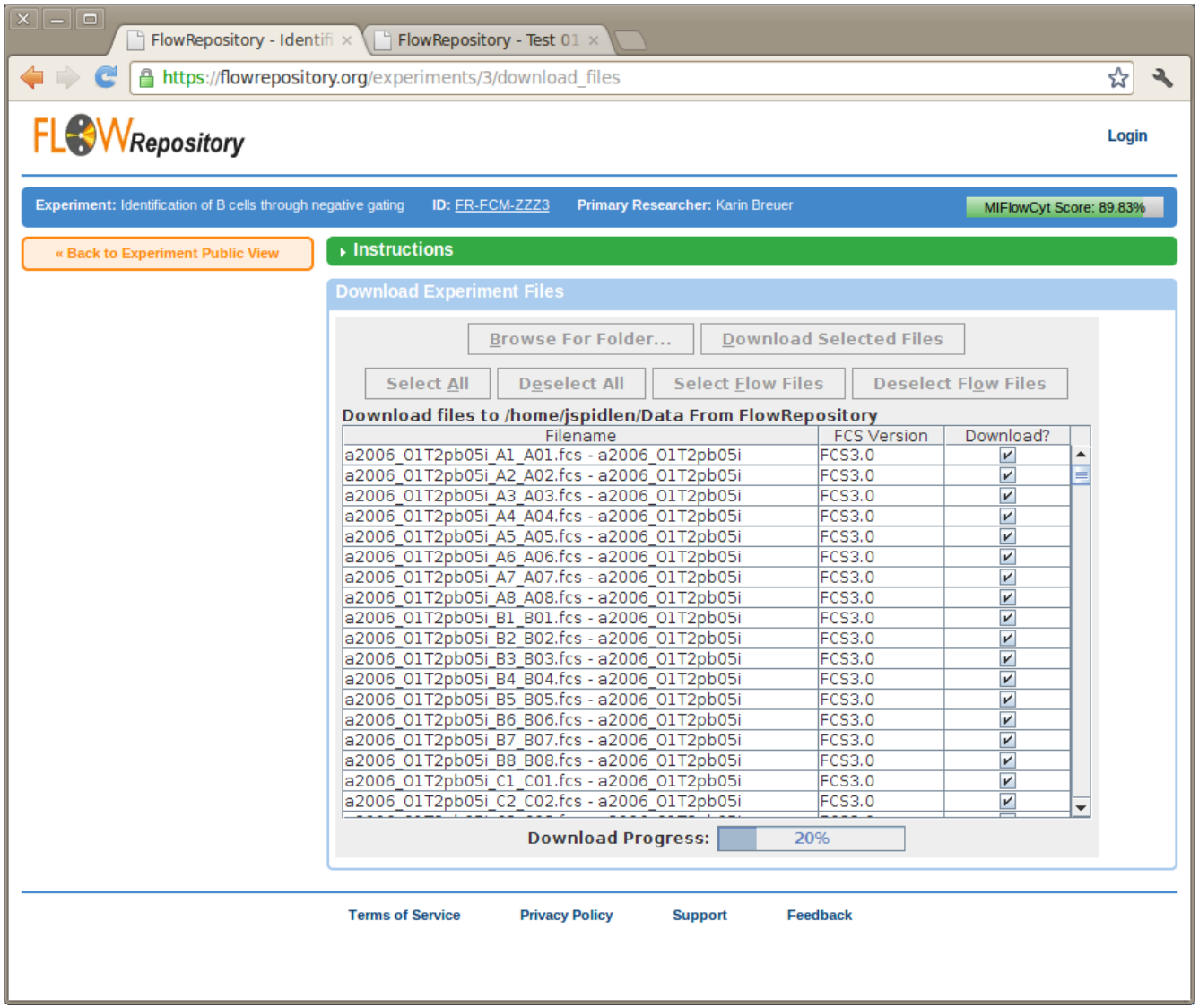

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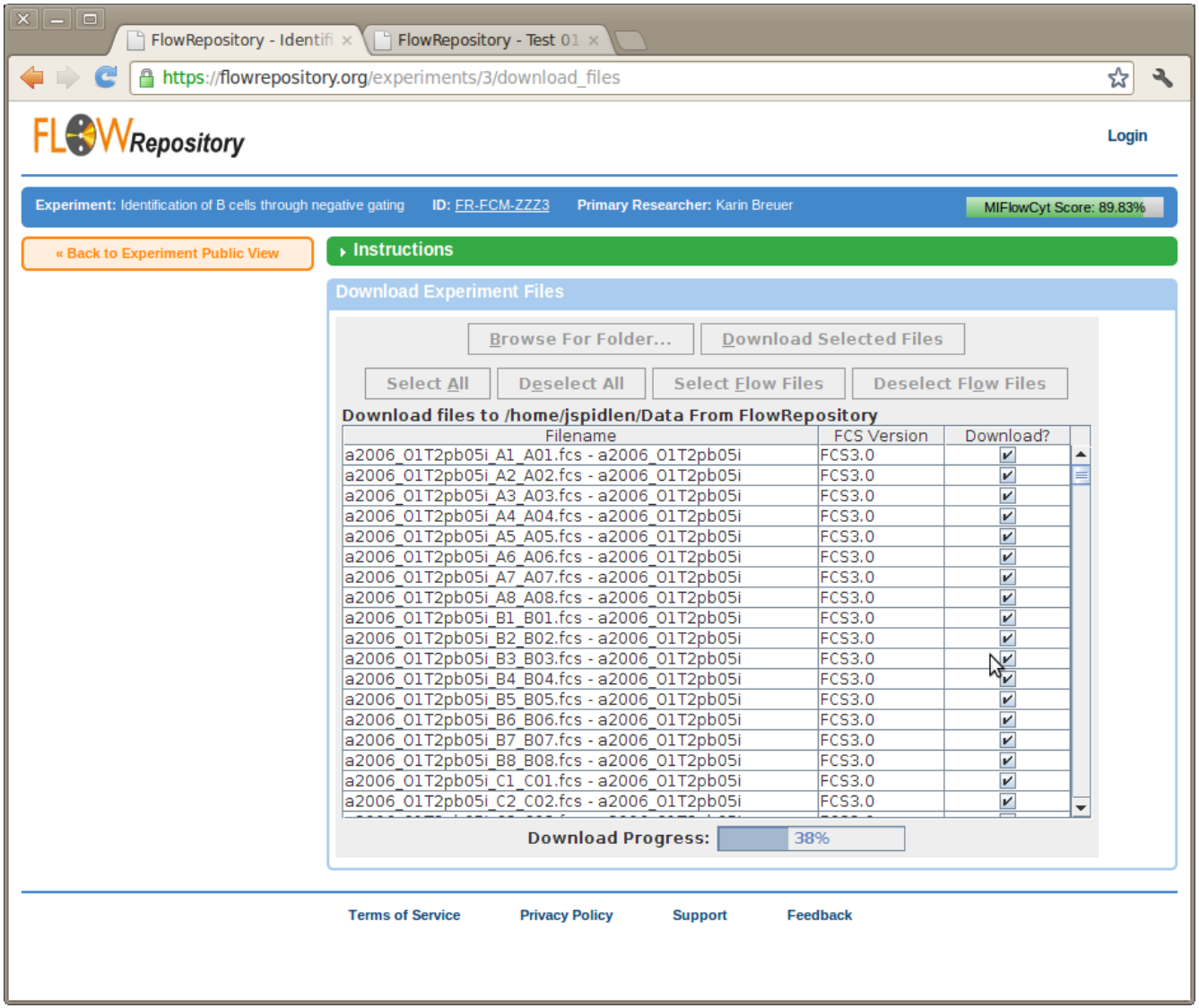

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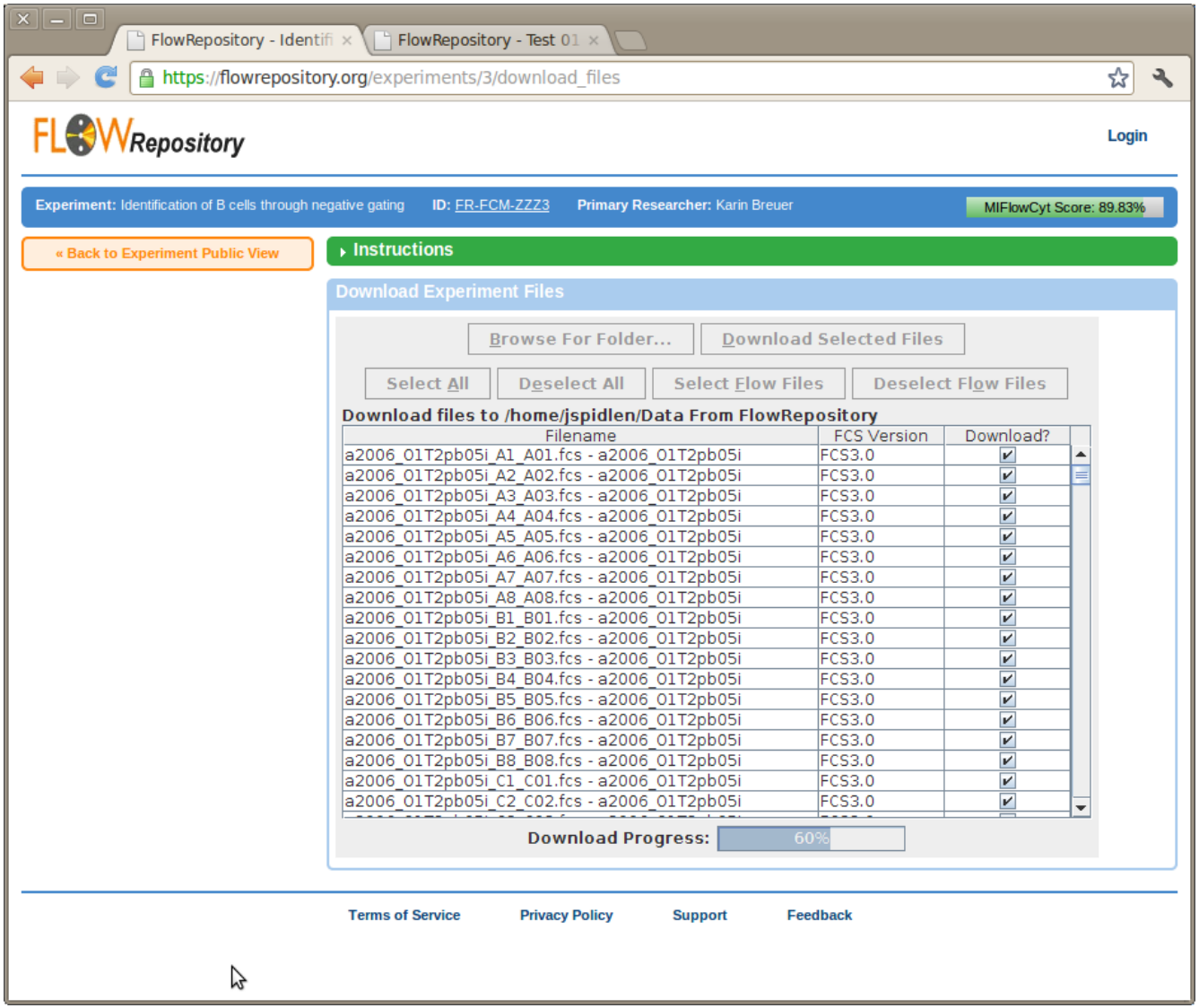
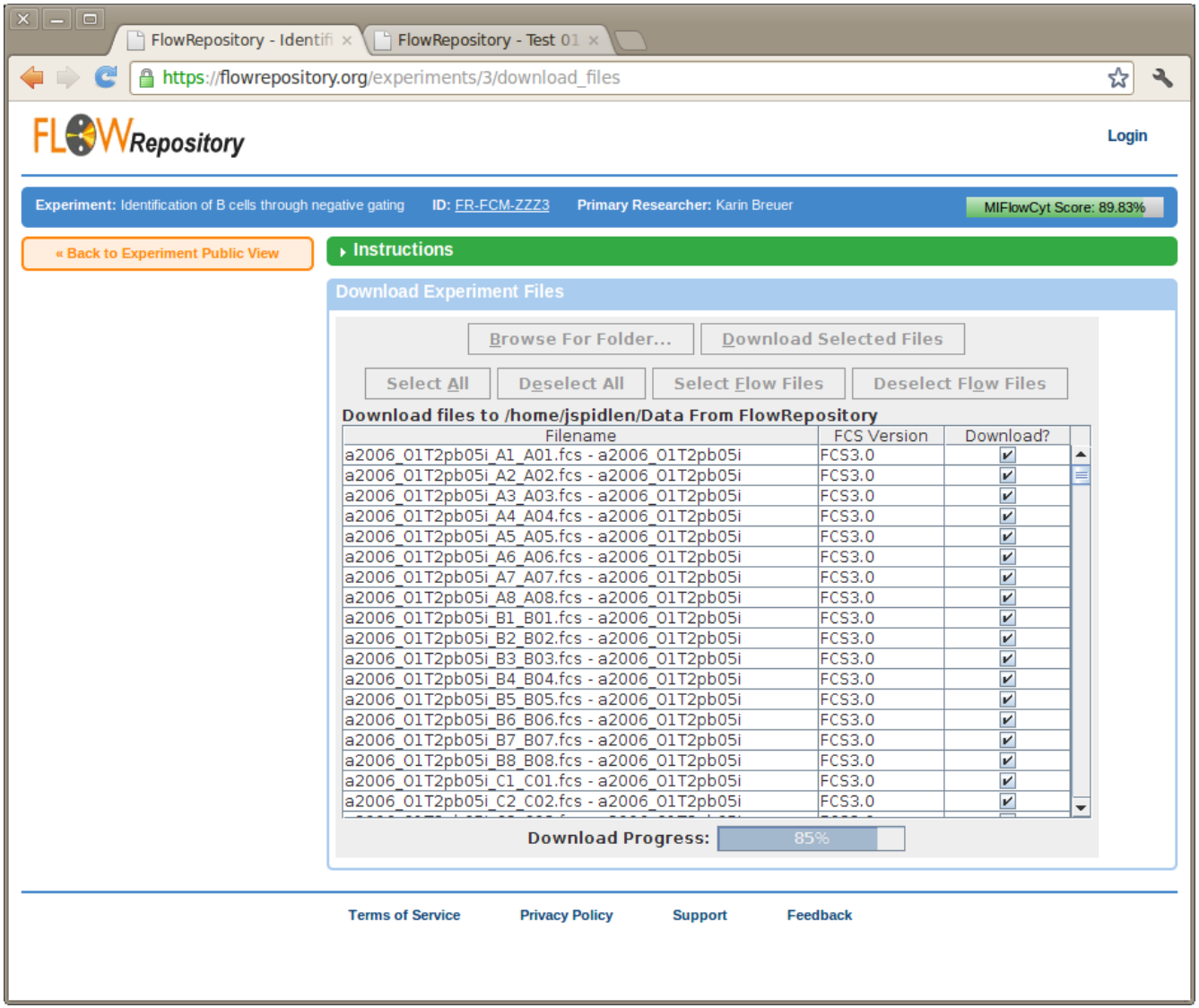


Download FCS files



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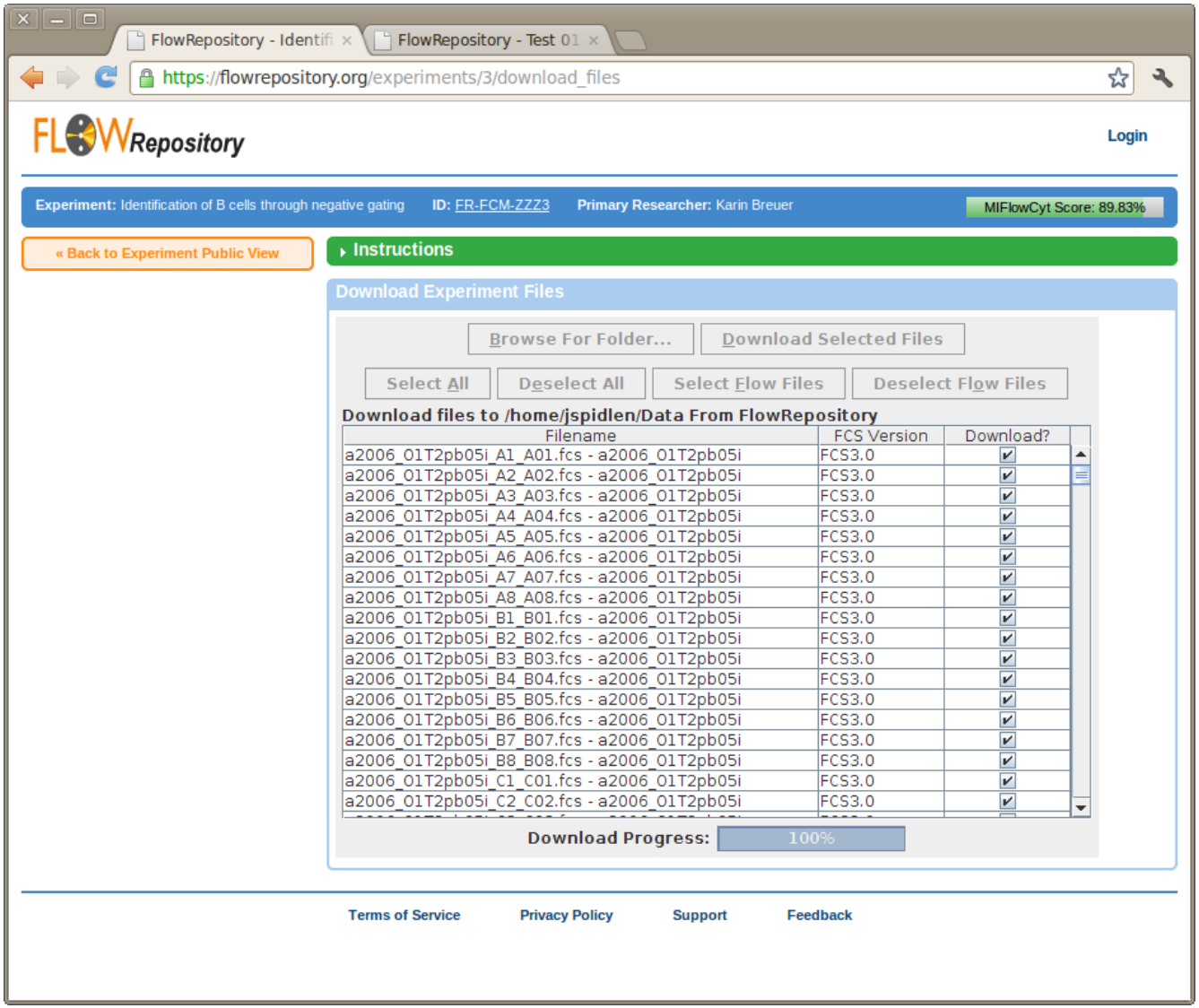
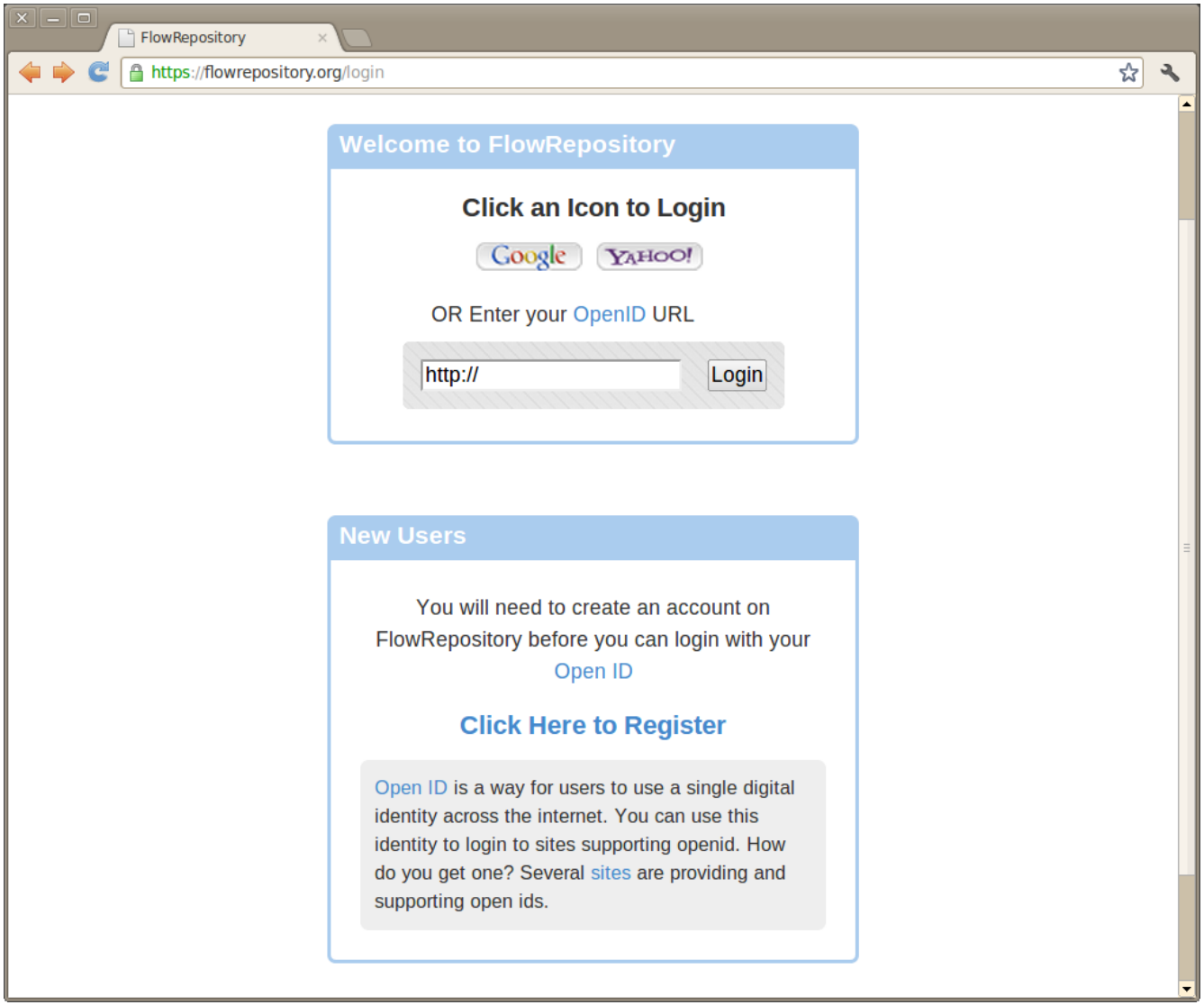
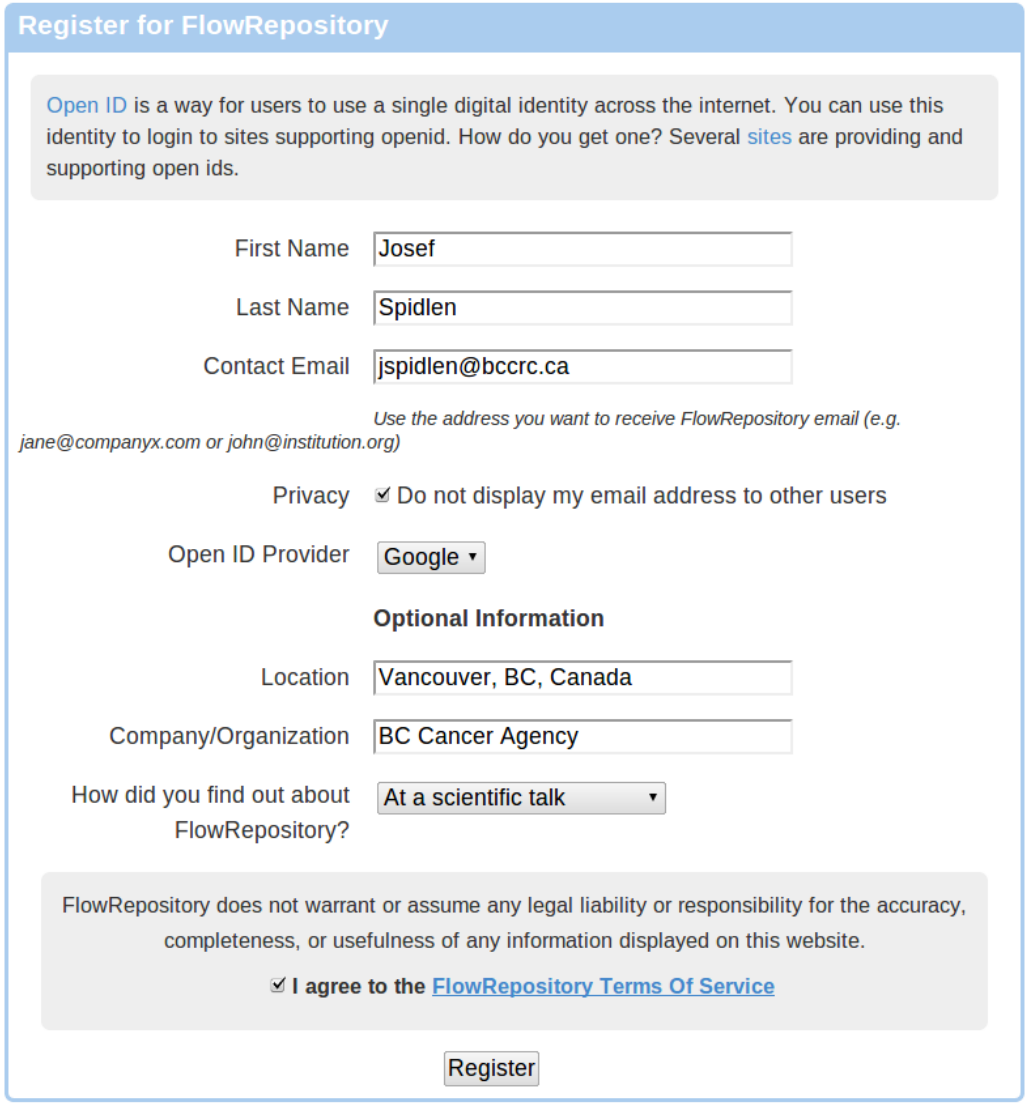


Register/login for advanced options



Registration



Register for FlowRepository

Open ID is a way for users to use a single digital identity across the internet. You can use this identity to login to sites supporting openid. How do you get one? Several sites are providing and supporting open ids.

First Name: Josef

Last Name: Spidlen

Contact Email: jspidlen@bccrc.ca

Use the address you want to receive FlowRepository email (e.g. jane@companyx.com or john@institution.org)

Privacy: ☑ Do not display my email address to other users

Open ID Provider: Google

Optional Information

Location: Vancouver, BC, Canada

Company/Organization: BC Cancer Agency

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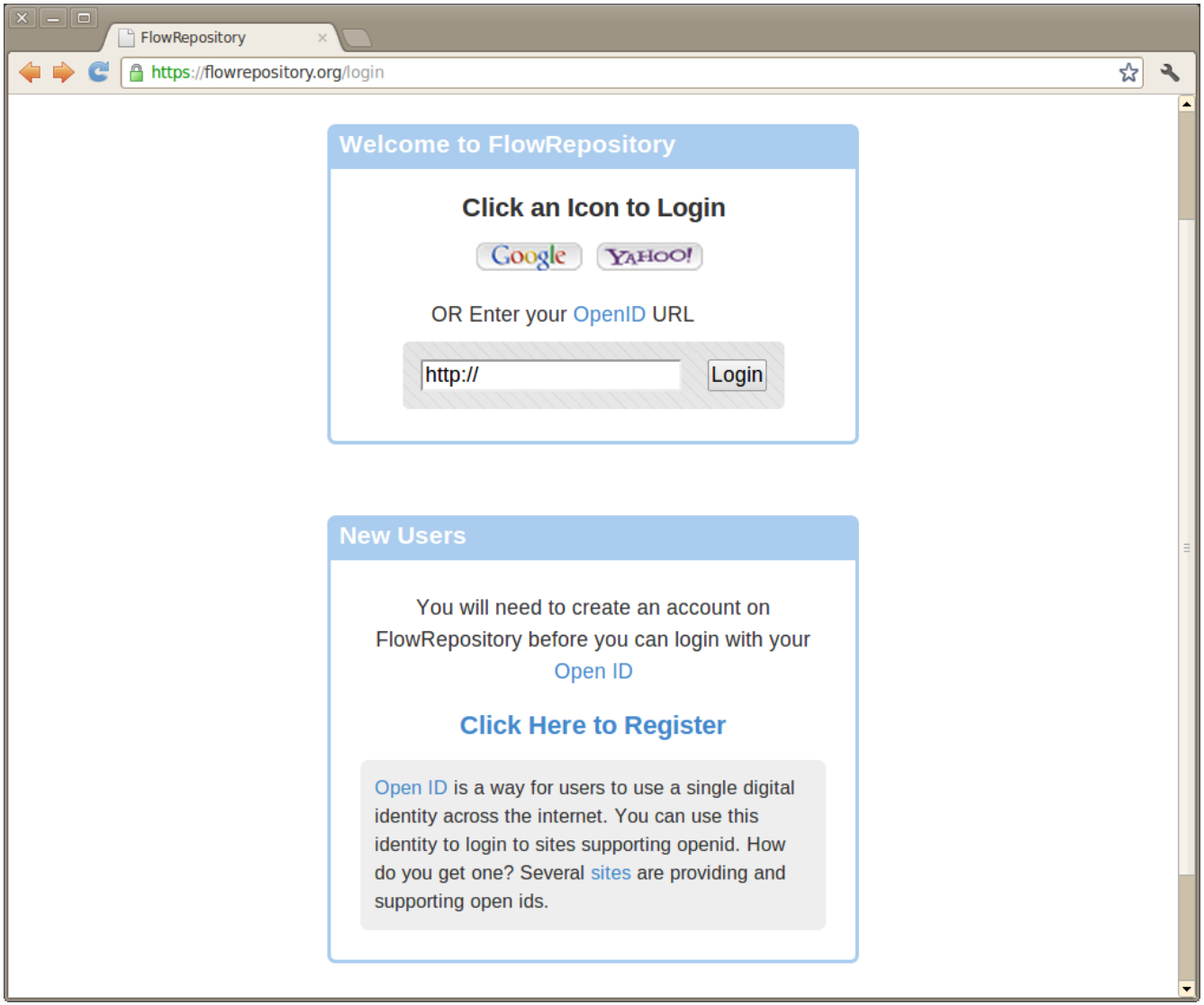
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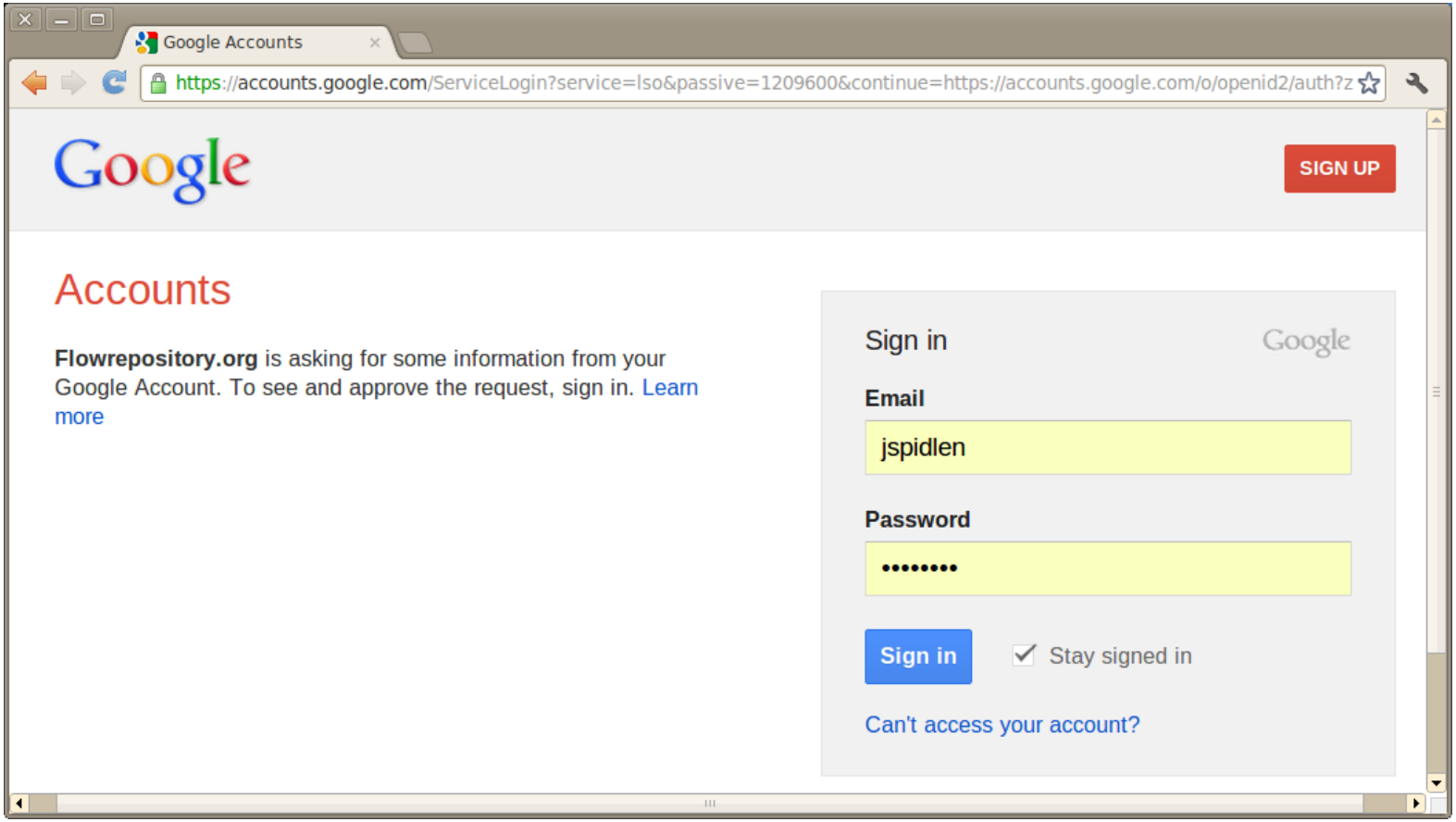

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Accuri C6 (1)
aml (1)
Astrios (1)

Individuals (Show More)
1 (1)
10 (1)
100 (1)

Sample Type
Beads (1)
Env (1)
Regular (1)

Top Channels

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Public Experiments (8)

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Search:

		Experiment Name	Repository ID	FCS Files	PR	Project	MIFlowCyt Score
☐	P	Identification of B cells through negative gating	FR-FCM-ZZZ3	284	Karin Breuer		
☐	P	FCS collection for software testing	FR-FCM-ZZZ4	34	Ryan Brinkman	Community datasets	
☐	P	Human early preterm and full term cord blood study	FR-FCM-ZZZA	6	Francesca D'Alessio	Human early preterm and full term cord blood	
☐	P	Flow Cytometer Sensitivity: A Quadratic Model	FR-FCM-ZZY7	71	Faysal El Khettabi		
☐	P	ICCS CSI Portland 2011 Case 1	FR-FCM-ZZZF	9	Fiona Craig	ICCS CSI Portland 2011	
☐	P	ICCS CSI Portland 2011 Case 3	FR-FCM-ZZZE	7	Fiona Craig	ICCS CSI Portland 2011	
☐	P	ICCS CSI Portland 2011 Case 2	FR-FCM-ZZZG	2	Fiona Craig	ICCS CSI Portland 2011	
☐	P	ICCS CSI Portland 2011 Case 4	FR-FCM-ZZZH	12	Fiona Craig	ICCS CSI Portland 2011	

Showing 1 to 8 of 8 entries

Experiment: Identification of B cells through negative gating **ID:** FR-FCM-ZZZ3 **Labels:** None **Primary Researcher:** Karin Breuer **Public:** Yes MIFlowCyt Score: 89.83%

« Back to Inbox

My Working Illustration »

MIFlowCyt Annotation »

Actions

Experiment
Edit Experiment Details
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Karin Breuer [PR]
Josef Spidlen [x]
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Getting Started: Experiment Details

This Experiment Details Page contains information about the experiment listed above.

- Start describing samples
- Add flow cytometer information
- Review experiment variables
- Analyze your data on-line
- Review MIFlowCyt annotation
- Download FCS files

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- FlowRepository Quick start guide
- Documentation site for Cytobank and FlowRepository

Experiment Details

Experiment: Identification of B cells through negative gating (FR-FCM-ZZZ3)
MIFlowCyt Score: 89.83% [Details]
Keywords: [Innate Immune Response] [Toll-like receptors] [Activation markers] [B cells] [MIFlowCyt]
Labels: None
Pubmed IDs: [20131398]

Primary Researcher: Karin Breuer
PI/Manager: Karin Breuer
Uploaded By: Karin Breuer
Organizations: [Child & Family Research Institute] [University of Washington Medical Center]

Start date: 2007-05-30
End date: 2007-08-21
Created: Apr 2011

Comments: We set out to compare a negative-gating strategy to identify B cells with the usual positive identification of these cells using the canonical B cell surface marker, CD19. We also wanted to assess the functional response of these B cells to Toll-like receptor stimulation using the following TLR ligands: PAM3CSK4, LPS, and CpG-A ODN 2336. The blood draws, PBMC isolation, and TLR stimulations were performed between 30 May and 5 June 2007. The flow cytometry analyses were performed between 8 June and 21 August 2007.

Purpose: The purpose of the experiment presented here was to test whether human B cells can be identified through a negative-gating strategy.

Conclusion: B cells can be identified through a negative-gating strategy. Specifically, B lymphocytes are the MHC II+, CD14neg, CD11cneg, and CD123neg cells. Only on the extreme ends of a response spectrum (i.e., either none of the B cells respond to a given innate stimulation or all/most B cells respond but not monocyte, mDC or pDC) would this B cell negative-gating strategy supply acceptable data. In other words, our negative-gating strategy would potentially be difficult to interpret if both B cell and non-B cell populations responded in low frequency.

QC Experiment: None
QC measures: To standardize voltage settings across samples acquired on different days, single stained controls were included. Voltages were adjusted such that fluorescence intensity was identical for each antibody, regardless of date of acquisition.

Permissions" box.

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populations responded in low frequency.

QC Experiment: None
QC measures: To standardize voltage settings across samples acquired on different days, single stained controls were included. Voltages were adjusted such that fluorescence intensity was identical for each antibody, regardless of date of acquisition.

Illustrations

Name	Active Dimensions			Author	Created	Updated
Test illustration #1	Channels (2) x Populations (1) x Individuals (5) x Plate (5)	Print View	PDF	Karin Breuer	Apr 2011	
Josef's Working Illustration	Individuals (5) x Conditions (0) x Sample Types (0)	Print View	PDF	Josef Spidlen	Nov 2011	Jan 2012
Karin's Working Illustration	Channels (2) x Populations (1) x Individuals (5) x Plate (5)	Print View	PDF	Karin Breuer	May 2011	May 2011

Reset Working Illustration

Attachments

File Name	Date	Uploaded By	Size	md5sum
a2006analysis.jo a2006 FlowJo analysis file	Apr 2011	Karin Breuer	14.4 MB	d8a8ab5...
A2007_Analysis.jo a2007 FlowJo analysis file	Apr 2011	Karin Breuer	13.5 MB	6755643...
A2007_live_gates.jo	Apr 2011	Karin Breuer	634.9 KB	e718a81...
A2008analysis.jo a2008 FlowJo analysis file	Apr 2011	Karin Breuer	13.7 MB	89181af...
A2008livegates.jo	Apr 2011	Karin Breuer	634.4 KB	a0c42d7...
A2009analysis.jo a2009 FlowJo analysis file	Apr 2011	Karin Breuer	13.5 MB	234efec...
A2009livegate.jo	Apr 2011	Karin Breuer	634.3 KB	3b348d9...
A2010Analysis.jo a2010 FloJo analysis file	Apr 2011	Karin Breuer	13.1 MB	eb24f79...
A2010livegate.jo	Apr 2011	Karin Breuer	602.3 KB	157d1bd...
plate_map_for_6hr_ICC_5_concentrations.xlsx plate map	Apr 2011	Karin Breuer	11.9 KB	36546c5...

Attach a file

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FCS Files (284)

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File Name	Sample	Tube Name	Experiment Variables	Panel	Events	Size
a2006_O1T2pb05i_A1_A01.fcs details	show sample description	A1	a2006, A, 1, a2006 O1T2pb05i	Panel 1	109046	9.2 MB
a2006_O1T2pb05i_A2_A02.fcs details	show sample description	A2	a2006, A, 2, a2006 O1T2pb05i	Panel 1	150000	12.6 MB

A2009livegate.jo	Apr 2011	Karin Breuer	634.3 KB	3b348d9...
A2010Analysis.jo a2010 FloJo analysis file	Apr 2011	Karin Breuer	13.1 MB	eb24f79...
A2010livegate.jo	Apr 2011	Karin Breuer	602.3 KB	157d1bd...
plate_map_for_6hr_ICC_5_concentrations.xlsx plate map	Apr 2011	Karin Breuer	11.9 KB	36546c5...

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a2006_O1T2pb05i_A1_A01.fcs details	show sample description	A1	a2006, A, 1, a2006 O1T2pb05i	Panel 1	109046	9.2 MB
a2006_O1T2pb05i_A2_A02.fcs details	show sample description	A2	a2006, A, 2, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_A3_A03.fcs details	show sample description	A3	a2006, A, 3, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_A4_A04.fcs details	show sample description	A4	a2006, A, 4, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_A5_A05.fcs details	show sample description	A5	a2006, A, 5, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_A6_A06.fcs details	show sample description	A6	a2006, A, 6, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_A7_A07.fcs details	show sample description	A7	a2006, A, 7, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_A8_A08.fcs details	show sample description	A8	a2006, A, 8, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_B1_B01.fcs details	show sample description	B1	a2006, B, 1, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_B2_B02.fcs details	show sample description	B2	a2006, B, 2, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_B3_B03.fcs details	show sample description	B3	a2006, B, 3, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_B4_B04.fcs details	show sample description	B4	a2006, B, 4, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_B5_B05.fcs details	show sample description	B5	a2006, B, 5, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_B6_B06.fcs details	show sample description	B6	a2006, B, 6, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_B7_B07.fcs details	show sample description	B7	a2006, B, 7, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_B8_B08.fcs details	show sample description	B8	a2006, B, 8, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_C1_C01.fcs details	show sample description	C1	a2006, C, 1, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_C2_C02.fcs details	show sample description	C2	a2006, C, 2, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_C3_C03.fcs details	show sample description	C3	a2006, C, 3, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_C4_C04.fcs details	show sample description	C4	a2006, C, 4, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_C5_C05.fcs details	show sample description	C5	a2006, C, 5, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_C6_C06.fcs details	show sample description	C6	a2006, C, 6, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_C7_C07.fcs details	show sample description	C7	a2006, C, 7, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_C8_C08.fcs details	show sample description	C8	a2006, C, 8, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_D1_D01.fcs details	show sample description	D1	a2006, D, 1, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_D2_D02.fcs details	show sample description	D2	a2006, D, 2, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_D3_D03.fcs details	show sample description	D3	a2006, D, 3, a2006 O1T2pb05i	Panel 1	150000	12.6 MB
a2006_O1T2pb05i_D4_D04.fcs details	show sample description	D4	a2006, D, 4, a2006 O1T2pb05i	Panel 1	150000	12.6 MB

Experiment: Identification of B cells through negative gating **ID:** FR-FCM-ZZZ3 **Labels:** None **Primary Researcher:** Karin Breuer **Public:** Yes MIFlowCyt Score: 89.83%

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Actions

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a2006_O1T2pb05i_A1_A01.fcs - FCS File Information

Version: FCS3.0
Sample Name: a2006_O1T2pb05i
tube_name: A1
plate_name: a2006_O1T2pb05i
well_id: A01
plate_id: 7231843d-e2de-49a5-aa7b-bfe2c8c2817e
Experiment Name: Identification of B cells through negative gating
Operator Name: kjw2
Comment:
Uploaded: 2011-04-18 21:37:50 UTC
Experiment Date: 08-JUN-2007
Acquisition Begin Time: 13:56:43
Acquisition End Time: 13:58:25
Cytometer: LSRII
Instrument:
Data Type: F
Mode: L
Operating System: Windows XP 5.1
Creator Software: BD FACSDiva Software Version 5.0.2
File Size: 9599761
md5sum: f503d32bd899e98fd7dde6cccee46a11
Events: 109046
Text Start: 256
Text End: 3699
Data Start: 3705
Data End: 9599752
Analysis Start: 0
Analysis End: 0
Supplemental Start: 0
Supplemental End: 0
Channel Count: 22
Time Step: 0.01
Threshold: FSC,5000
spill_string: 8,Am Cyan-A,Pacific Blue-A,APC-A,APC-CY7-A,Alexa 700-A,FITC-A,PerCP-CY5-5-A,PE-CY7-A,1,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,1
ASCII Char Delimiter: 12

Information extracted from FCS

- Keyword-value pairs
- Channel details
- Laser details
- Compensation details

a2006_O1T2pb05i_A1_A01.fcs - FCS File Instrument Settings

Instrument model: BD LSR II
Manufacturer: Becton Dickinson (BD Biosciences)
Flow Cell Type: Using default settings for BD LSR II
Optical Paths: Using default settings for BD LSR II

Change instrument settings

a2006_O1T2pb05i_A1_A01.fcs - FCS File Laser Information

ASF	Name	Delay
Blue	1.10	0.20
Violet	1.00	21.00

Show sample description

FCS Files (284)

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File Name	Sample	Tube Name	Experiment Variables	Panel	Events	Size
a2006_O1T2pb05i_A1_A01.fcs details	show sample description	A1	a2006, A, 1, a2006 O1T2pb05i	Panel 1	109046	9.2 MB
a2006_O1T2pb05i_A2_A02.fcs details	show sample de			Panel 1	150000	12.6 MB
a2006_O1T2pb05i_A3_A03.fcs details	show sample de			Panel 1	150000	12.6 MB
a2006_O1T2pb05i_A4_A04.fcs details	show sample de			Panel 1	150000	12.6 MB
a2006_O1T2pb05i_A5_A05.fcs details	show sample de			Panel 1	150000	12.6 MB
a2006_O1T2pb05i_A6_A06.fcs details	show sample de			Panel 1	150000	12.6 MB
a2006_O1T2pb05i_A7_A07.fcs details	show sample de			Panel 1	150000	12.6 MB
a2006_O1T2pb05i_A8_A08.fcs details	show sample de			Panel 1	150000	12.6 MB
a2006_O1T2pb05i_B1_B01.fcs details	show sample de			Panel 1	150000	12.6 MB
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a2006_O1T2pb05i_B3_B03.fcs details	show sample de			Panel 1	150000	12.6 MB
a2006_O1T2pb05i_B4_B04.fcs details	show sample de			Panel 1	150000	12.6 MB
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a2006_O1T2pb05i_B7_B07.fcs details	show sample de			Panel 1	150000	12.6 MB
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a2006_O1T2pb05i_C3_C03.fcs details	show sample de			Panel 1	150000	12.6 MB
a2006_O1T2pb05i_C4_C04.fcs details	show sample de			Panel 1	150000	12.6 MB
a2006_O1T2pb05i_C5_C05.fcs details	show sample description	C5	a2006, C, 5, a2006 O1T2pb05i	Panel 1	150000	12.6 MB

Description: Blood was drawn via sterile venipuncture into vacutainers containing 143 USP units of sodium-heparin (Becton Dickinson (BD); catalog no. 8019839). Peripheral blood mononuclear cells (PBMC) were isolated by density gradient centrifugation as described in Jansen et al., J Immunol Methods 2008; 336(2): 183-192.
Sample source: [biological] Human peripheral blood
Sample characteristic: Expected/analyzed types of cells: monocytes, myeloid dendritic cells, plasmacytoid dendritic cells, B lymphocytes. T lymphocytes will also be present but not analyzed. Red blood cells are not present as they are lysed when samples are frozen in FACSLyse solution.
Sample treatment: see attached file 'plate map'
Sample staining: [Cell surface protein, CD11c, APC (BD Biosciences BD#340714)] [Intracellular Protein, TNFa, Alexa 700 (BD Biosciences BD#557996)] [Cell Surface Protein, CD14, PE-Cy7 (eBioscience eBio#25-0149)] [Cell Surface Protein, MHCII, PerCPCy5.5 (BD Biosciences BD#custom)] [Intracellular Protein, IFNa, FITC/OG (Antigenix Antigenix#MC100133)] [Intracellular Protein, IL6, APC-Cy7 (BD Biosciences BD#custom)] [Cell Surface Protein, CD123, AmCyan (BD Biosciences BD#custom)] [Intracellular Protein, IL12p40/70, Pacific Blue (eBioscience eBio#577129)]

Edit

Review MIFlowCyt compliance details

Approximated by MIFlowCyt score

- Automatically calculated value between 0% and 100%

Section	MIFlowCyt score contribution
Experiment Overview	30%
Flow Sample/Specimen Details	30%
Instrument Details	20%
Data Analysis Details	20%

- Click on the MIFlowCyt Score bar to review the details

Experiment: Identification of B cells through negative gating **ID:** FR-FCM-ZZZ3 **Labels:** None **Primary Researcher:** Karin Breuer **Public:** Yes MIFlowCyt Score: 89.83%

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MIFlowCyt

Show MIFlowCyt score details
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MIFlowCyt Compliance Score for Experiment: Identification of B cells through negative gating - Repository ID: FR-FCM-ZZZ3

Total MIFlowCyt compliance score: **89.83%**

1 - Experiment Overview - 92.50% provided

Items considered relatively based on importance, 30% contribution to total score.

Item	Compliance [+ -]
Purpose	✓
Keywords	✓
Experiment variables	✓
Organization	✓
Contact	✓
Date	✓
Conclusions	✓
Quality control measures	✓

2 - Flow Sample/Specimen Details - 73.59% provided

Items considered relatively based on importance, 30% contribution to total score.

FCS file	Compliance [+ -]
a2006_O1T2pb05i_A1_A01.fcs	✓
a2006_O1T2pb05i_A2_A02.fcs	✓
a2006_O1T2pb05i_A3_A03.fcs	✓
a2006_O1T2pb05i_A4_A04.fcs	✓
a2006_O1T2pb05i_A5_A05.fcs	✓

Upload and annotation of your own dataset

Typical steps

1. Create a new experiment
2. Upload data (FCS files)
3. Prepare annotation templates
   - Or prepare spreadsheets with annotations
4. Annotate the experiment
   - Describe samples and sample sources
   - Provide experimental variables
   - Describe instrumentation settings
5. Provide analysis details
   - Either analyze data online and create illustrations
   - Or upload third party analysis files (e.g., FlowJo™ workspaces, FCS Express™ project files, FACS Diva™ files, etc.)
6. Review (and improve) your MIFlowCyt compliance

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6. Review (and improve) your MIFlowCyt compliance

Create a new experiment

Bank New Experiment

*** Experiment Name** IDCRP's HIV Natural History Study

Project None

*** Primary Researcher** Nima Aghaeepour

*** PI/Manager** Mario Roederer Invite a new user

Allow PI/Manager to have full access to experiment ☑

*** Starting Date** 2007-07-01 (yyyy-mm-dd)

End Date 2007-10-31 (yyyy-mm-dd)

(optional)

*** Purpose** Identification of immunophenotypes correlated with AIDS free survival of HIV infected patients based on polychromatic flow cytometry analysis of 466 subjects enrolled in Infectious Disease Clinical Research Program's Natural History Study.

Create a new experiment (continued)

Conclusion (optional)
Several immunophenotypes correlated with the survival times were identified. Details about this would typically be listed here but I am not at liberty to share this information during this talk.

Comments (optional)
For reagent and instrument details as well as the original manual gating strategy please see: Ganesan and Chattopadhyay et al., Immunologic and virologic events in early HIV infection predict subsequent rate of progression. Journal of Infectious Diseases, 2010:201:272–284.

Quality Control Measures (optional)
Per-channel empirical distribution comparison

Quality Control Experiment (optional)
-- None --

Create a new experiment (continued)

Keywords (optional): HIV, AIDS Free Survival, Bioinformatics

Organizations (optional):
-- None --
BC Cancer Agency, Terry Fox Laboratory
University of British Columbia, Faculty of Medica

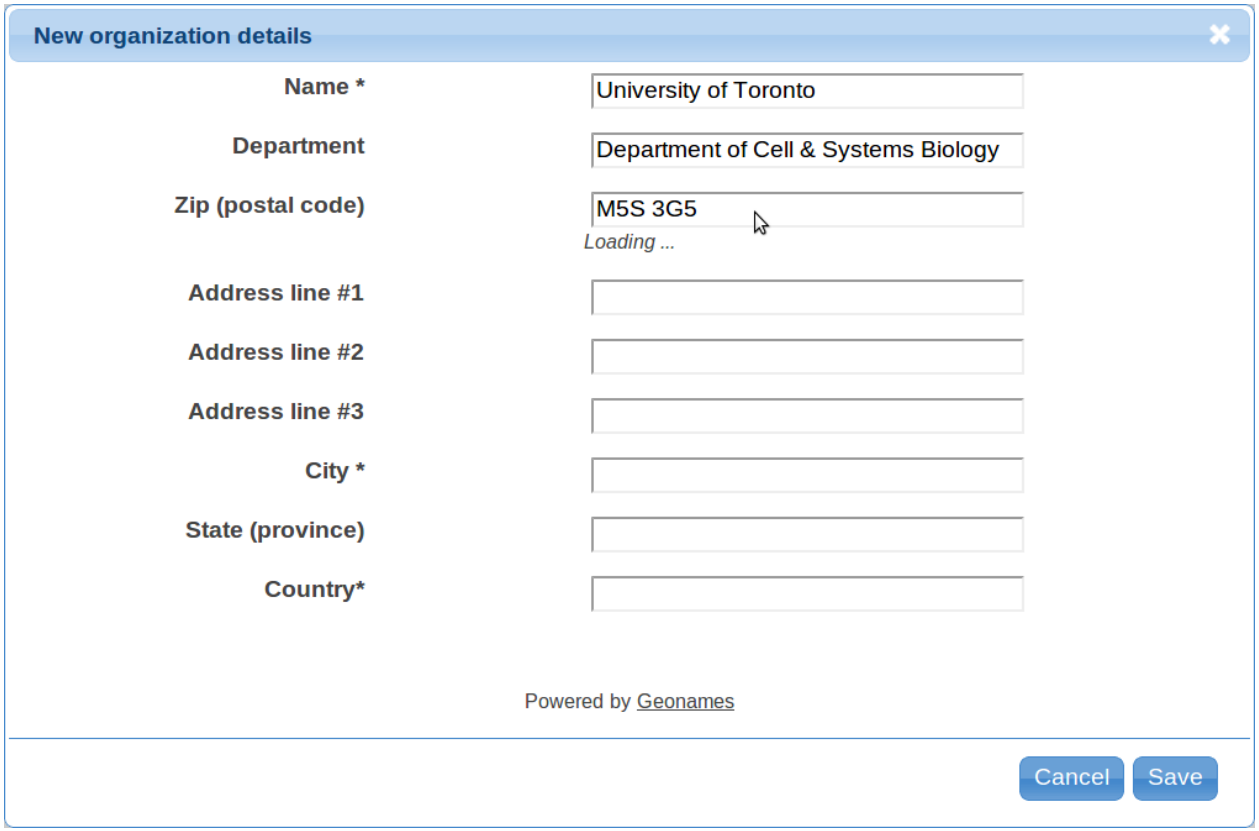
Add new organization

Pubmed IDs (optional): 20001854, 18667932

*** required field**

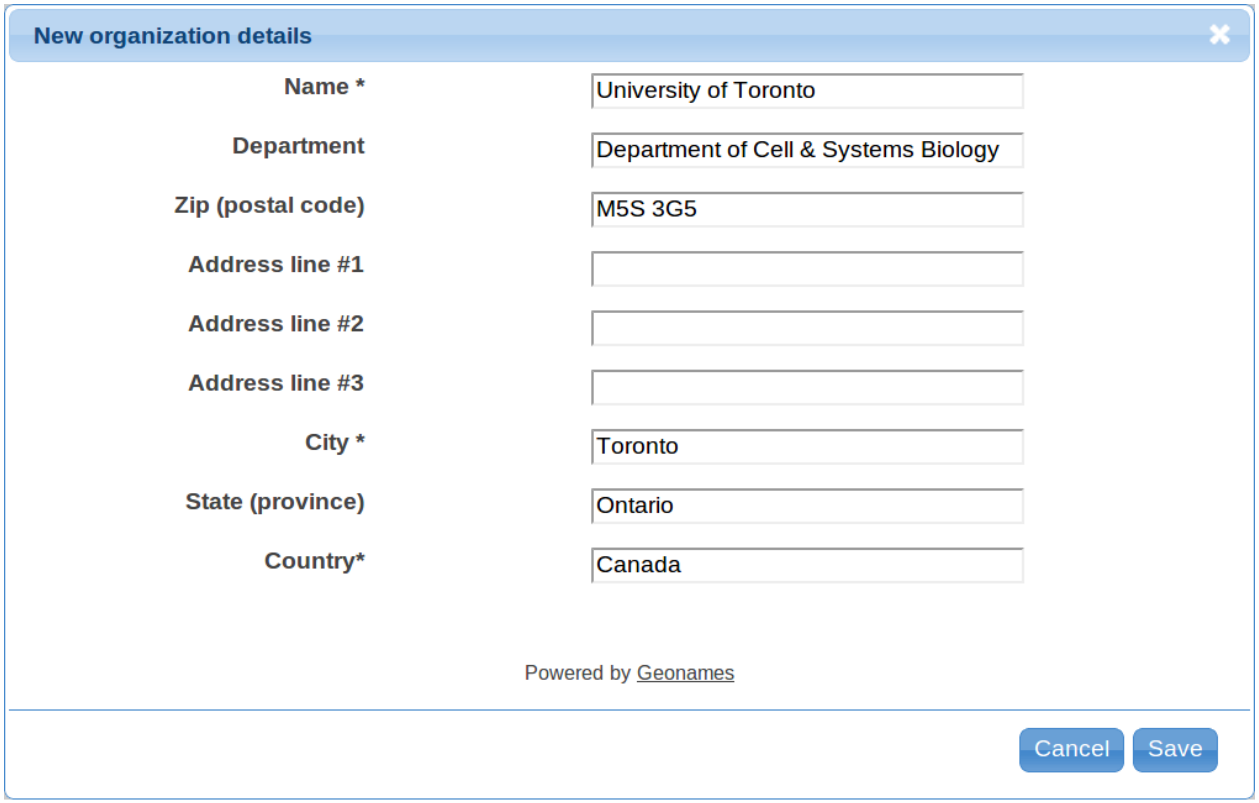
Create Experiment

Adding new organization



- Auto-complete based on ZIP supported for 60 countries
- Country is assumed based on your location unless specified in the Country field

Adding new organization



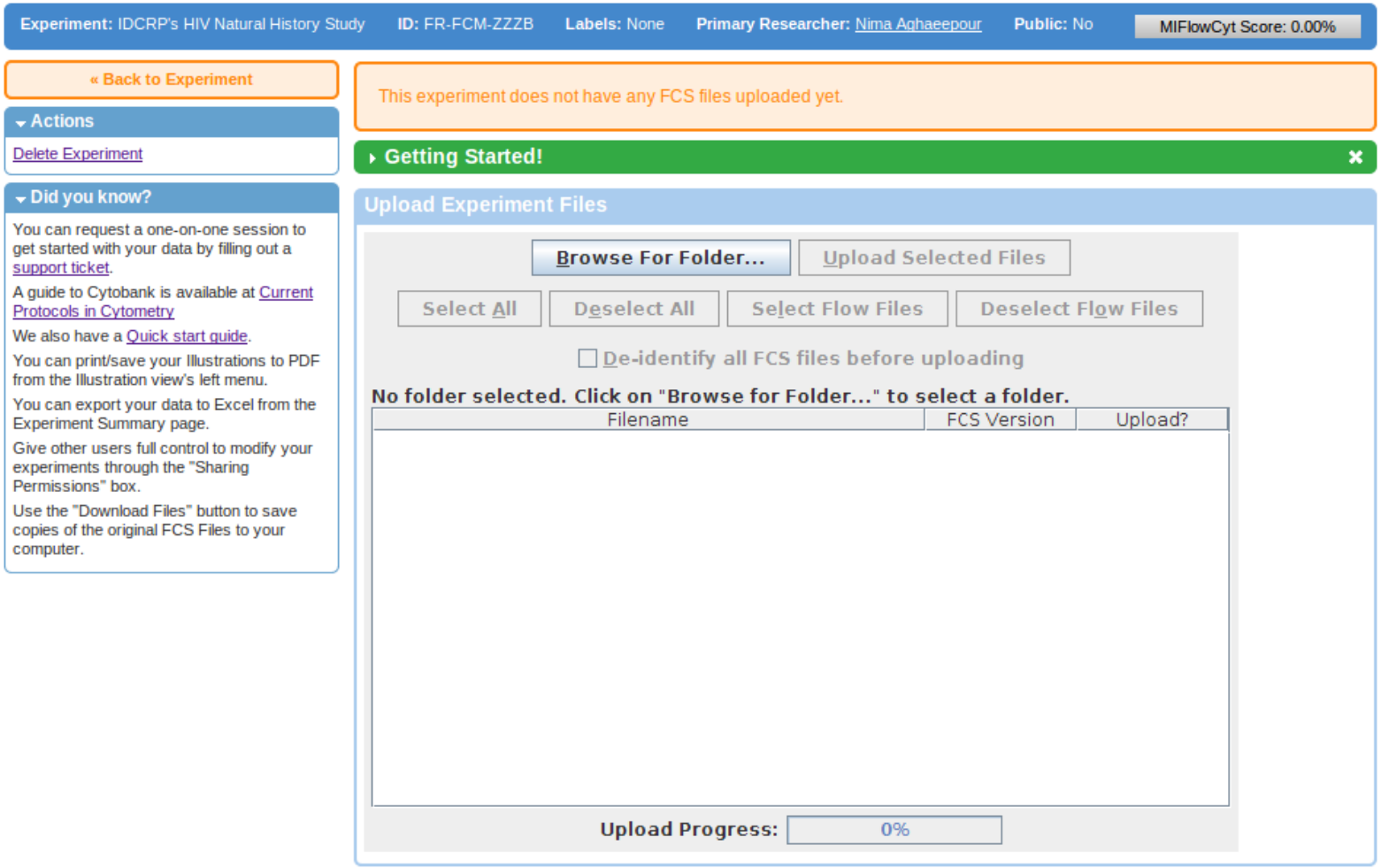
- Auto-complete based on ZIP supported for 60 countries
- Country is assumed based on your location unless specified in the Country field

Upload and annotation of your own dataset

Typical steps

1. Create a new experiment
2. Upload data (FCS files)
3. Prepare annotation templates
   - Or prepare spreadsheets with annotations
4. Annotate the experiment
   - Describe samples and sample sources
   - Provide experimental variables
   - Describe instrumentation settings
5. Provide analysis details
   - Either analyze data online and create illustrations
   - Or upload third party analysis files (e.g., FlowJo™ workspaces, FCS Express™ project files, FACS Diva™ files, etc.)
6. Review (and improve) your MIFlowCyt compliance

Data upload


Experiment: IDCRP's HIV Natural History Study
ID: FR-FCM-ZZZB
Labels: None
Primary Researcher: Nima Aghaeepour
Public: No
MIFlowCyt Score: 0.00%
« Back to Experiment
Actions
Delete Experiment
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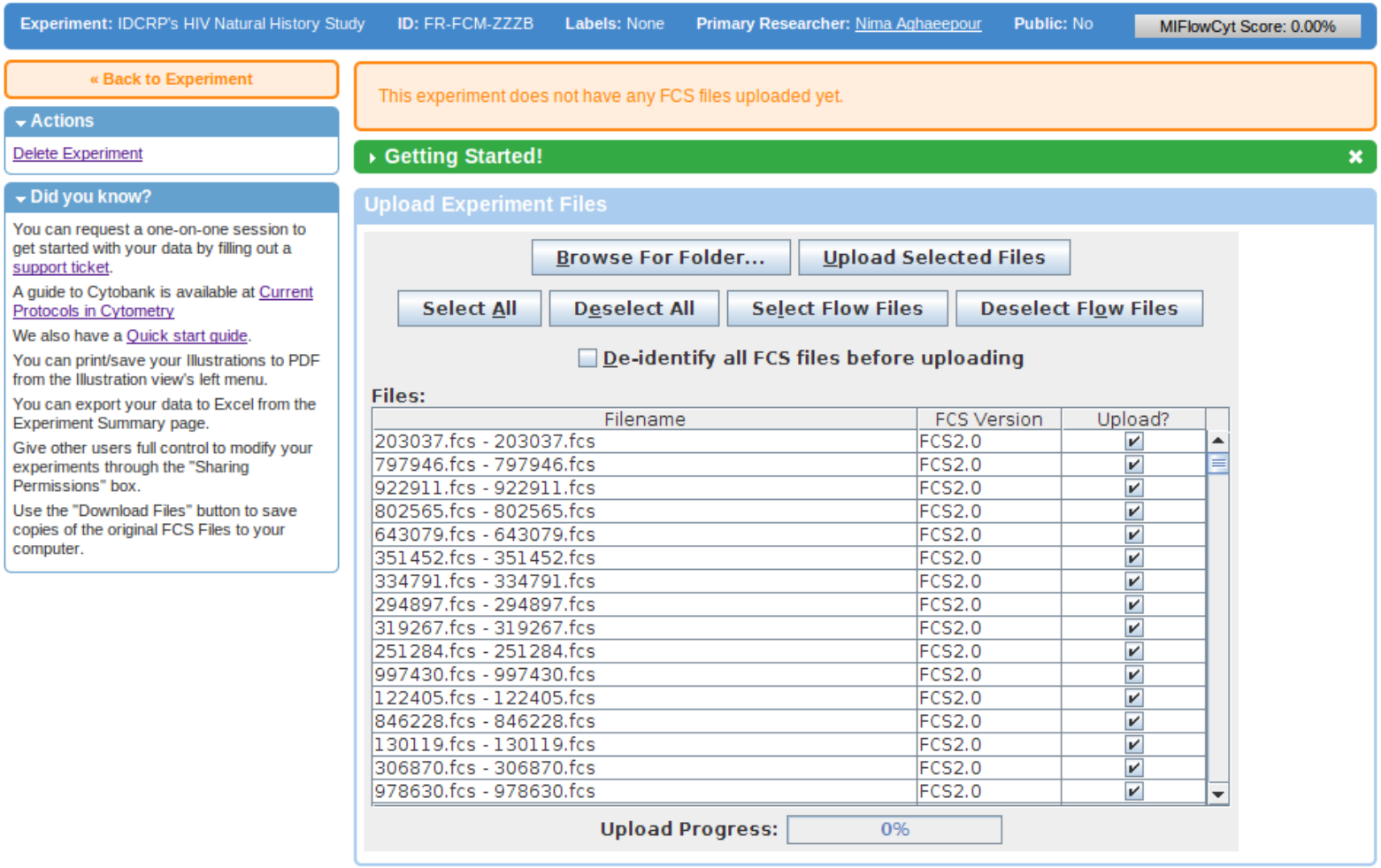
Use the "Download Files" button to save copies of the original FCS Files to your computer.
This experiment does not have any FCS files uploaded yet.
Getting Started!
Upload Experiment Files
Browse For Folder...
Upload Selected Files
Select All
Deselect All
Select Flow Files
Deselect Flow Files
De-identify all FCS files before uploading
No folder selected. Click on "Browse for Folder..." to select a folder.
Filename
FCS Version
Upload?
Upload Progress:
0%
Terms of Service
Privacy Policy
Support
Feedback

Data upload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Upload Selected Files
Select All
Deselect All
Select Flow Files
Deselect Flow Files
De-identify all FCS files before uploading
Files:
Filename
FCS Version
Upload?
203037.fcs - 203037.fcs FCS2.0
797946.fcs - 797946.fcs FCS2.0
922911.fcs - 922911.fcs FCS2.0
802565.fcs - 802565.fcs FCS2.0
643079.fcs - 643079.fcs FCS2.0
351452.fcs - 351452.fcs FCS2.0
334791.fcs - 334791.fcs FCS2.0
294897.fcs - 294897.fcs FCS2.0
319267.fcs - 319267.fcs FCS2.0
251284.fcs - 251284.fcs FCS2.0
997430.fcs - 997430.fcs FCS2.0
122405.fcs - 122405.fcs FCS2.0
846228.fcs - 846228.fcs FCS2.0
130119.fcs - 130119.fcs FCS2.0
306870.fcs - 306870.fcs FCS2.0
978630.fcs - 978630.fcs FCS2.0
Upload Progress:
0%
Terms of Service
Privacy Policy
Support
Feedback

Data upload - de-identification

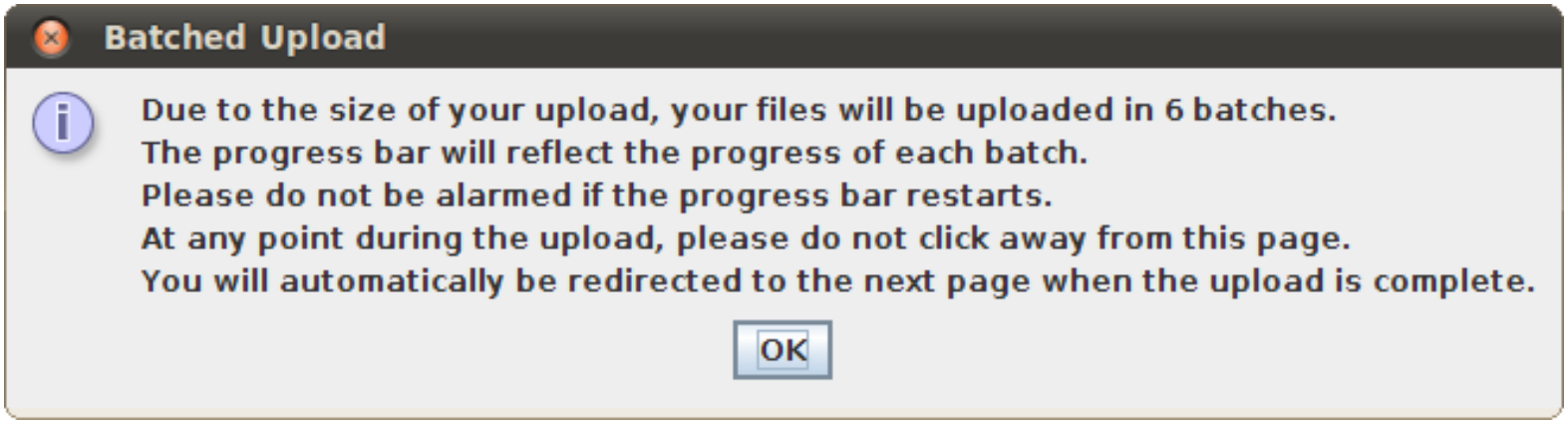
De-identification

- Remove identifiers that could be used to identify an individual
- Generally, privacy rules do not apply on de-identified data
  - → Allows for sharing
  - Check with your regulatory authority as applicable, e.g., Health Insurance Portability and Accountability Act (HIPAA)

Implementation in FlowRepository

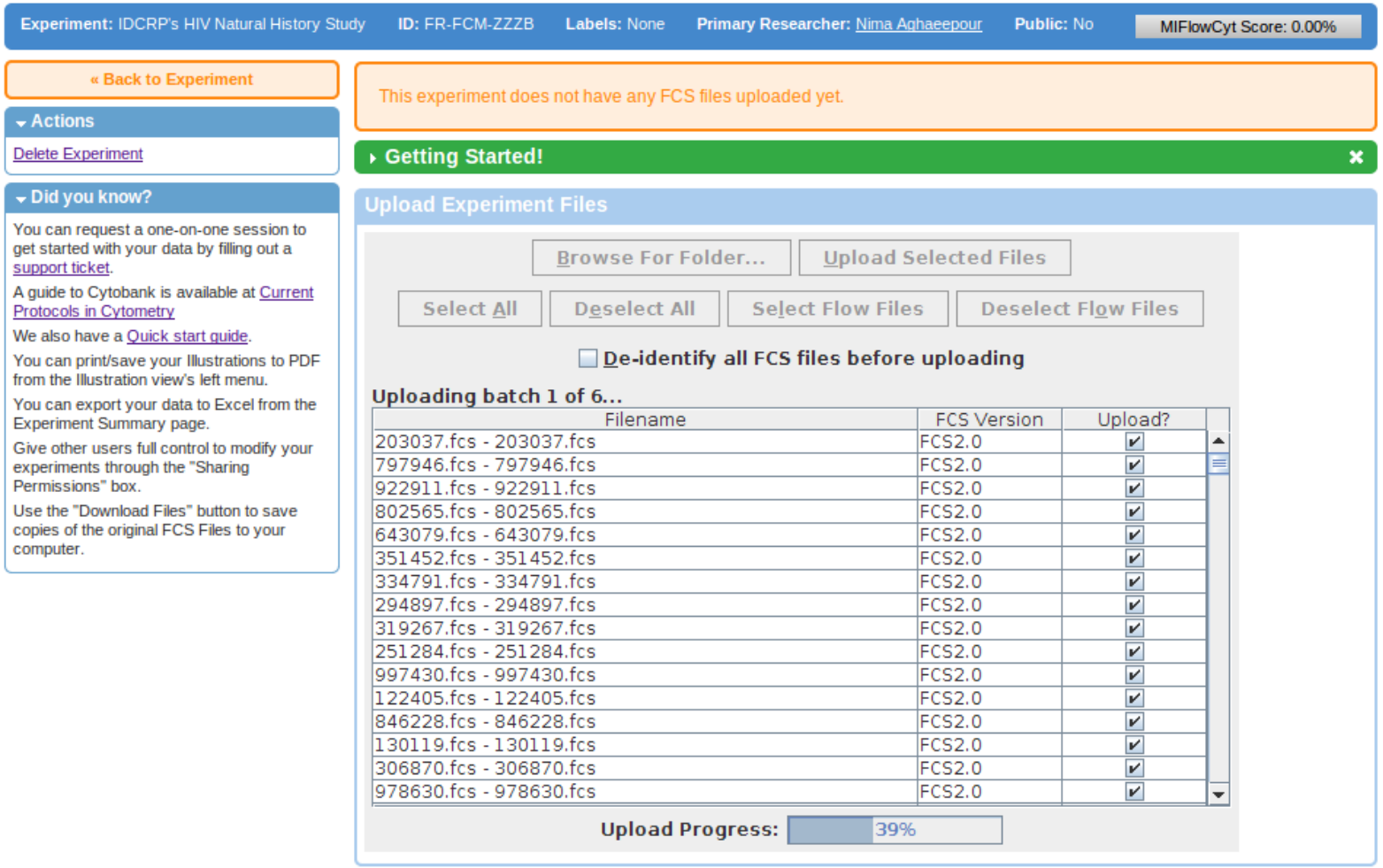
- Automated removal of all keyword values unless in our *safe* list
  - Safe list: Over 220 keywords identified from a few hundred FCS data files produced by dozens of instruments from several vendors
- Integrated in the upload process
  - Performed locally → no sensitive information leaves your computer

Data upload (large dataset)



- In our example, we are uploading 11 GB of data
- This message is only shown for uploads larger than 2 GB

Data upload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ID: FR-FCM-ZZZB
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De-identify all FCS files before uploading
Uploading batch 1 of 6...
Filename
FCS Version
Upload?
203037.fcs - 203037.fcs
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802565.fcs - 802565.fcs
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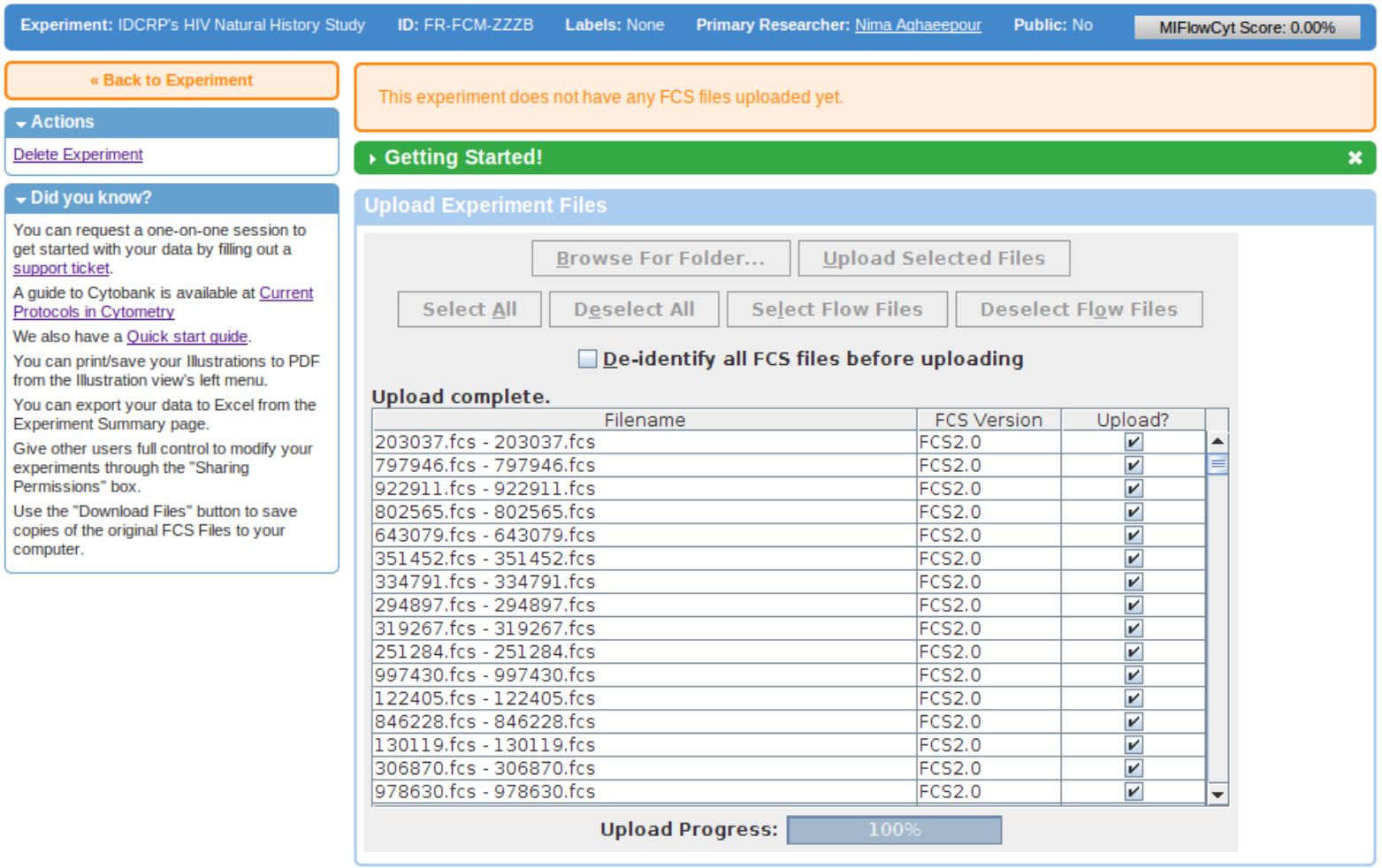
846228.fcs - 846228.fcs
130119.fcs - 130119.fcs
306870.fcs - 306870.fcs
978630.fcs - 978630.fcs
FCS2.0
Upload Progress:
39%
Terms of Service
Privacy Policy
Support
Feedback

Data upload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ID: FR-FCM-ZZZB
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Primary Researcher: Nima Aghaeepour
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Upload complete.
Filename
FCS Version
Upload?
203037.fcs - 203037.fcs
797946.fcs - 797946.fcs
922911.fcs - 922911.fcs
802565.fcs - 802565.fcs
643079.fcs - 643079.fcs
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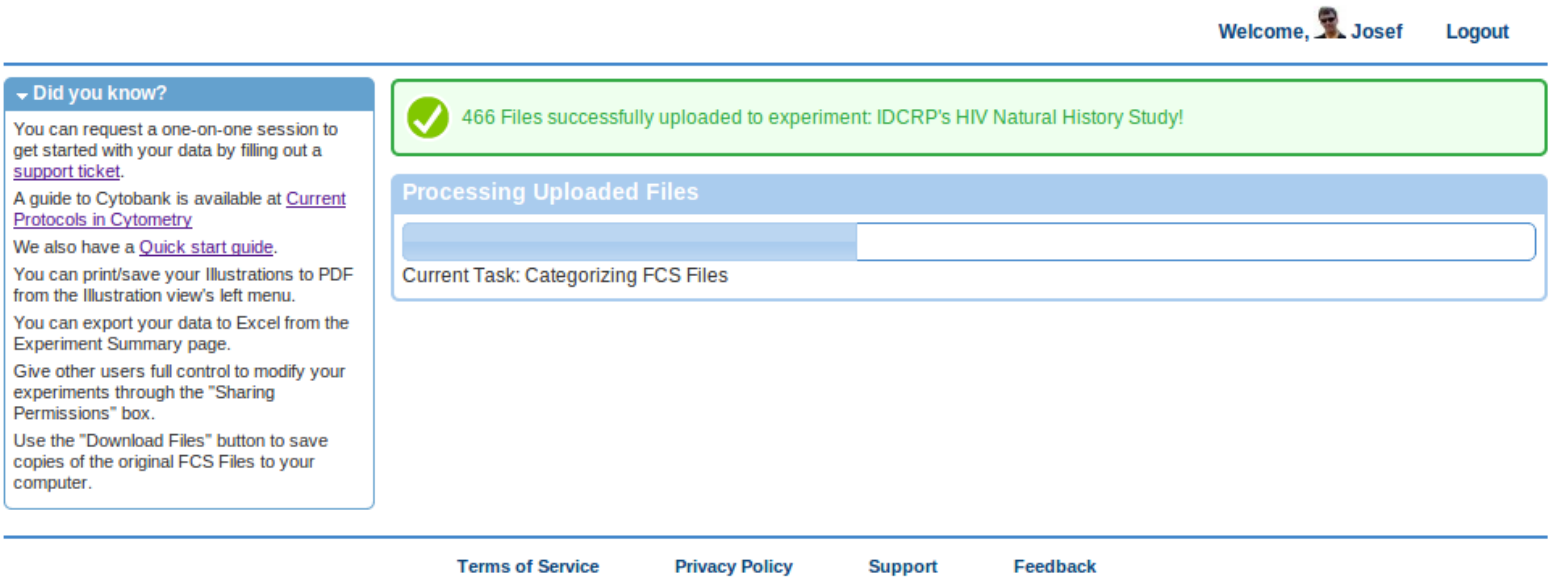
130119.fcs - 130119.fcs
306870.fcs - 306870.fcs
978630.fcs - 978630.fcs
FCS2.0
Upload Progress:
100%
Terms of Service
Privacy Policy
Support
Feedback

Data upload



- Data files will be automatically categorized and assigned to staining panels after the upload

Data upload

« Back to Inbox

Actions

Start An Illustration
View Experiment Summary

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Use the "Download Files" button to save copies of the original FCS Files to your computer.

466 files were successfully uploaded and categorized for the experiment: IDCRP's HIV Natural History Study!

Getting Started

- Verify that your files have been categorized correctly below. If they are not, go to the Channel Annotation Page to recategorize them
- Start An Illustration : go directly to the figure creation page
- View Experiment Summary : view/edit experiment info and sharing permissions

Experiment Files

100715.fcs (Tube_025)
105696.fcs (Tube_009)
108701.fcs (Tube_001)
109025.fcs (Tube_009)
109567.fcs (Tube_017)
110539.fcs (Tube_022)
113548.fcs (Tube_003)
121069.fcs (Tube_001)

Compensation Controls

Other Controls (Lyocells, Beads, etc)

Experiment: IDCRP's HIV Natural History Study **ID:** FR-FCM-ZZZB **Labels:** None **Primary Researcher:** Nima Aghaeepour **Public:** No MIFlowCyt Score: 31.50%

« Back to Inbox

My Working Illustration »

MIFlowCyt Annotation »

Actions

Experiment

Edit Experiment Details

Delete Experiment

FCS Files

Download FCS Files

Upload More FCS Files

De-identify FCS Files

Review Keywords in FCS files

Sharing Permissions

Full Access Users

Nima Aghaeepour [PR]

Josef Spidlen [x]

Ryan Brinkman [x]

Invite a new user

Share with a User (Full Access)

This experiment is currently **private.**

Share with Everyone

You can also **create a secret access code** to share with reviewers.

Share with Reviewers

Getting Started: Experiment Details

Experiment Details

Illustrations

Name	Active Dimensions			Author	Created	Updated
Josef's Working Illustration	Channels (0) x Populations (1)	Print View	PDF	Josef Spidlen	May 2012	May 2012

Reset Working Illustration

Attachments

File Name	Date	Uploaded By	Size	md5sum

Attach a file

Choose File No file chosen

Upload

FCS Files (466)

Download Files Upload More Files De-identify FCS Files Review Keywords in FCS files

File Name	Sample	Tube Name	Experiment Variables	Panel	Events	Size
100715.fcs details	100715.fcs	Tube_025		Panel 1	65016	4 MB
105696.fcs details	105696.fcs	Tube_009		Panel 1	455184	27.8 MB
108701.fcs details	108701.fcs	Tube_001		Panel 1	1000000	61 MB
109025.fcs details	109025.fcs	Tube_009		Panel 1	210186	12.8 MB
109567.fcs details	109567.fcs	Tube_017		Panel 1	160074	9.8 MB
110539.fcs details	110539.fcs	Tube_022		Panel 1	364212	22.2 MB
113548.fcs details	113548.fcs	Tube_003		Panel 1	177102	10.8 MB
121069.fcs details	121069.fcs	Tube_001		Panel 1	542538	33.1 MB
122405.fcs details	122405.fcs	Tube_010		Panel 1	476208	29.1 MB

Upload and annotation of your own dataset

Typical steps

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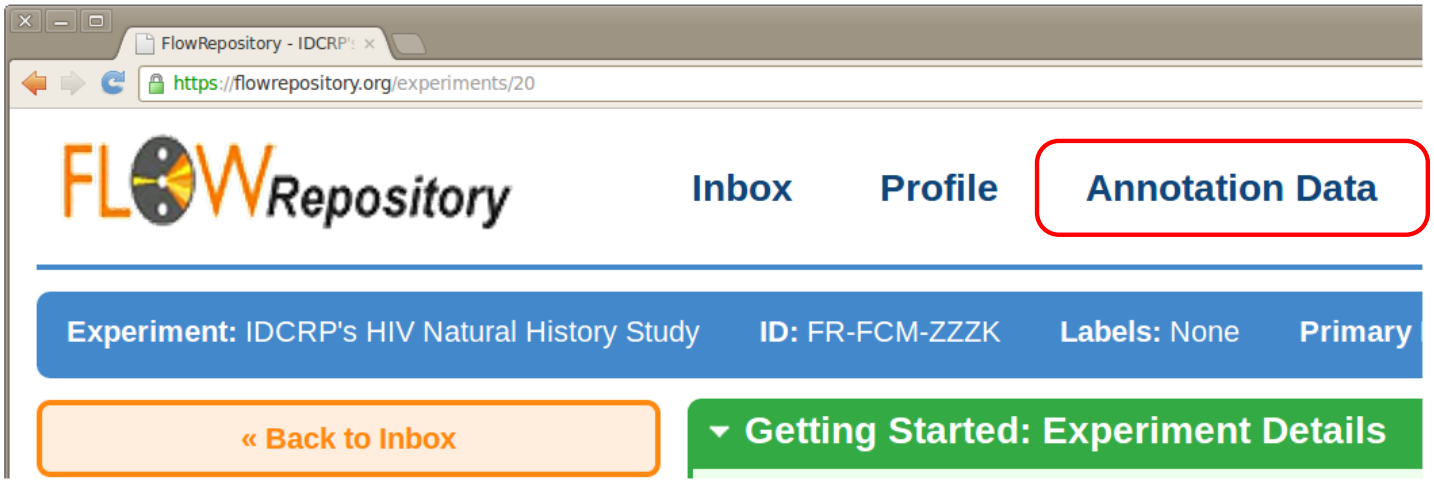
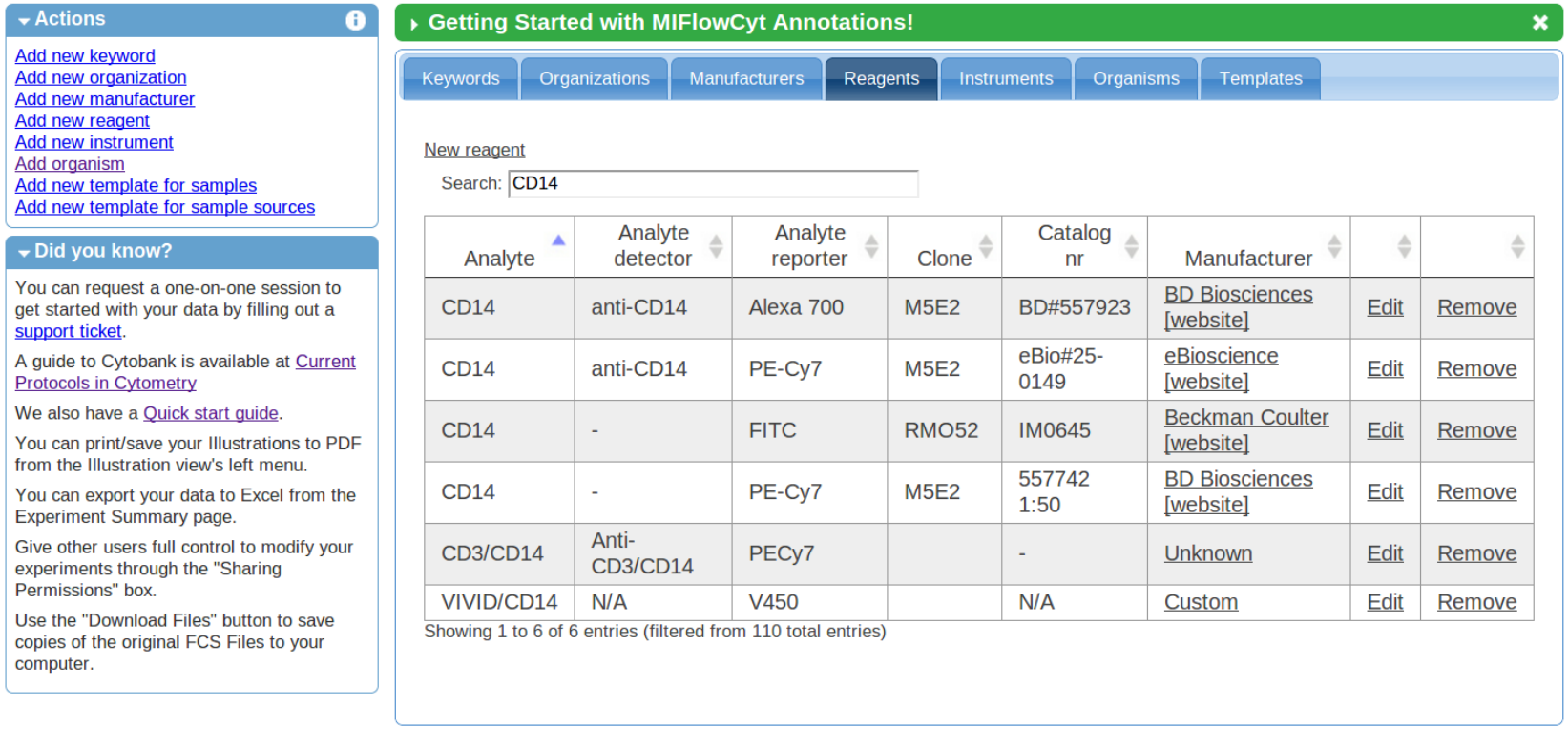
   - Or upload third party analysis files (e.g., FlowJo™ workspaces, FCS Express™ project files, FACS Diva™ files, etc.)
6. Review (and improve) your MIFlowCyt compliance

Prepare annotation data



- Follow the Annotation Data link
  - Set of *concepts* applicable to samples even from different datasets

Prepare annotation data – reagents



Actions

Add new keyword
Add new organization
Add new manufacturer
Add new reagent
Add new instrument
Add organism
Add new template for samples
Add new template for sample sources

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Getting Started with MIFlowCyt Annotations!

Keywords | Organizations | Manufacturers | Reagents | Instruments | Organisms | Templates

New reagent

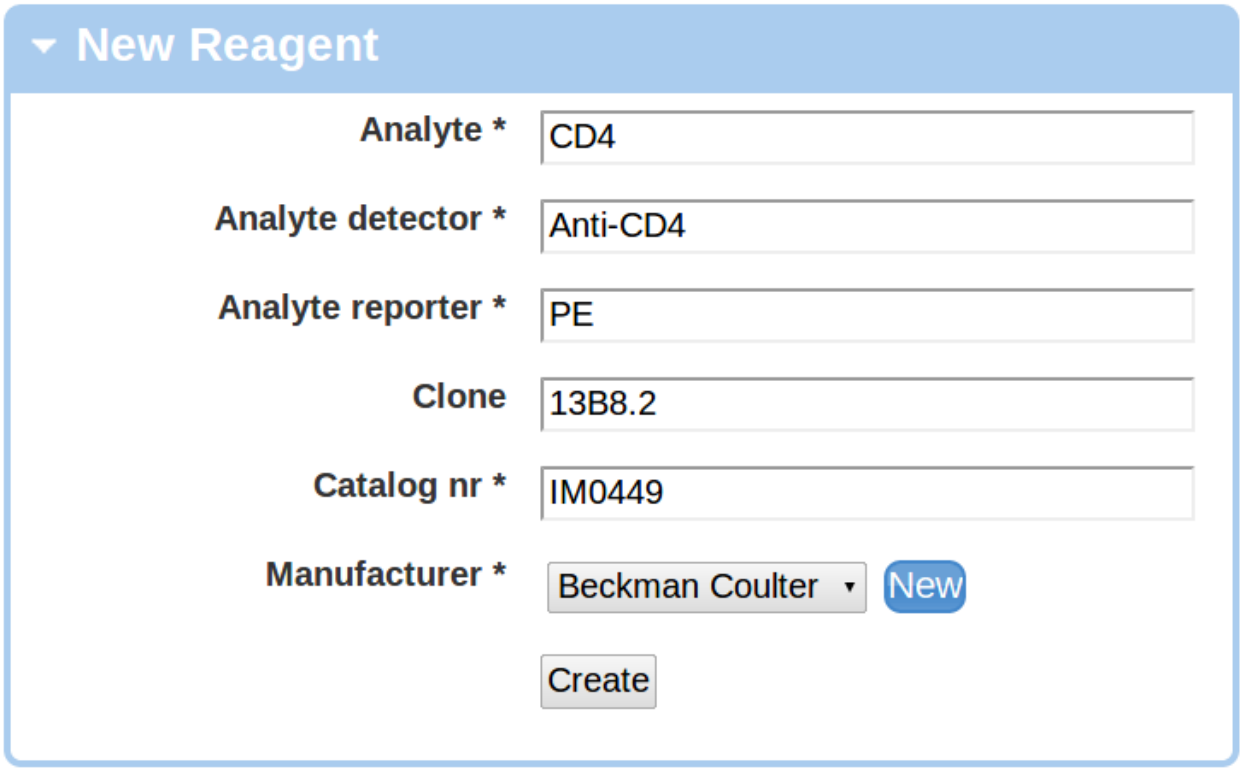
Search: CD14

Analyte	Analyte detector	Analyte reporter	Clone	Catalog nr	Manufacturer		
CD14	anti-CD14	Alexa 700	M5E2	BD#557923	BD Biosciences [website]	Edit	Remove
CD14	anti-CD14	PE-Cy7	M5E2	eBio#25-0149	eBioscience [website]	Edit	Remove
CD14	-	FITC	RMO52	IM0645	Beckman Coulter [website]	Edit	Remove
CD14	-	PE-Cy7	M5E2	557742 1:50	BD Biosciences [website]	Edit	Remove
CD3/CD14	Anti-CD3/CD14	PECy7		-	Unknown	Edit	Remove
VIVID/CD14	N/A	V450		N/A	Custom	Edit	Remove

Showing 1 to 6 of 6 entries (filtered from 110 total entries)

- Define reagents used in the dataset

Prepare annotation data – add reagents



- Provide details as required by MIFlowCyt

Prepare annotation data – instruments

- Your instrument is most likely in the system already

Keywords | Organizations | Manufacturers | Reagents | Instruments | Organisms | Templates

New instrument

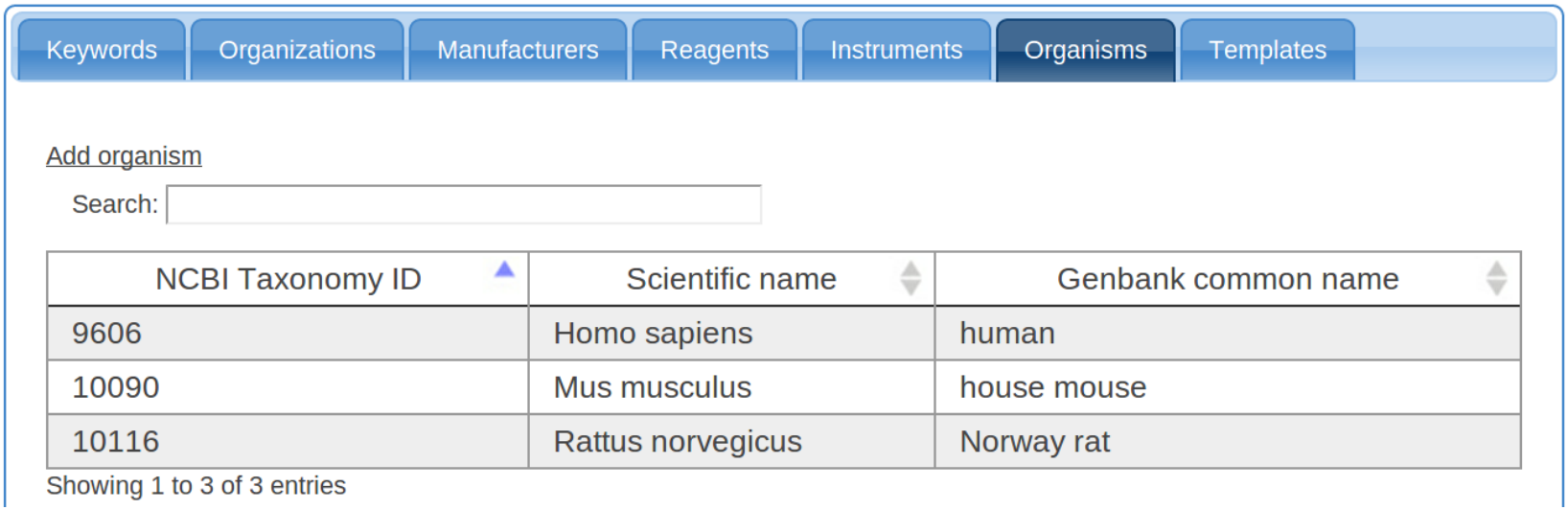
Search:

Model	Manufacturer	Other		
A10-Bryte	Apogee Flow Systems http://www.apogeeflow.com		Edit	Remove
A40-Military	Apogee Flow Systems http://www.apogeeflow.com		Edit	Remove
A50-Micro	Apogee Flow Systems http://www.apogeeflow.com		Edit	Remove
A50-Universal	Apogee Flow Systems http://www.apogeeflow.com		Edit	Remove
Accuri C6	Becton Dickinson (BD Biosciences) http://www.bdbiosciences.com		Edit	Remove
Attune	Applied Biosystems http://www.appliedbiosystems.com		Edit	Remove
Auto-A40	Apogee Flow Systems http://www.apogeeflow.com		Edit	Remove

Prepare annotation data – organisms

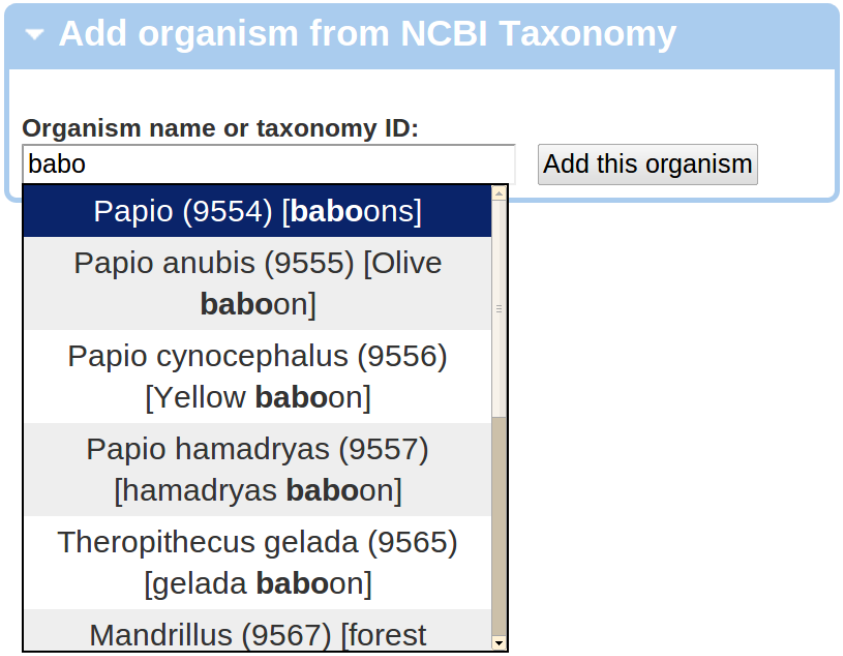
- The NCBI Taxonomy contains hundreds of thousands of organisms
- FlowRepository contains 20,000 of these
  - Selected based on either having a common English name or appearance in GeneBank
- But this is still a long list (for drop down selections)

→ We only show what has been used or explicitly requested



Prepare annotation data – add organism

- Follow the Add organism link
- Start typing either the Latin or the English name
- Auto-complete will show suggestions after the first 3 characters



Prepare annotation data – templates

- Start with sample sources

Keywords | Organizations | Manufacturers | Reagents | Instruments | Organisms | Templates

New annotation template for samples
New annotation template for sample sources

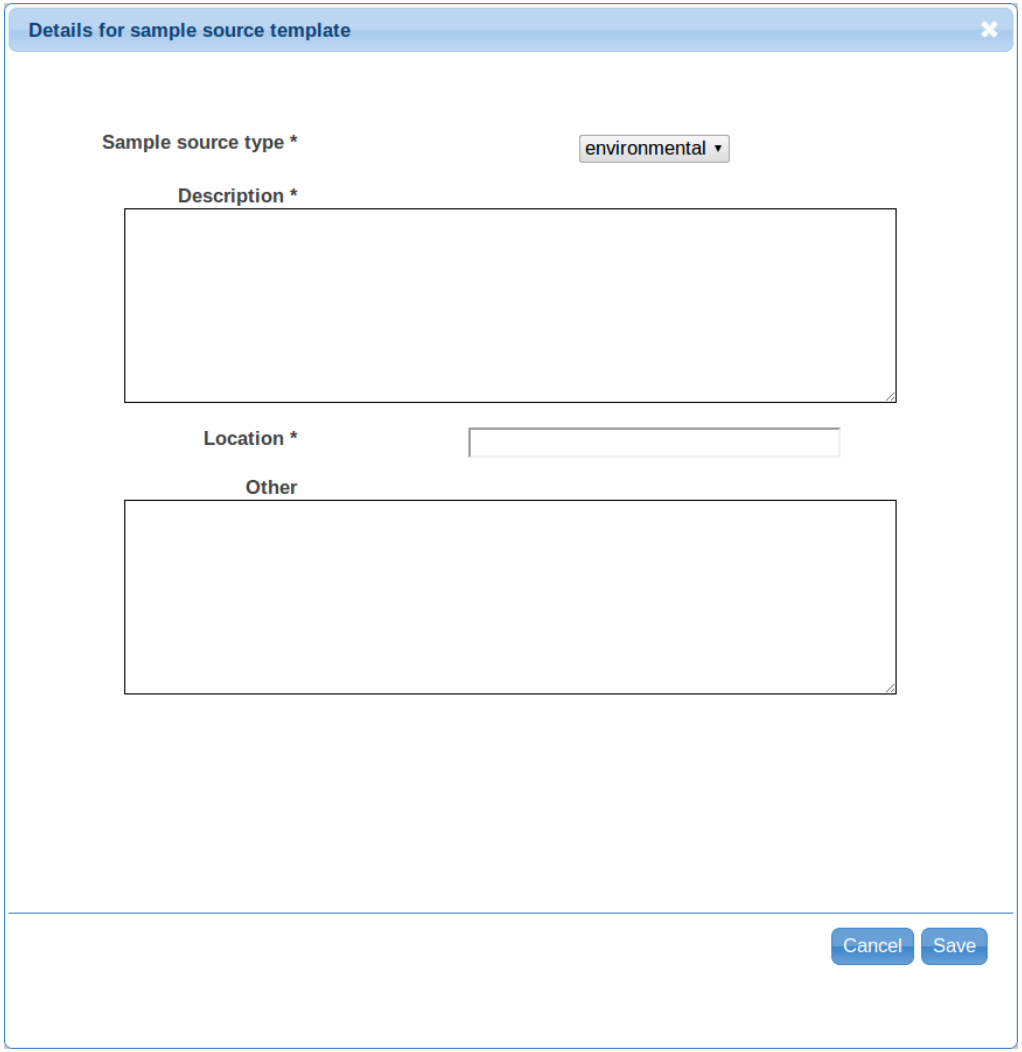
Search:

Annotation Type	Template Name	User	Public		
Sample	Sample template Kollmann #1	Karin Breuer	yes	Show	Remove
Sample	JS Sample 1	Josef Spidlen	no	Show	Remove
Sample source	sample source template Kollmann #1	Karin Breuer	yes	Show	Remove
Sample source	12w MOLD/RkJ M mouse	Josef Spidlen	no	Show	Remove

Showing 1 to 4 of 4 entries

Prepare annotation data – create sample source templates

- Different items required based on the sample source type
- Form changes accordingly
- Use ? for variable fields



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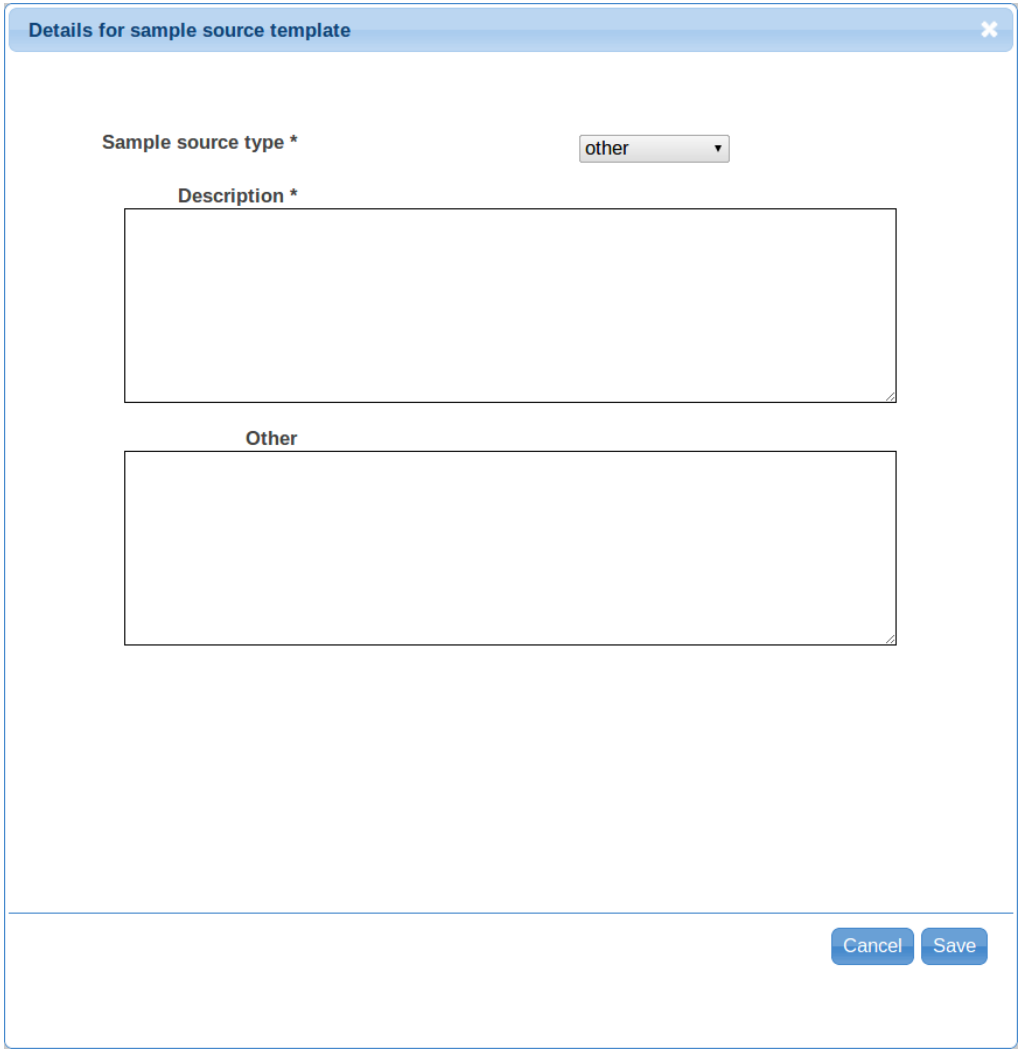
- Form changes accordingly
- Use ? for variable fields



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- Different items required based on the sample source type
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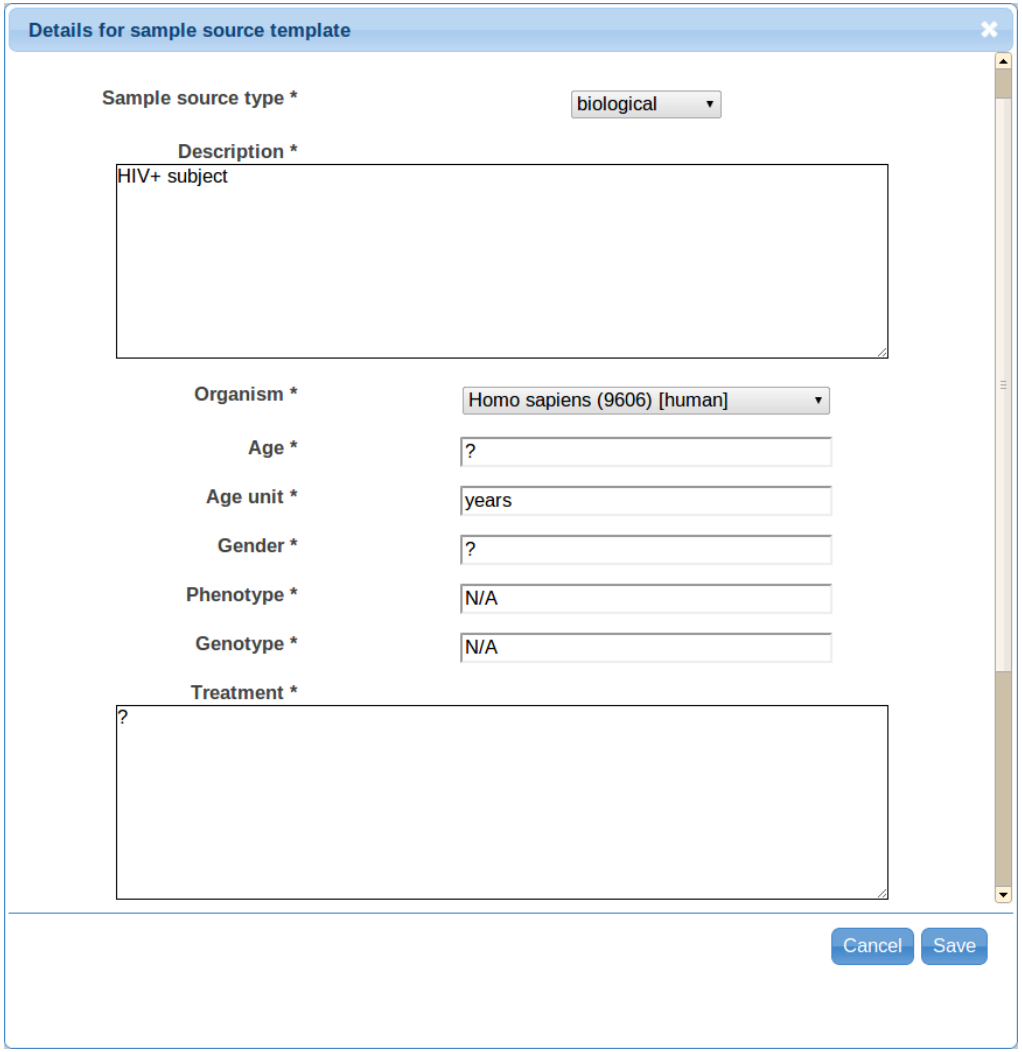
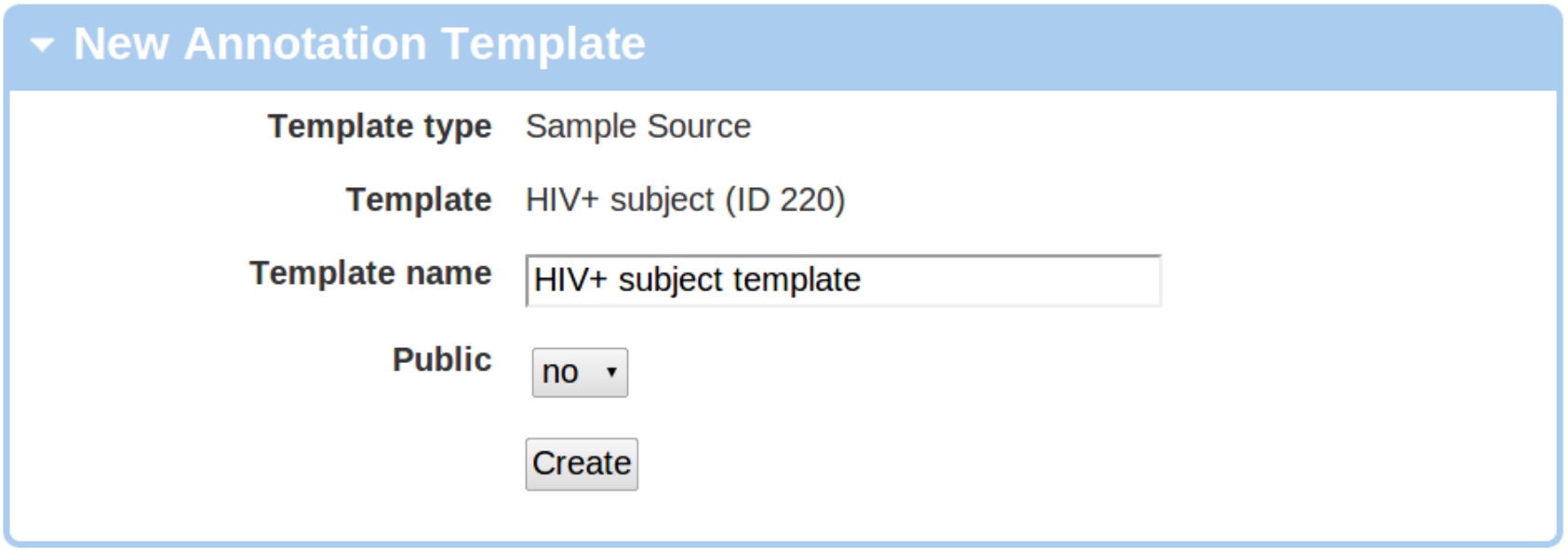
- Use ? for variable fields

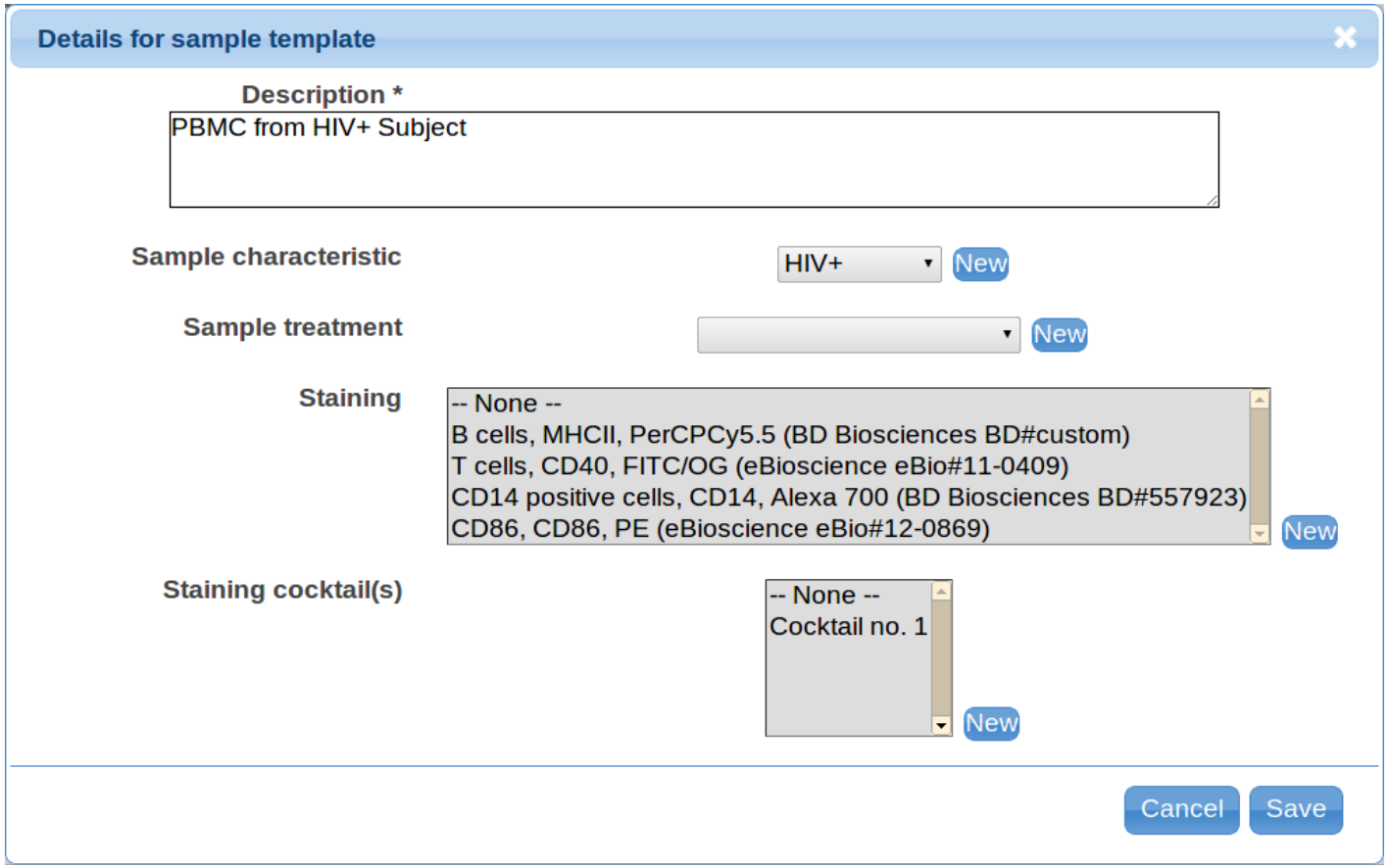


Prepare annotation data – create sample source templates

- Finally, name and save your *Sample source* template

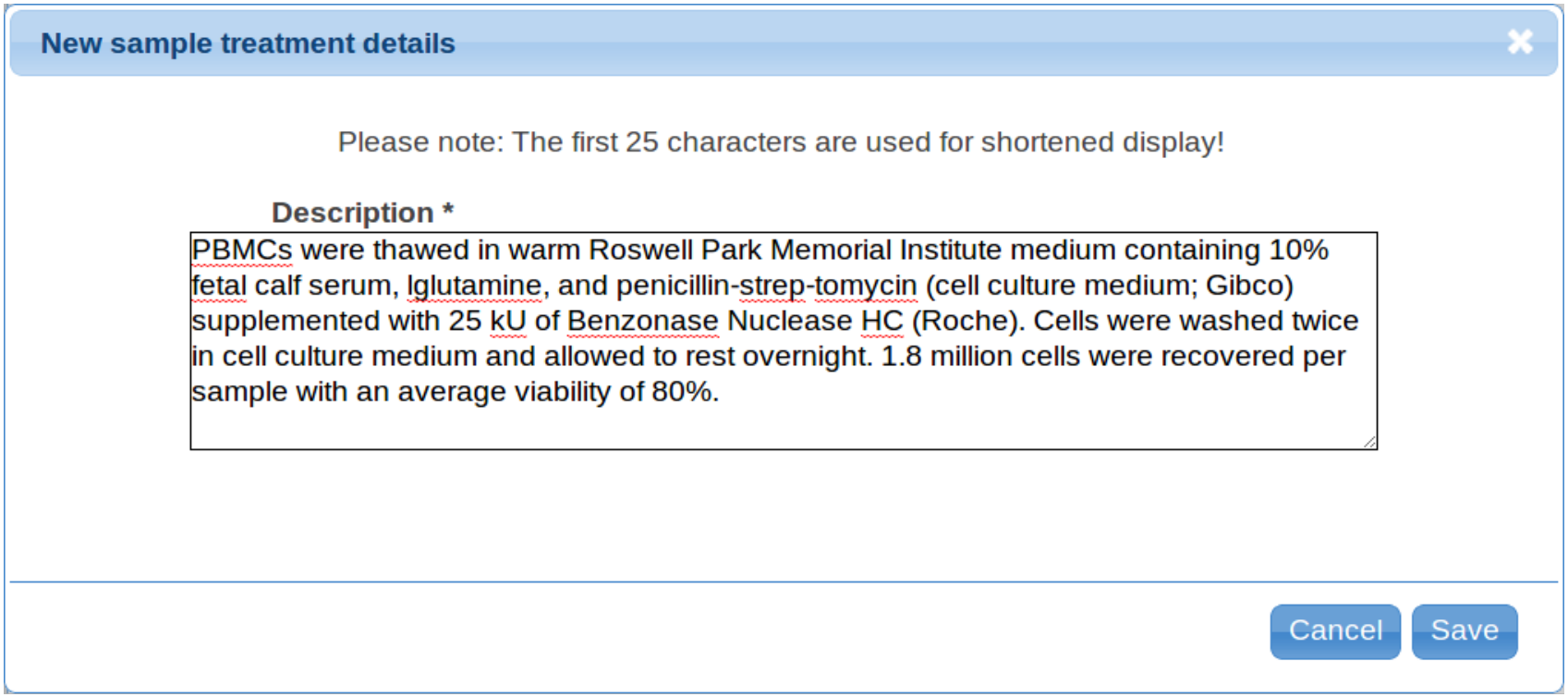


Prepare annotation data – create sample templates



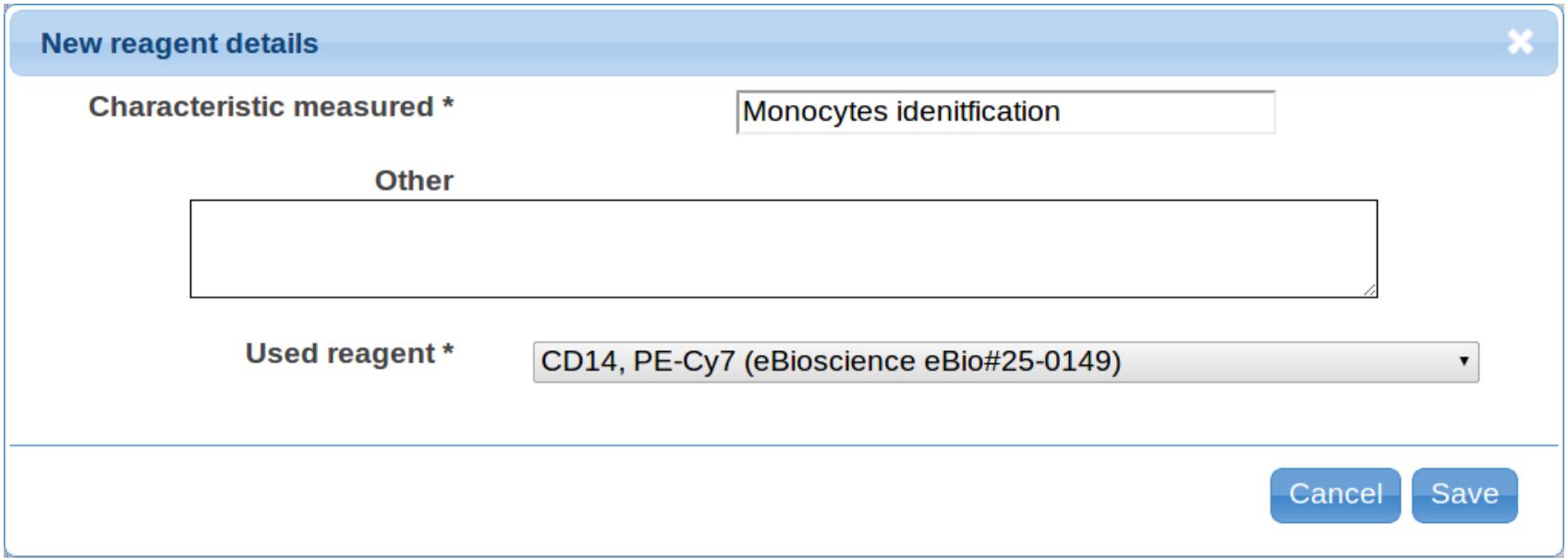
Prepare annotation data – create sample templates

- Describe sample treatment



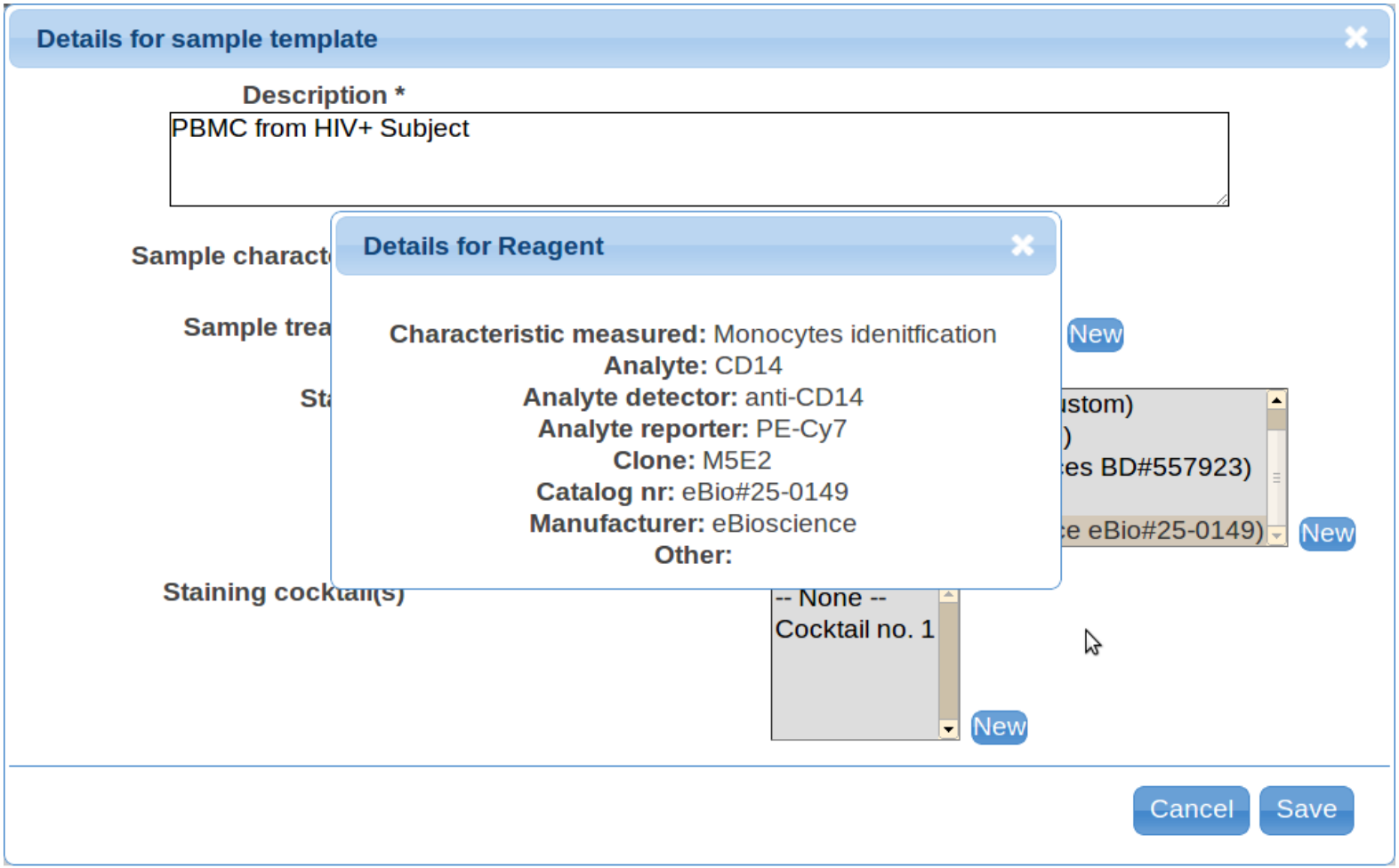
Prepare annotation data – create sample templates

- Define reagents including what characteristics they are measuring, especially if there may be ambiguity, e.g.,
  - Propidium Iodide (PI) with permeabilized cells → DNA content (cell cycle)
  - PI with non-permeabilized cells → cell viability



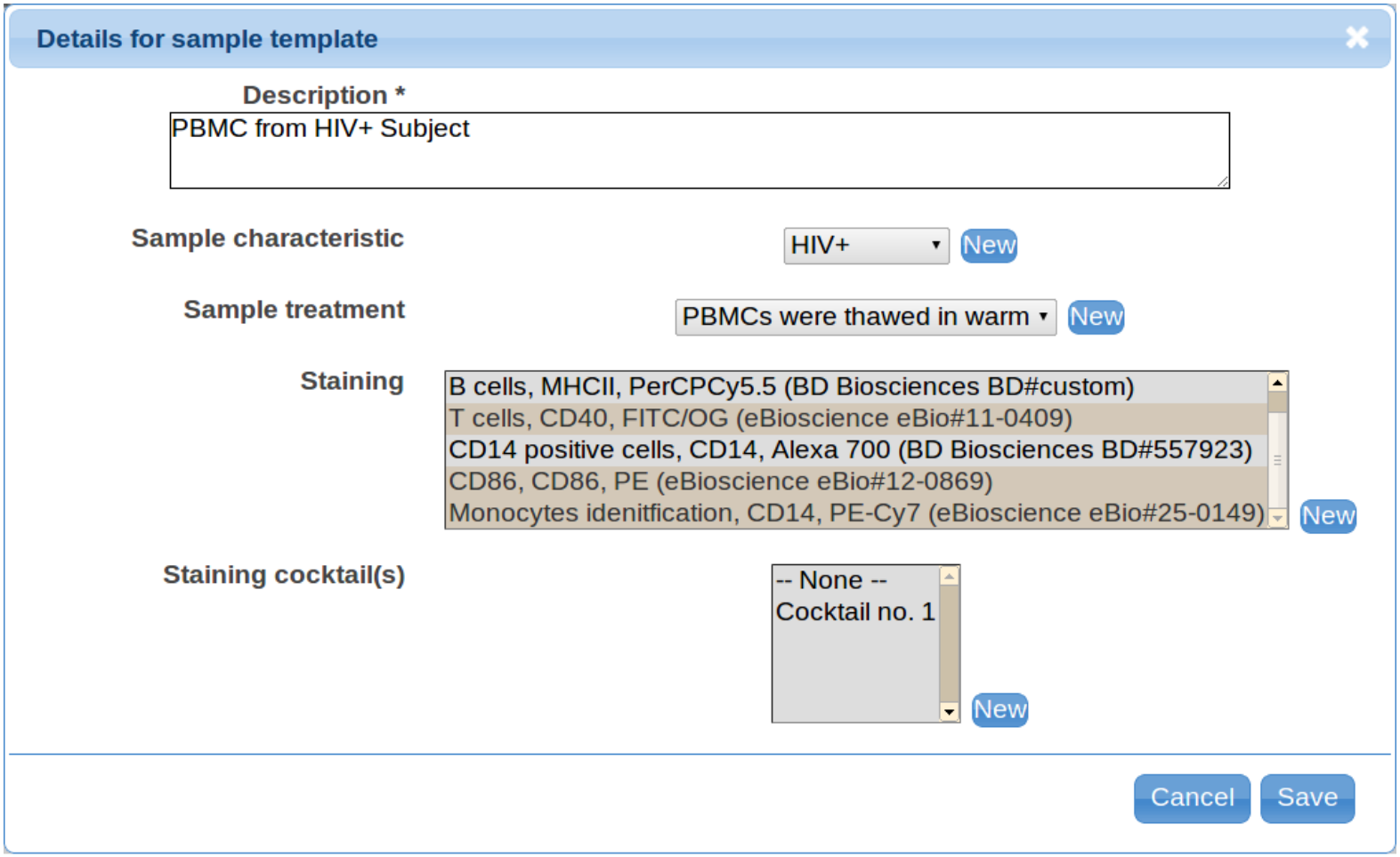
Prepare annotation data – create sample templates

- Double-click on a reagent to see details



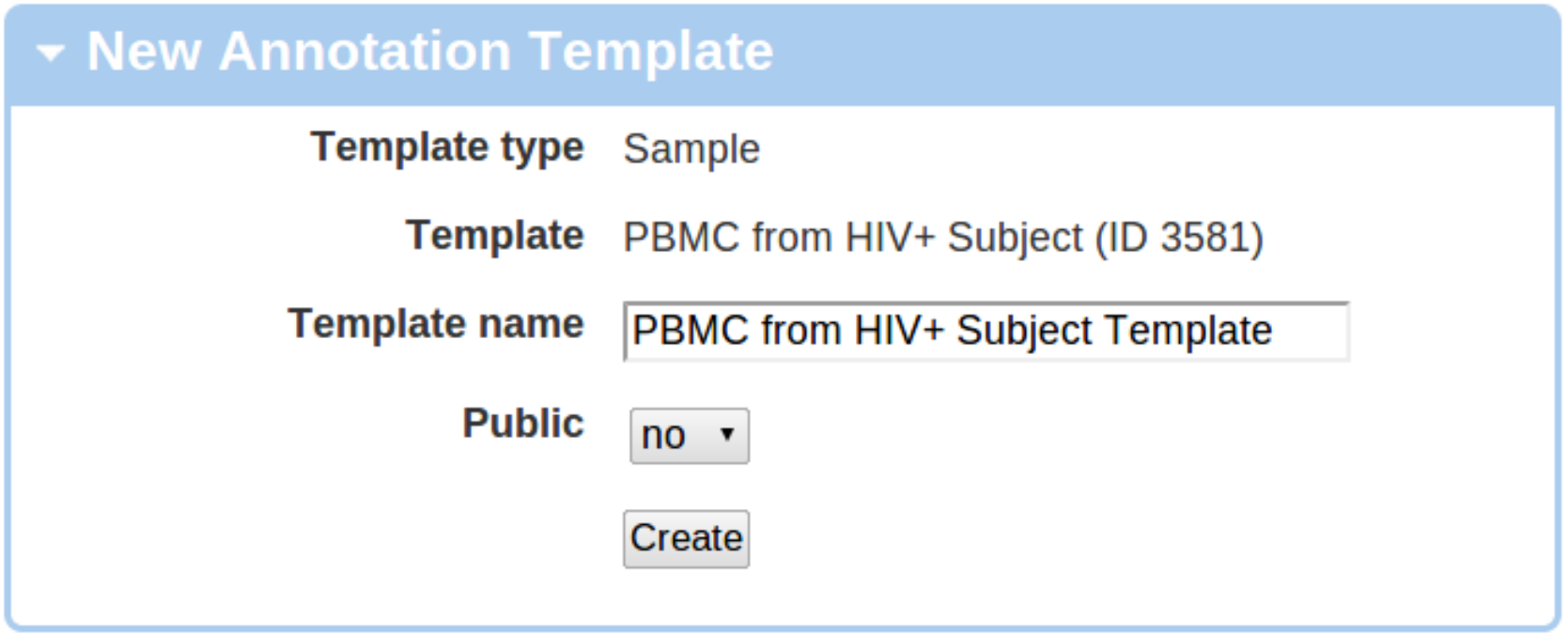
Prepare annotation data – create sample templates

- Select reagents (and/or cocktails) used
- Hold Ctrl (or Shift) to select multiple items



Prepare annotation data – create sample templates

- Finally, name and save your *Sample* template



Upload and annotation of your own dataset

Typical steps

1. Create a new experiment
2. Upload data (FCS files)
3. Prepare annotation templates
   - Or prepare spreadsheets with annotations
4. Annotate the experiment
   - Describe samples and sample sources
   - Provide experimental variables
   - Describe instrumentation settings
5. Provide analysis details
   - Either analyze data online and create illustrations
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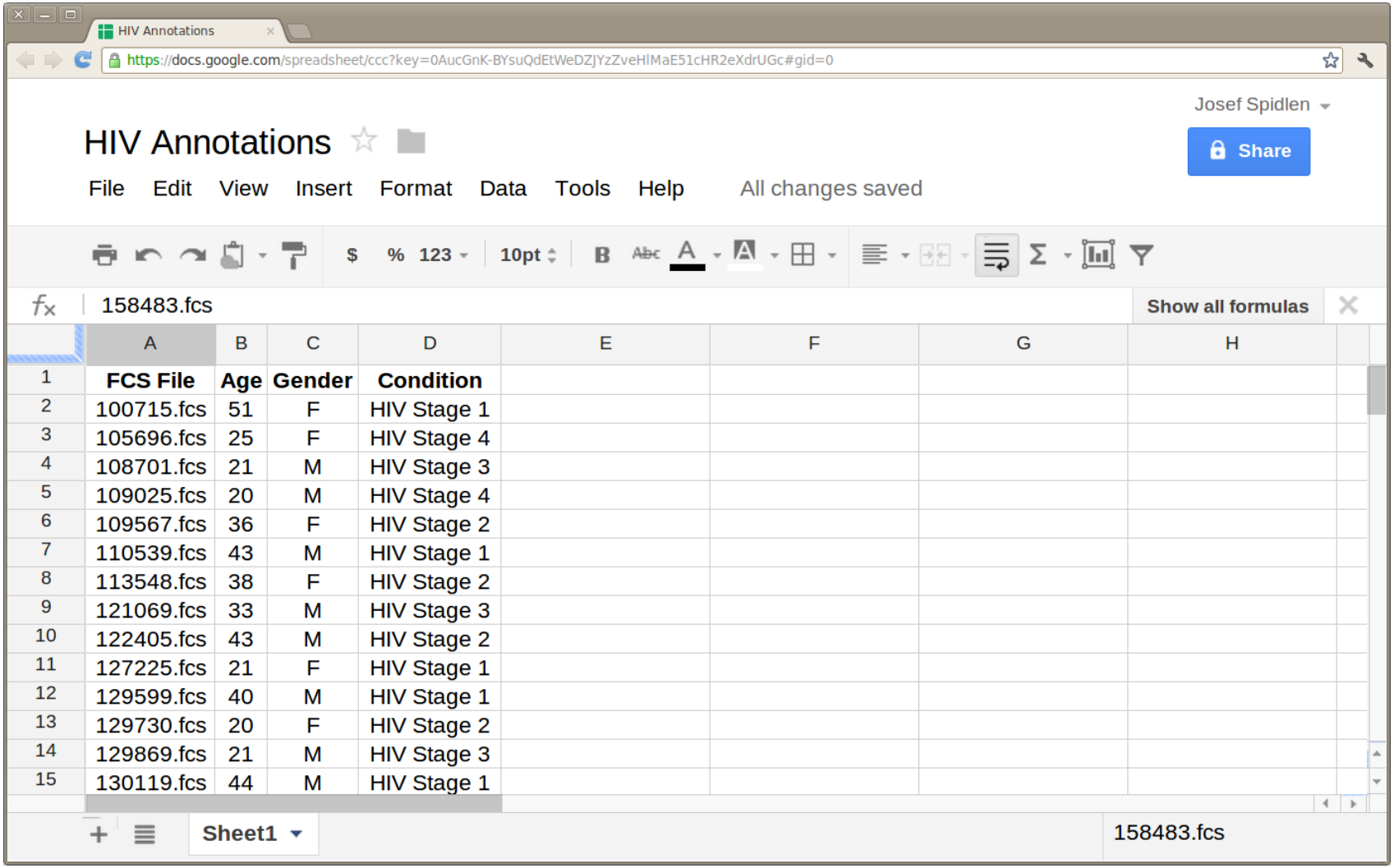
6. Review (and improve) your MIFlowCyt compliance

Prepare spreadsheets with annotations

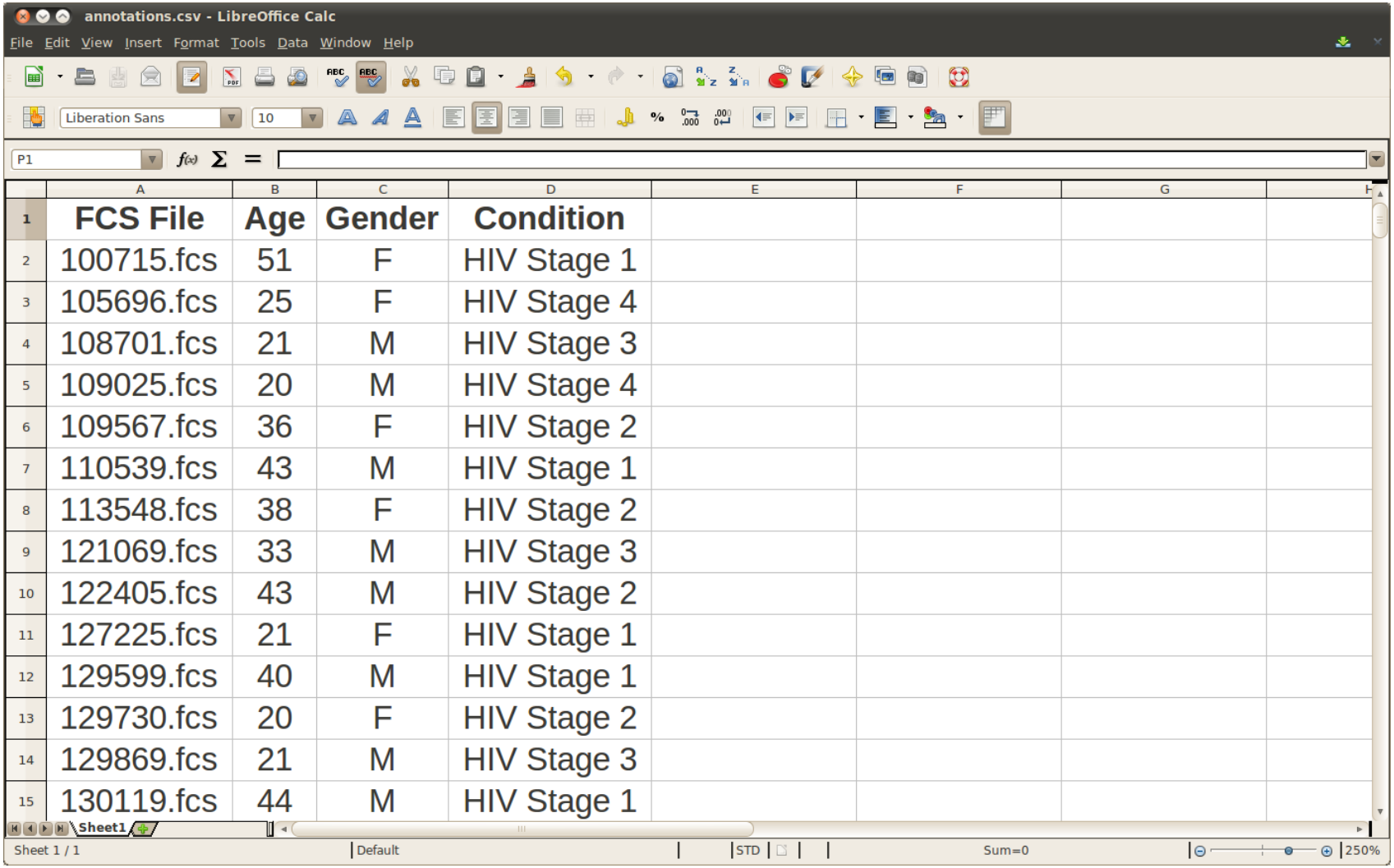
- Use your favorite spreadsheet editor
  - MS Excel, GoogleDoc Spreadsheet, OpenOffice Calc, etc.
- Name one column as **FCS File**; values should correspond to file names in your dataset
- Other "understandable" columns:
  - Samples: Sample Description, Sample Characteristic, Sample Treatment, Sample Source Description, Sample Source Treatment, Age, Age unit, Gender, Phenotype, Genotype, Location, Other Sample Source Information
  - Experiment Variables: Condition, Dose, Timepoint, Individual, Experimental variable sample type
  - Instrumentation Details: Instrument, Default Instrument Settings, Optical Filters Installation Dates, Other Flow Fluidics Information, Other Instrument Settings Information, Flow Cell Type

Use your favorite spreadsheet editor



	A	B	C	D	E	F	G	H
1	**FCS File**	**Age**	**Gender**	**Condition**				
2	100715.fcs	51	F	HIV Stage 1				
3	105696.fcs	25	F	HIV Stage 4				
4	108701.fcs	21	M	HIV Stage 3				
5	109025.fcs	20	M	HIV Stage 4				
6	109567.fcs	36	F	HIV Stage 2				
7	110539.fcs	43	M	HIV Stage 1				
8	113548.fcs	38	F	HIV Stage 2				
9	121069.fcs	33	M	HIV Stage 3				
10	122405.fcs	43	M	HIV Stage 2				
11	127225.fcs	21	F	HIV Stage 1				
12	129599.fcs	40	M	HIV Stage 1				
13	129730.fcs	20	F	HIV Stage 2				
14	129869.fcs	21	M	HIV Stage 3				
15	130119.fcs	44	M	HIV Stage 1				

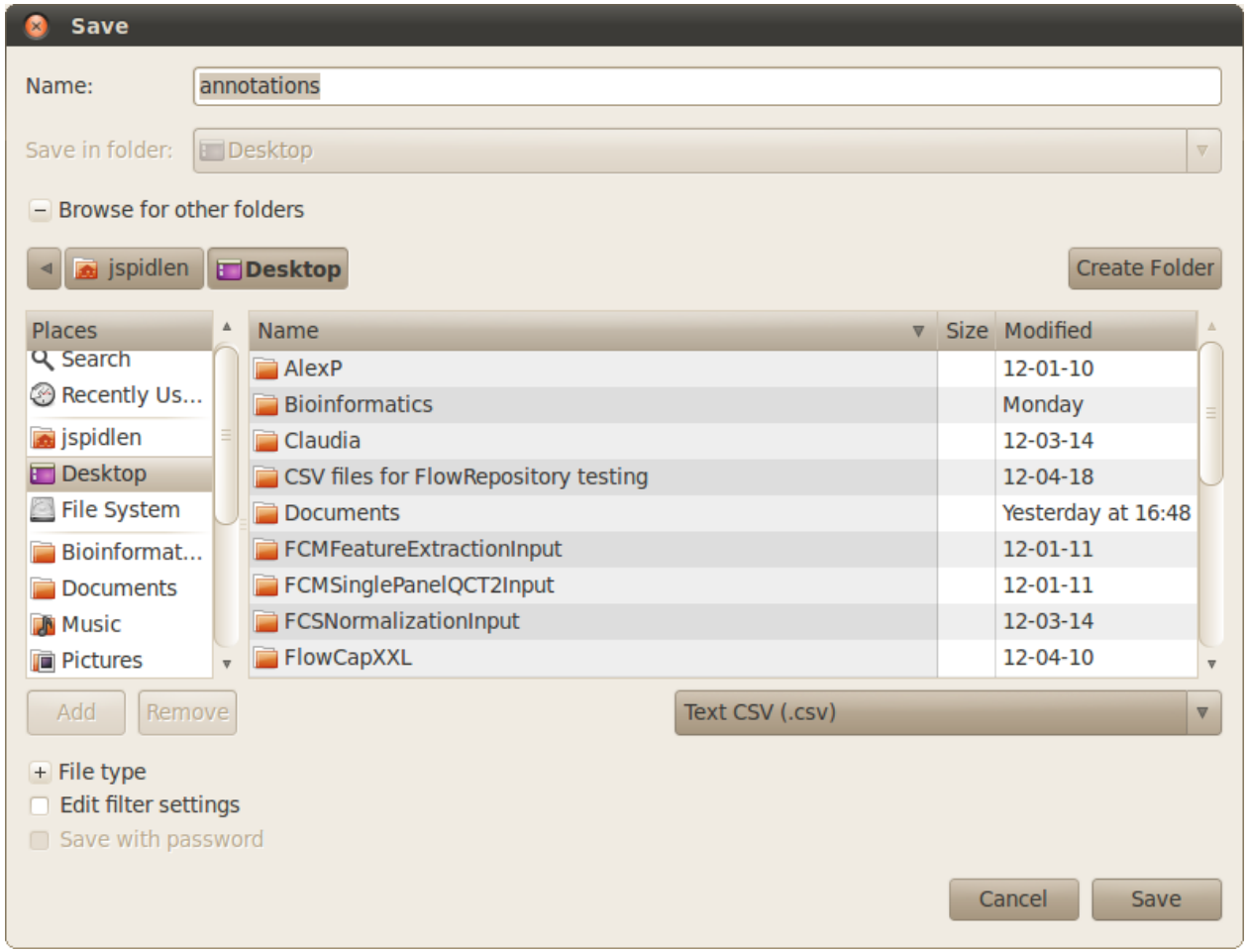
Use your favorite spreadsheet editor



	A	B	C	D
1	FCS File	Age	Gender	Condition
2	100715.fcs	51	F	HIV Stage 1
3	105696.fcs	25	F	HIV Stage 4
4	108701.fcs	21	M	HIV Stage 3
5	109025.fcs	20	M	HIV Stage 4
6	109567.fcs	36	F	HIV Stage 2
7	110539.fcs	43	M	HIV Stage 1
8	113548.fcs	38	F	HIV Stage 2
9	121069.fcs	33	M	HIV Stage 3
10	122405.fcs	43	M	HIV Stage 2
11	127225.fcs	21	F	HIV Stage 1
12	129599.fcs	40	M	HIV Stage 1
13	129730.fcs	20	F	HIV Stage 2
14	129869.fcs	21	M	HIV Stage 3
15	130119.fcs	44	M	HIV Stage 1

Save as CSV (Comma Separated Values)

- Look in the File menu for Save As, Download, or Export



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« Back to Inbox

My Working Illustration »

MIFlowCyt Annotation »

Actions

Experiment

Edit Experiment Details

Delete Experiment

FCS Files

Download FCS Files

Upload More FCS Files

De-identify FCS Files

Review Keywords in FCS files

Sharing Permissions

Full Access Users

Nima Aghaeepour [PR]

Josef Spidlen [x]

Ryan Brinkman [x]

Invite a new user

Share with a User (Full Access)

This experiment is currently **private.**

Share with Everyone

You can also **create a secret access code** to share with reviewers.

Share with Reviewers

Did you know?

You can request a one-on-one session to get started with your data by filling out a

Getting Started: Experiment Details

This Experiment Details Page contains information about the experiment listed above.

- Start describing samples
- Add flow cytometer information
- Review experiment variables
- Analyze your data on-line
- Review MIFlowCyt annotation
- Download FCS files

For more tips and guides please see:

- FlowRepository Quick start guide
- Documentation site for Cytobank and FlowRepository

Experiment Details

Illustrations

Attachments

FCS Files (466)

Download Files Upload More Files De-identify FCS Files Review Keywords in FCS files

File Name	Sample	Tube Name	Experiment Variables	Panel	Events	Size
100715.fcs details	100715.fcs describe sample	Tube_025		Panel 1	65016	4 MB
105696.fcs details	105696.fcs describe sample	Tube_009		Panel 1	455184	27.8 MB
108701.fcs details	108701.fcs describe sample	Tube_001		Panel 1	1000000	61 MB
109025.fcs details	109025.fcs describe sample	Tube_009		Panel 1	210186	12.8 MB
109567.fcs details	109567.fcs describe sample	Tube_017		Panel 1	160074	9.8 MB
110539.fcs details	110539.fcs describe sample	Tube_022		Panel 1	364212	22.2 MB
113548.fcs details	113548.fcs describe sample	Tube_003		Panel 1	177102	10.8 MB
121069.fcs details	121069.fcs describe sample	Tube_001		Panel 1	542538	33.1 MB
122405.fcs details	122405.fcs describe sample	Tube_010		Panel 1	476208	29.1 MB

Describing samples

100715.fcs Sample Information

Apply template: Create templates

Description *

Sample source New

Sample characteristic New

Sample treatment New

Staining
-- None --
B cells, MHCII, PerCPCy5.5 (BD Biosciences BD#custo
T cells, CD40, FITC/OG (eBioscience eBio#11-0409)
CD14 positive cells, CD14, Alexa 700 (BD Biosciences
CD86, CD86, PE (eBioscience eBio#12-0869)
New

Staining cocktail(s)
-- None --
Cocktail no
New

Save and proceed to next FCS file | Apply to all undescribed FCS files | Apply to undescribed FCS files in Panel 1

Describing samples – apply a template

100715.fcs Sample Information

Apply template: PBMC from HIV+ Subject Template ▾ Create templates

Description * PBMC from HIV+ Subject

Sample source ▾ New

Sample characteristic HIV+ ▾ New

Sample treatment PBMCs were thawed in warm .. ▾ New

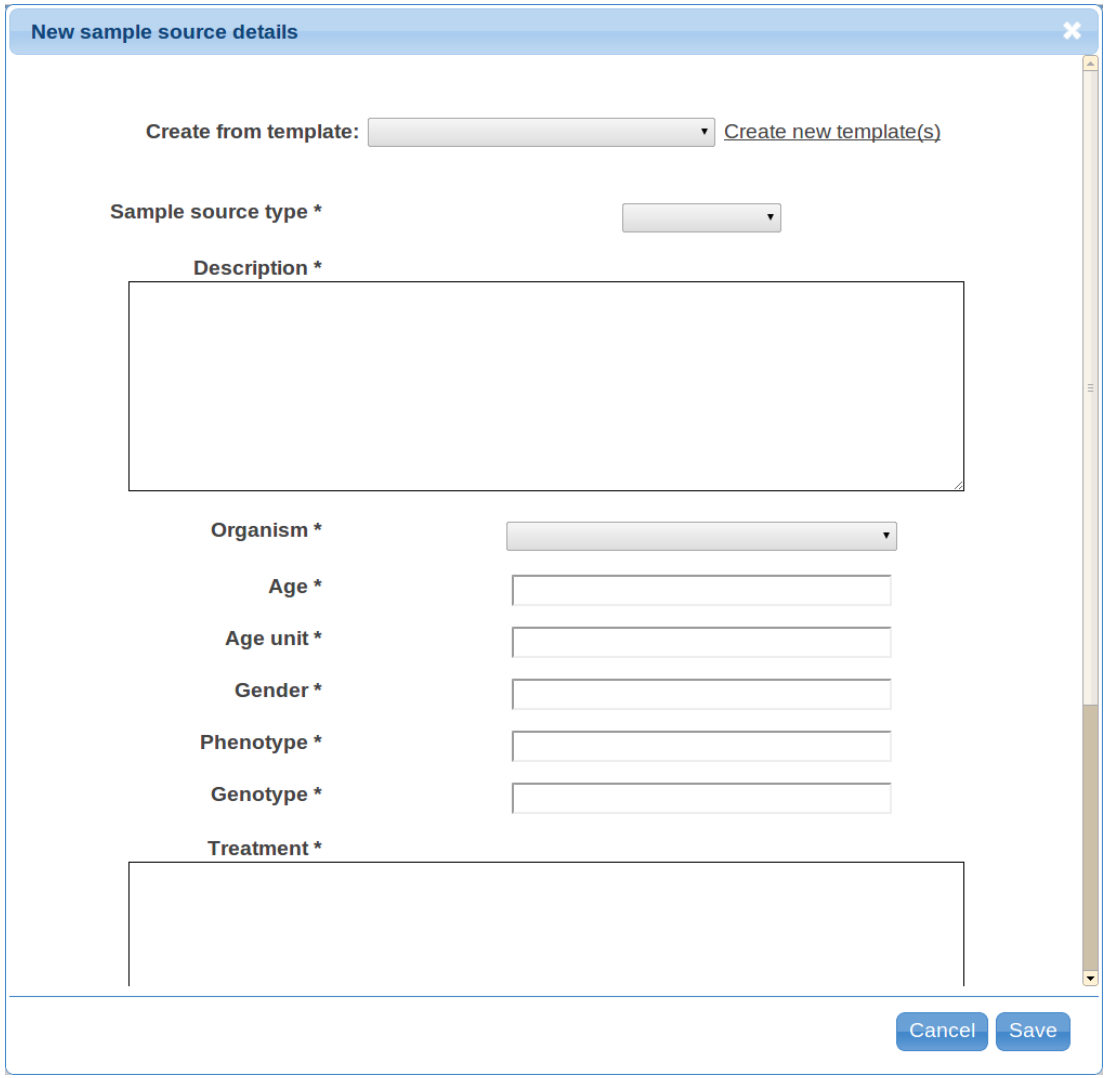
Staining
-- None --
B cells, MHCII, PerCPCy5.5 (BD Biosciences BD#custo
T cells, CD40, FITC/OG (eBioscience eBio#11-0409)
CD14 positive cells, CD14, Alexa 700 (BD Biosciences
CD86, CD86, PE (eBioscience eBio#12-0869)
New

Staining cocktail(s)
-- None --
Cocktail no
New

Save and proceed to next FCS file | Apply to all undescribed FCS files | Apply to undescribed FCS files in Panel 1

Describing samples – create a sample source

- Use templates again
- Adjust accordingly for each sample
- Or just leave it (we can fix it later using spread-sheets)



Describing samples – create a sample source

- Use templates again
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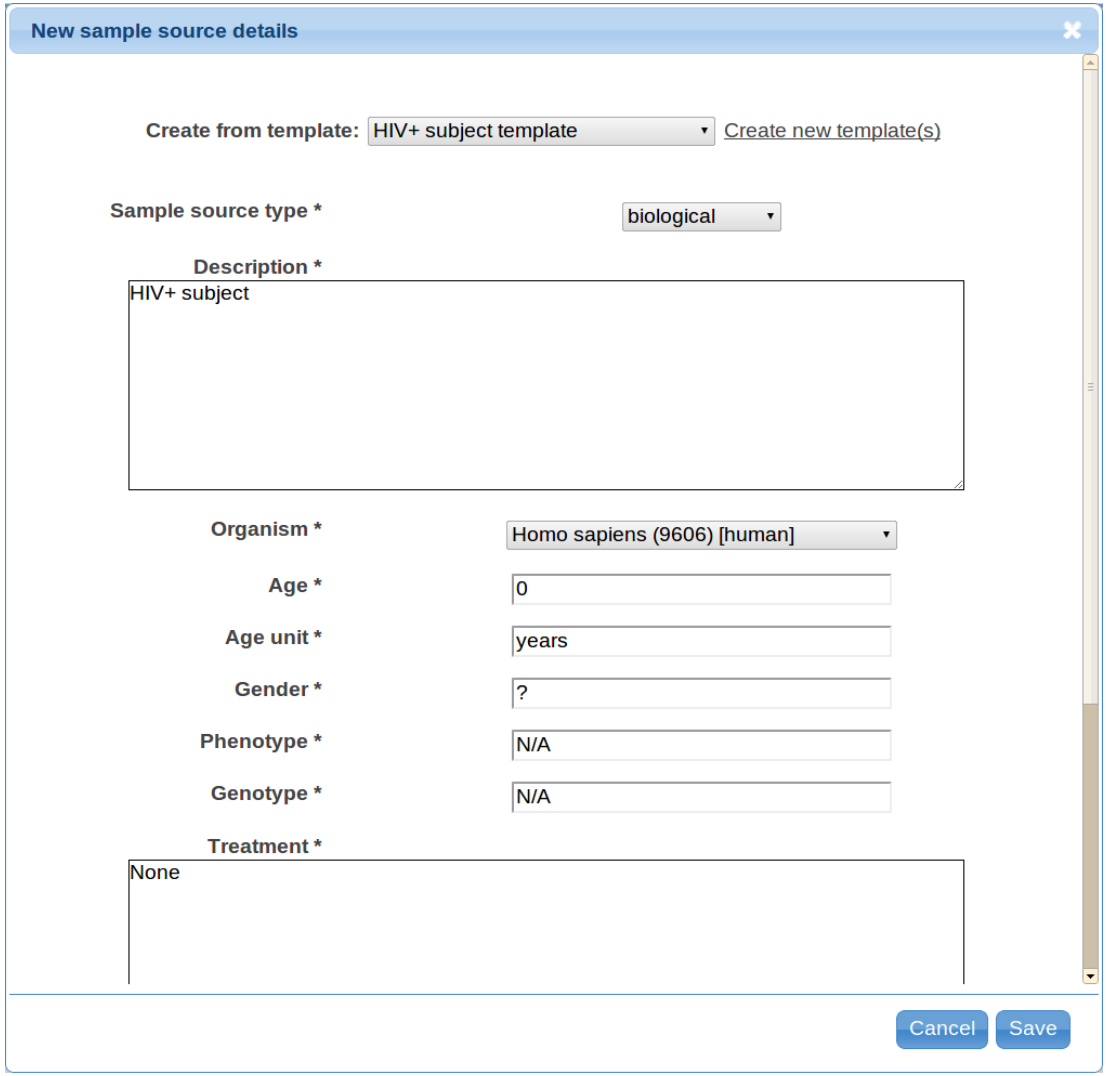
- Or just leave it (we can fix it later using spread-sheets)



Describing samples – 3 options to save

100715.fcs Sample Information

Apply template: PBMC from HIV+ Subject Template ▾ Create templates

Description * PBMC from HIV+ Subject

Sample source HIV+ subject ▾ New

Sample characteristic HIV+ ▾ New

Sample treatment PBMCs were thawed in warm .. ▾ New

Staining
-- None --
B cells, MHCII, PerCPCy5.5 (BD Biosciences BD#custo
T cells, CD40, FITC/OG (eBioscience eBio#11-0409)
CD14 positive cells, CD14, Alexa 700 (BD Biosciences
CD86, CD86, PE (eBioscience eBio#12-0869)
New

Staining cocktail(s)
-- None --
Cocktail no
New

Save and proceed to next FCS file | Apply to all undescribed FCS files | Apply to undescribed FCS files in Panel 1

Describing samples – 3 options to save

100715.fcs Sample Information

Apply template: PBMC from HIV+ Subject Template ▾ Create templates

Description * PBMC from HIV+ Subject

Sample source HIV+ subject ▾ New

Sample characteristic HIV+ ▾ New

Sample treatment PBMCs were thawed in warm .. ▾ New

Staining
-- None --
B cells, MHCII, PerCPCy5.5 (BD Biosciences BD#custo
T cells, CD40, FITC/OG (eBioscience eBio#11-0409)
CD14 positive cells, CD14, Alexa 700 (BD Biosciences
CD86, CD86, PE (eBioscience eBio#12-0869)
New

Staining cocktail(s)
-- None --
Cocktail no
New

Save and proceed to next FCS file | Apply to all undescribed FCS files | Apply to undescribed FCS files in Panel 1

Describing samples – 3 options to save

100715.fcs Sample Information

Apply template: PBMC from HIV+ Subject Template ▾ Create templates

Description * PBMC from HIV+ Subject

Sample source HIV+ subject ▾ New

Sample characteristic HIV+ ▾ New

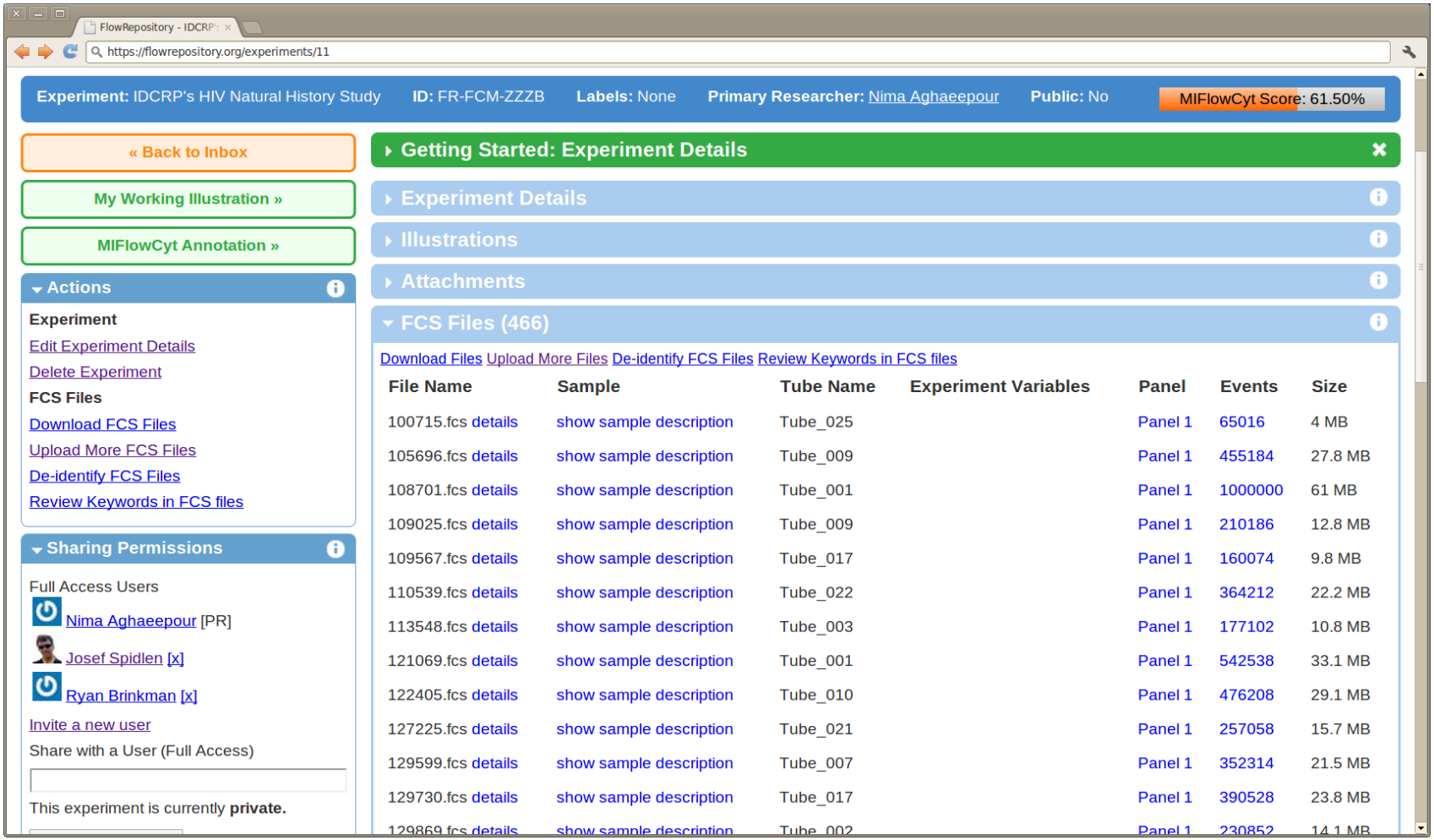
Sample treatment PBMCs were thawed in warm .. ▾ New

Staining
-- None --
B cells, MHCII, PerCPCy5.5 (BD Biosciences BD#custo
T cells, CD40, FITC/OG (eBioscience eBio#11-0409)
CD14 positive cells, CD14, Alexa 700 (BD Biosciences
CD86, CD86, PE (eBioscience eBio#12-0869)
New

Staining cocktail(s)
-- None --
Cocktail no
New

Save and proceed to next FCS file | Apply to all undescribed FCS files | Apply to undescribed FCS files in Panel 1

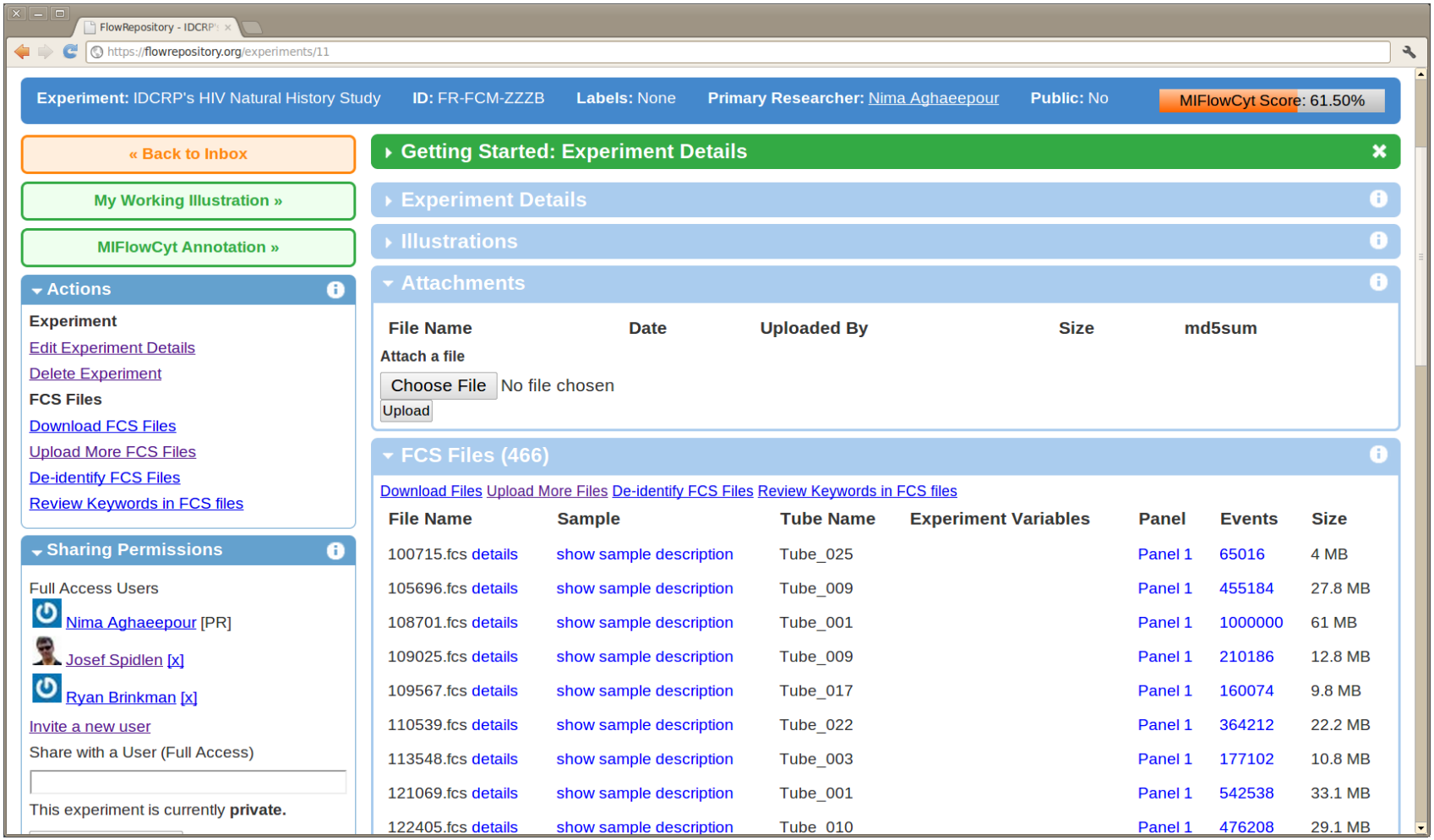
Samples and sample sources are now described



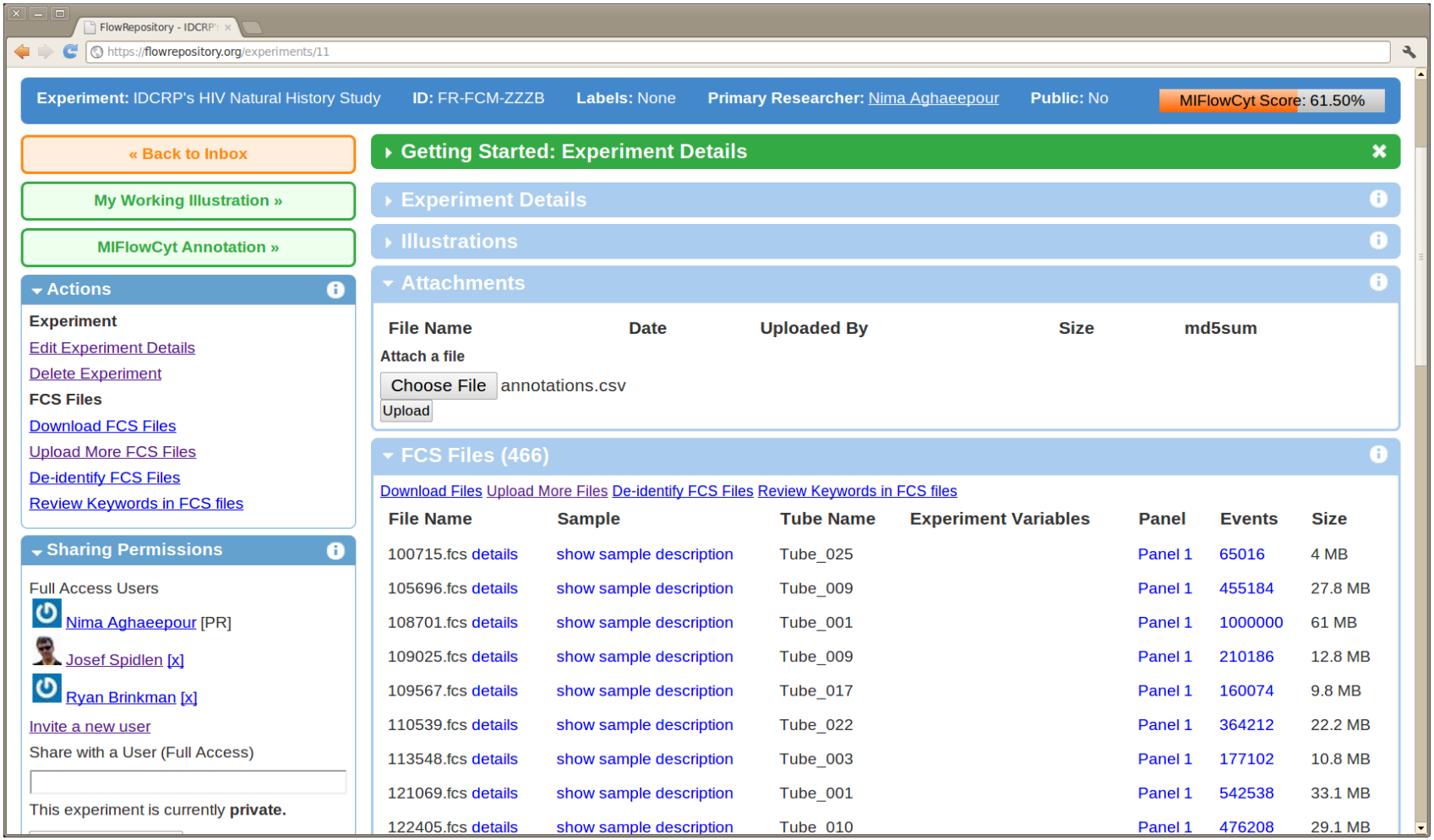
But not everything is correct!

- Our *Sample source organisms* vary in age and gender
- We left this out from our template
- Time to fix this
  - We can now use the spreadsheet created earlier

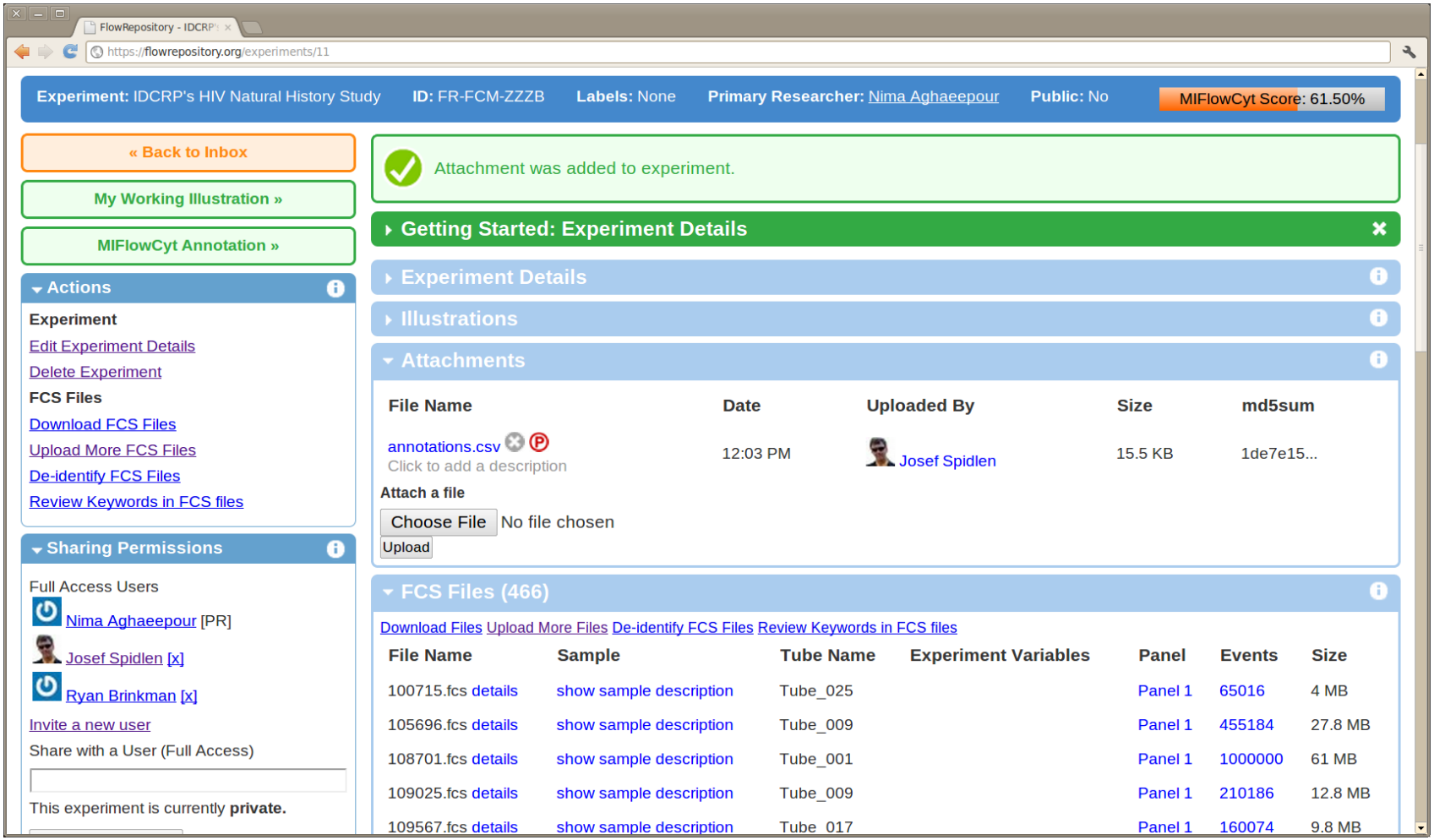
Upload the spreadsheet as attachment



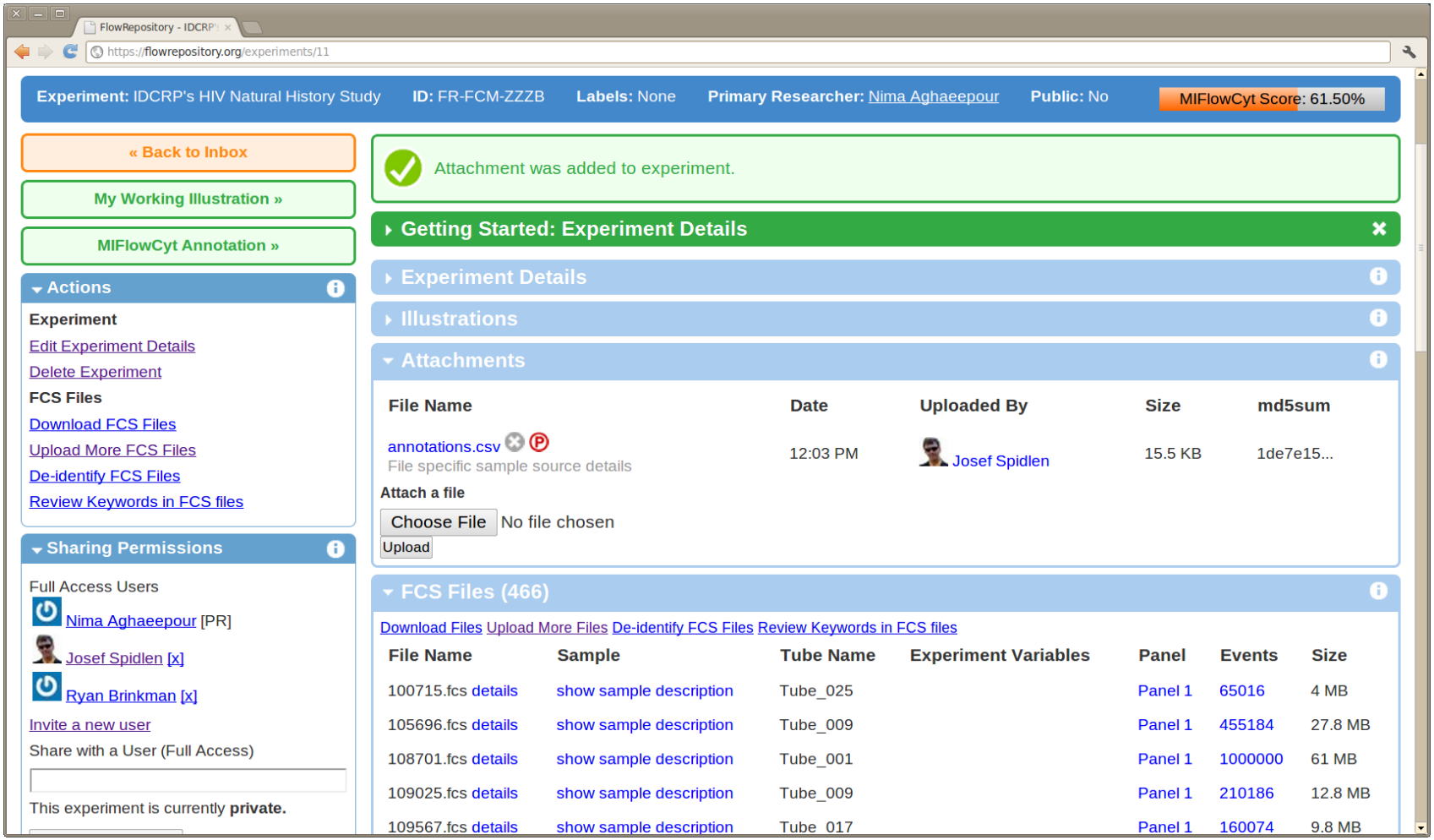
Upload the spreadsheet as attachment



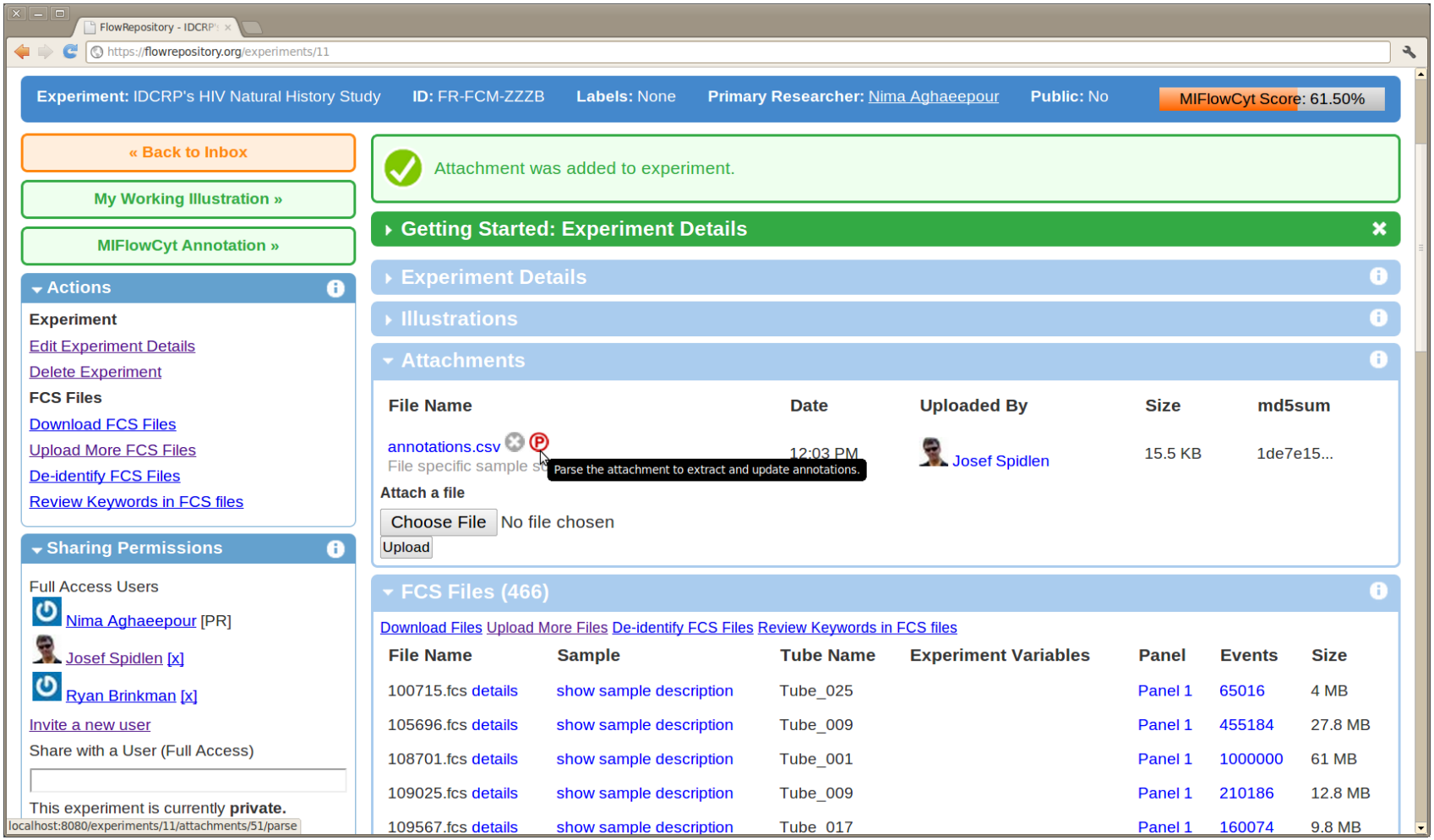
Upload the spreadsheet as attachment



Describe the attachment (optional)



Parse the attachment – click on (P)



Information extracted from attachment

- Review the result

Note: We also provided one experimental variable (the condition)

The following information extracted from attachment annotations.csv

FCS file	age	gender	condition
100715.fcs	51	F	HIV Stage 1
105696.fcs	25	F	HIV Stage 4
108701.fcs	21	M	HIV Stage 3
109025.fcs	20	M	HIV Stage 4
109567.fcs	36	F	HIV Stage 2
110539.fcs	43	M	HIV Stage 1
113548.fcs	38	F	HIV Stage 2
121069.fcs	33	M	HIV Stage 3
122405.fcs	43	M	HIV Stage 2
127225.fcs	21	F	HIV Stage 1
129599.fcs	40	M	HIV Stage 1
129730.fcs	20	F	HIV Stage 2
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130119.fcs	44	M	HIV Stage 1
132447.fcs	17	F	HIV Stage 1

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6. Review (and improve) your MIFlowCyt compliance

Provide experimental variables

- Follow Review experiment variables in the Getting Started panel
- Or navigate to your Working Illustration

Getting Started: Experiment Details

This Experiment Details Page contains information about the experiment listed above.

- Start describing samples
- Add flow cytometer information
- Review experiment variables
- Analyze your data on-line
- Review MIFlowCyt annotation
- Download FCS files

For more tips and guides please see:

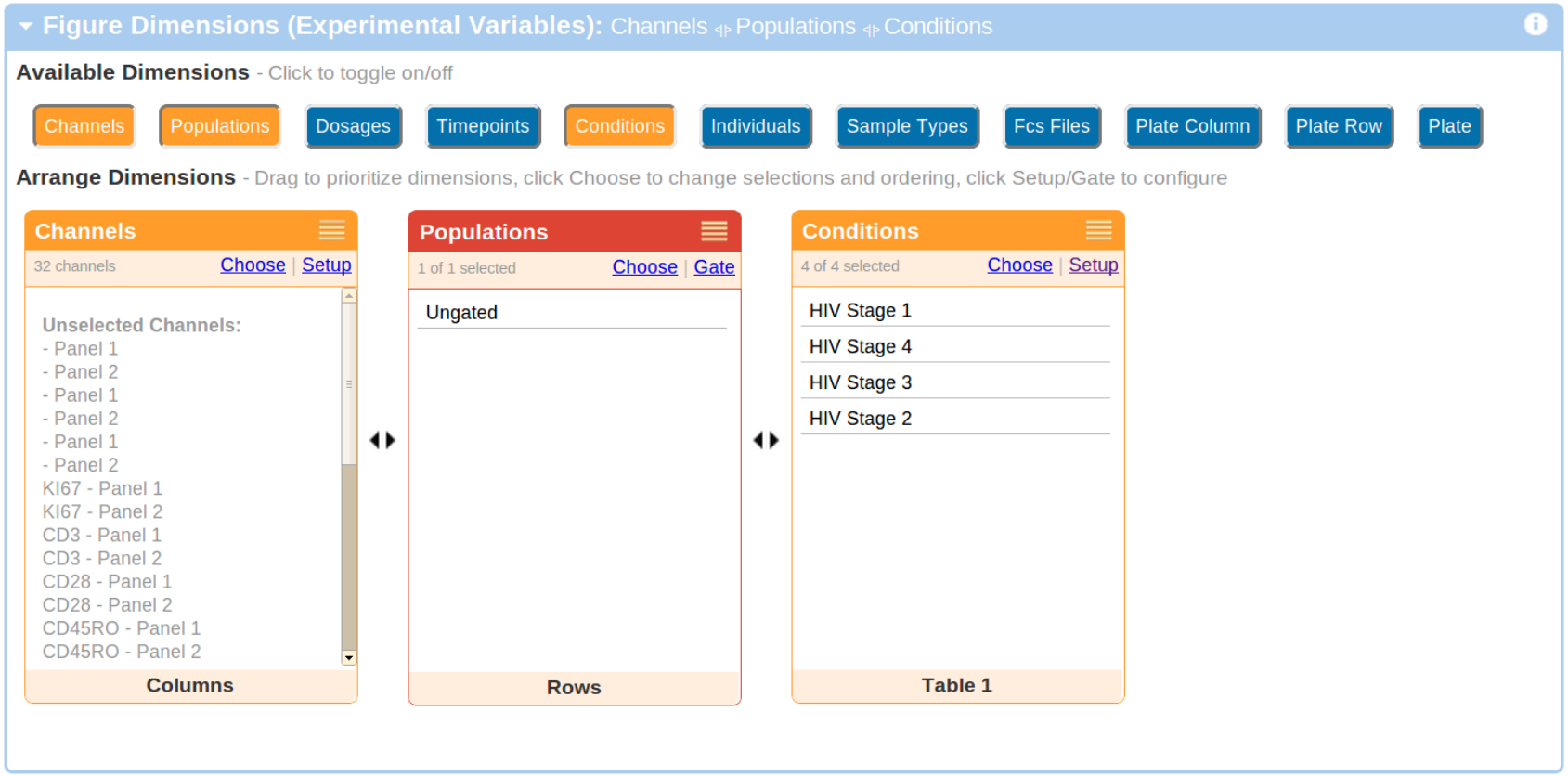
- FlowRepository Quick start guide
- Documentation site for Cytobank and FlowRepository

Illustrations

Name	Active Dimensions			Author	Created	Updated
Josef's Working Illustration	Channels (0) x Populations (1)	Print View	PDF	Josef Spidlen	May 2012	May 2012

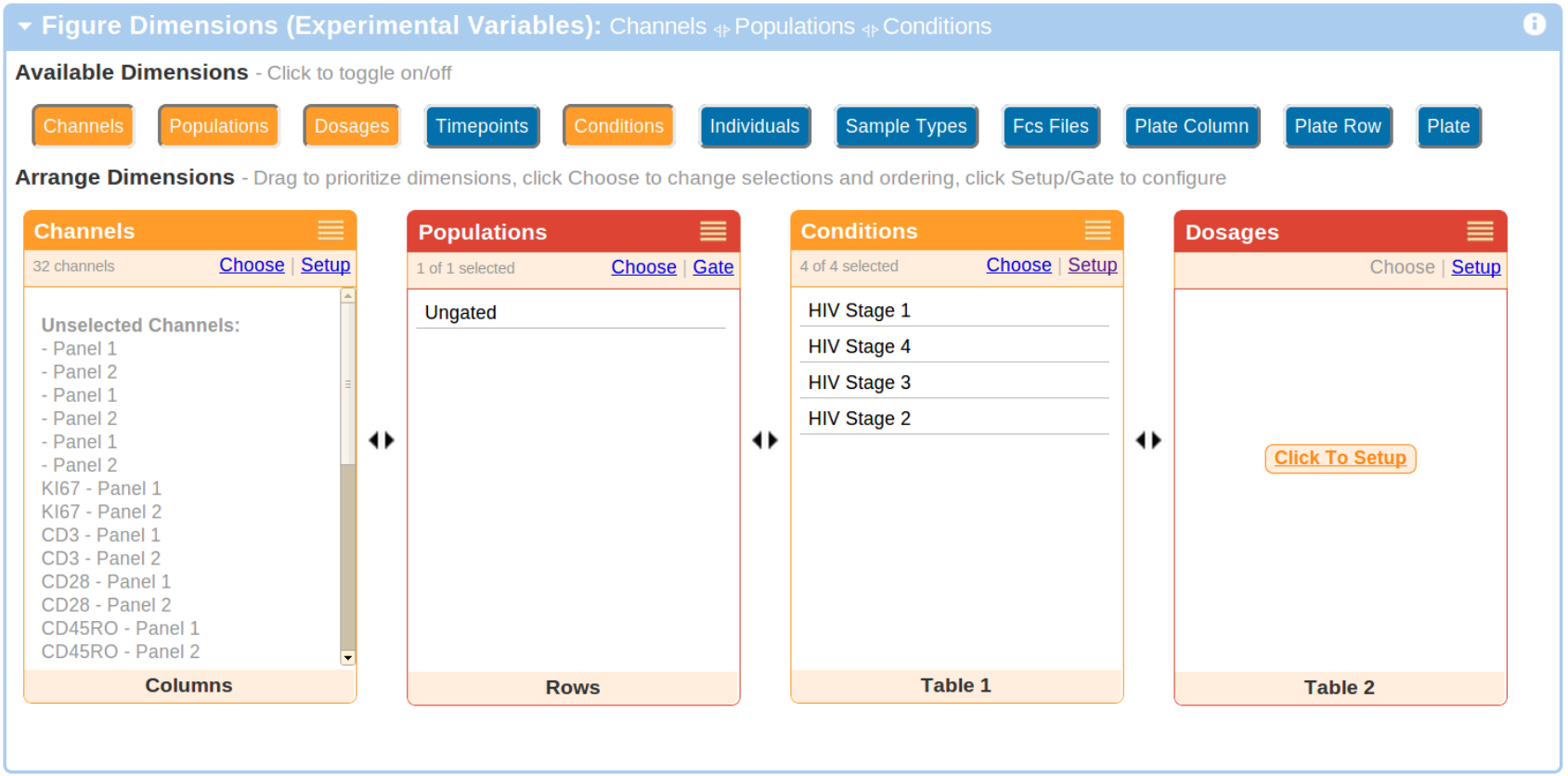
Reset Working Illustration

Provide experimental variables



- Example: patients treated by various dosages of Lexiva^{TM}

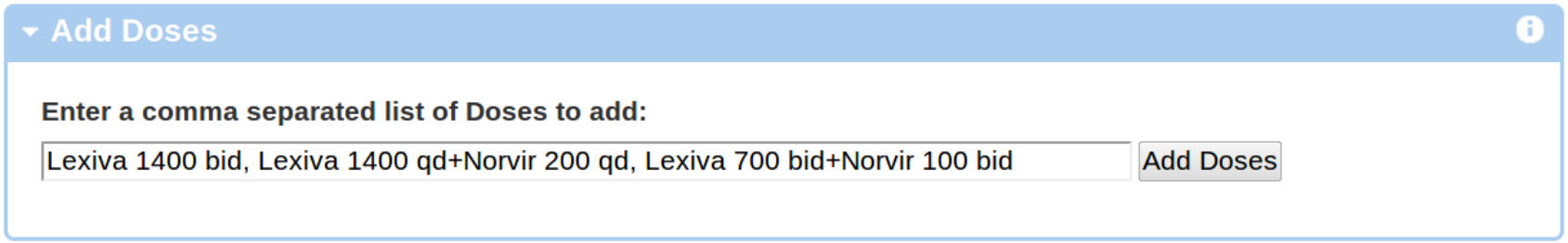
Provide experimental variables



- Example: patients treated by various dosages of Lexiva^{TM}
- Click on Dosages, than Setup

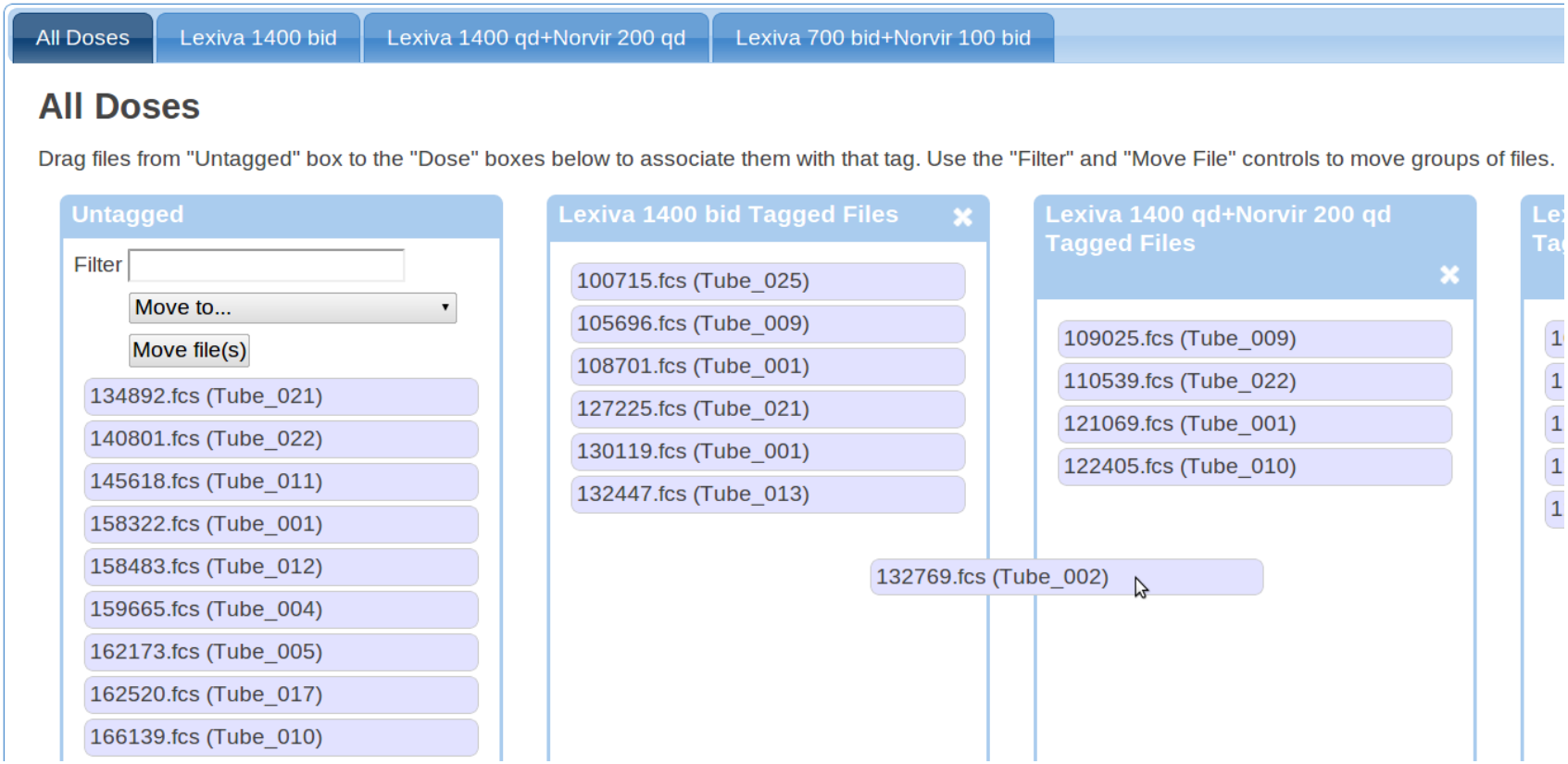
List doses

- Provide a comma-separated list of all doses



Assign FCS files to the right doses

- Drag & Drop files into the appropriate boxes
- Or use the *Filter* with *Move to*



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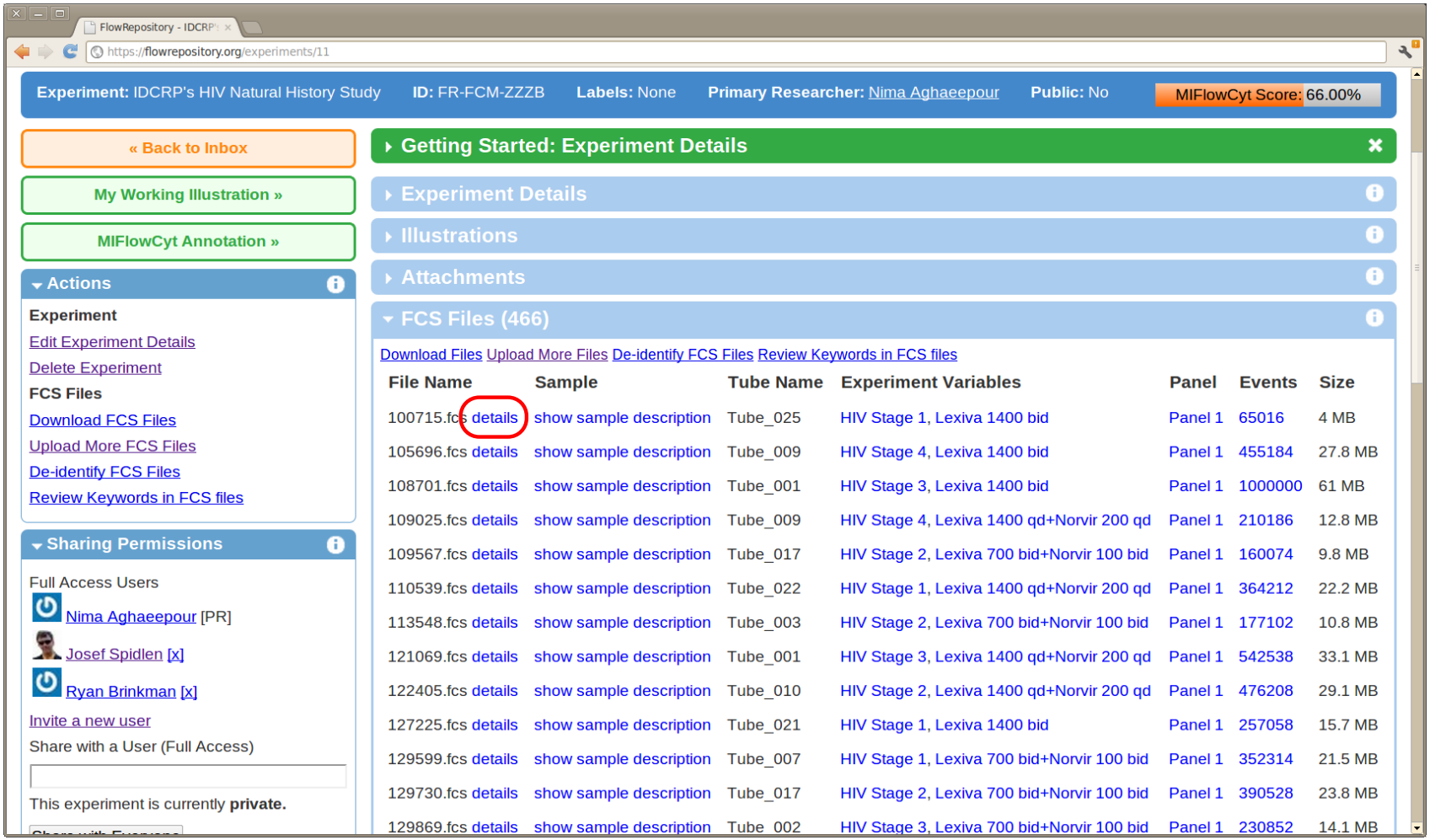
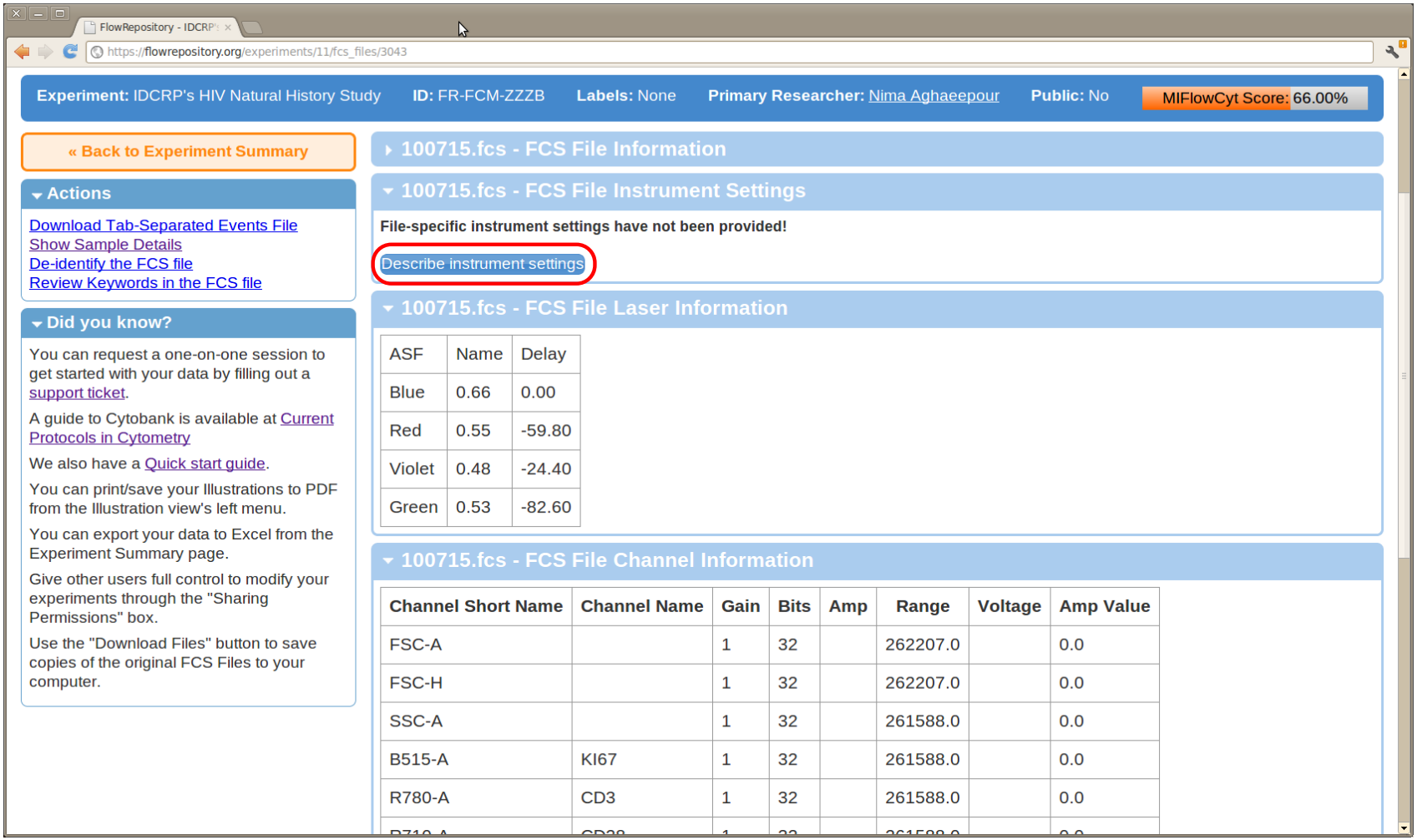
Instrumentation description

- Navigate to the details of an FCS file



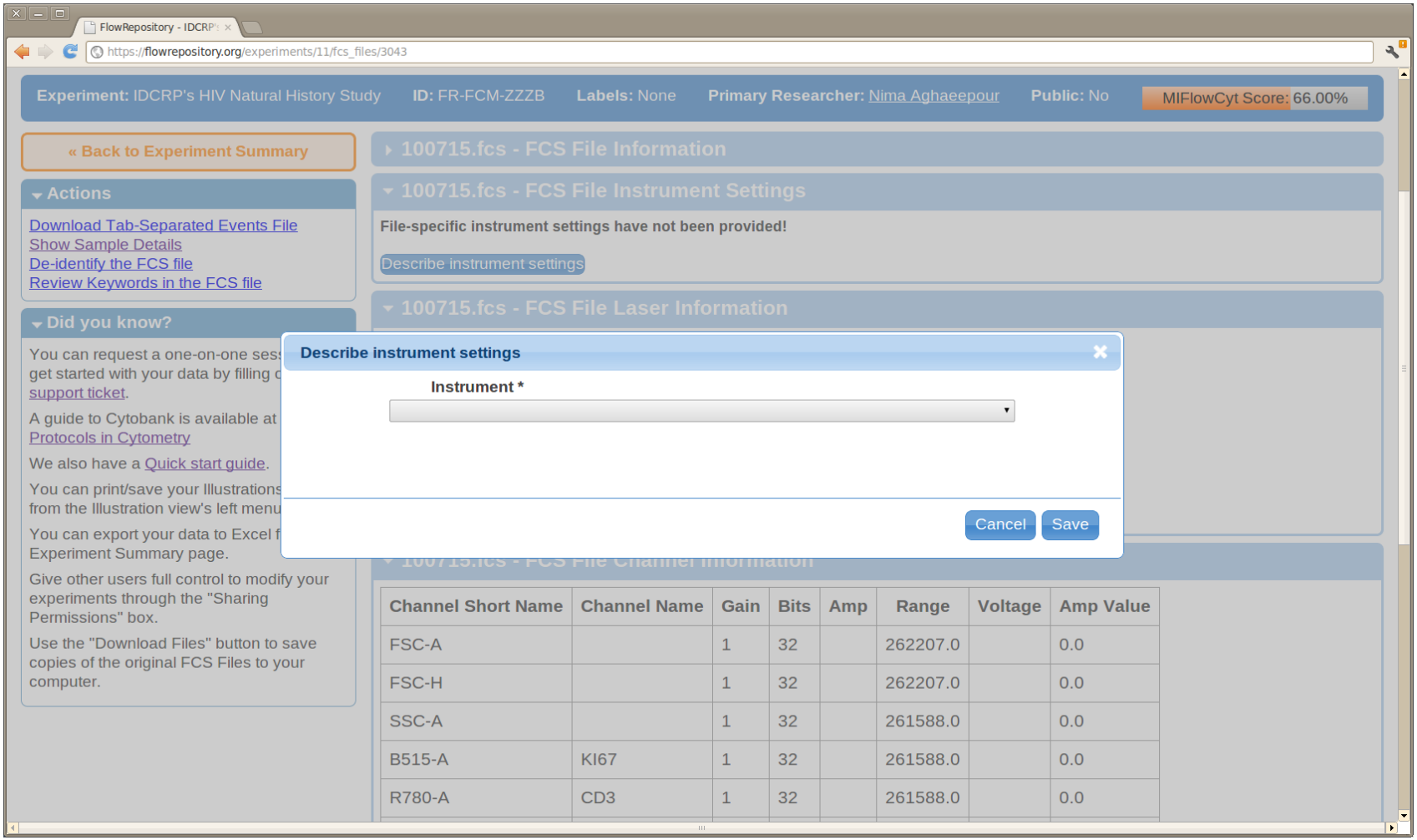
Instrumentation description

- Press the *Describe instrument settings* button



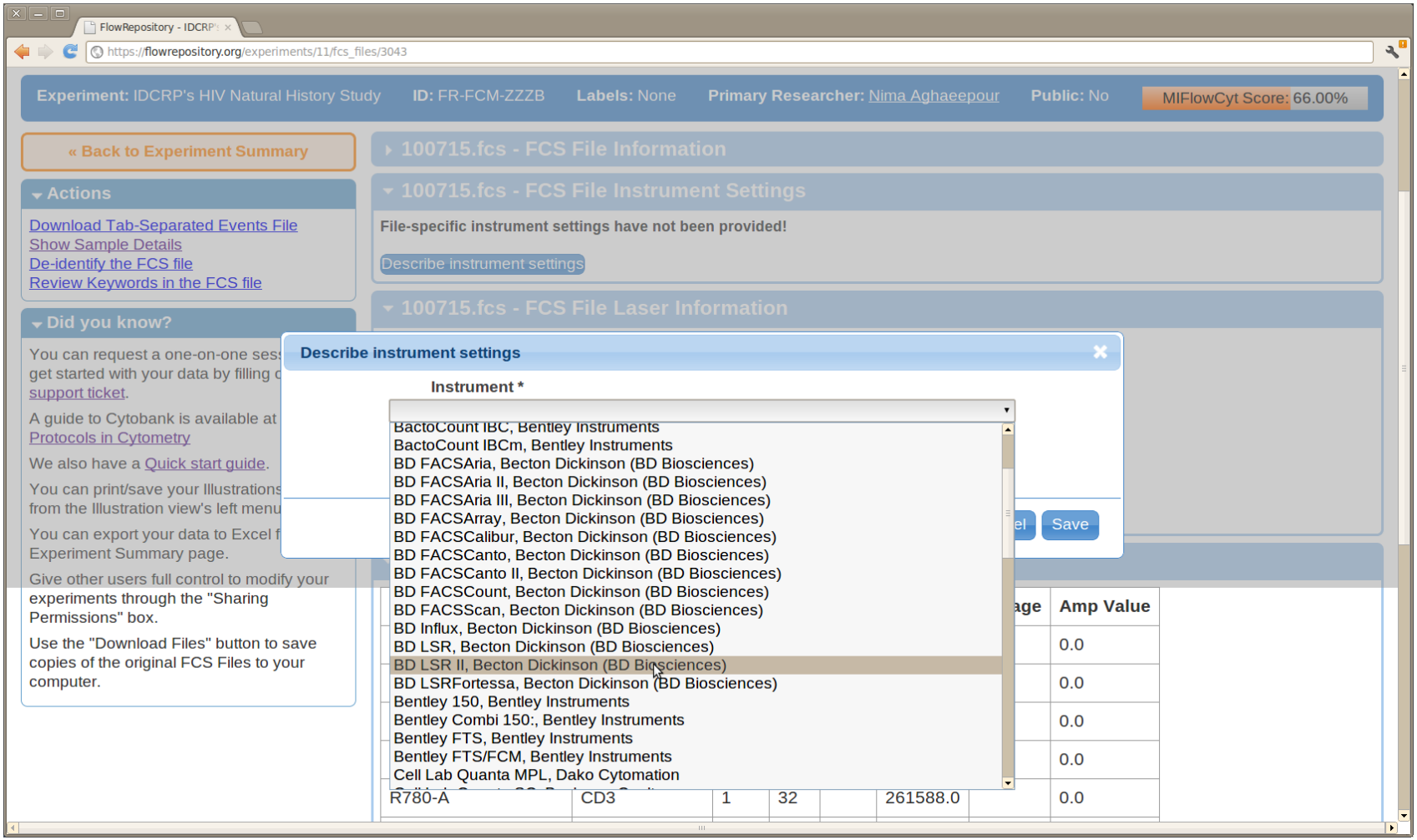
Instrumentation description

- Select the make and model of the instrument used



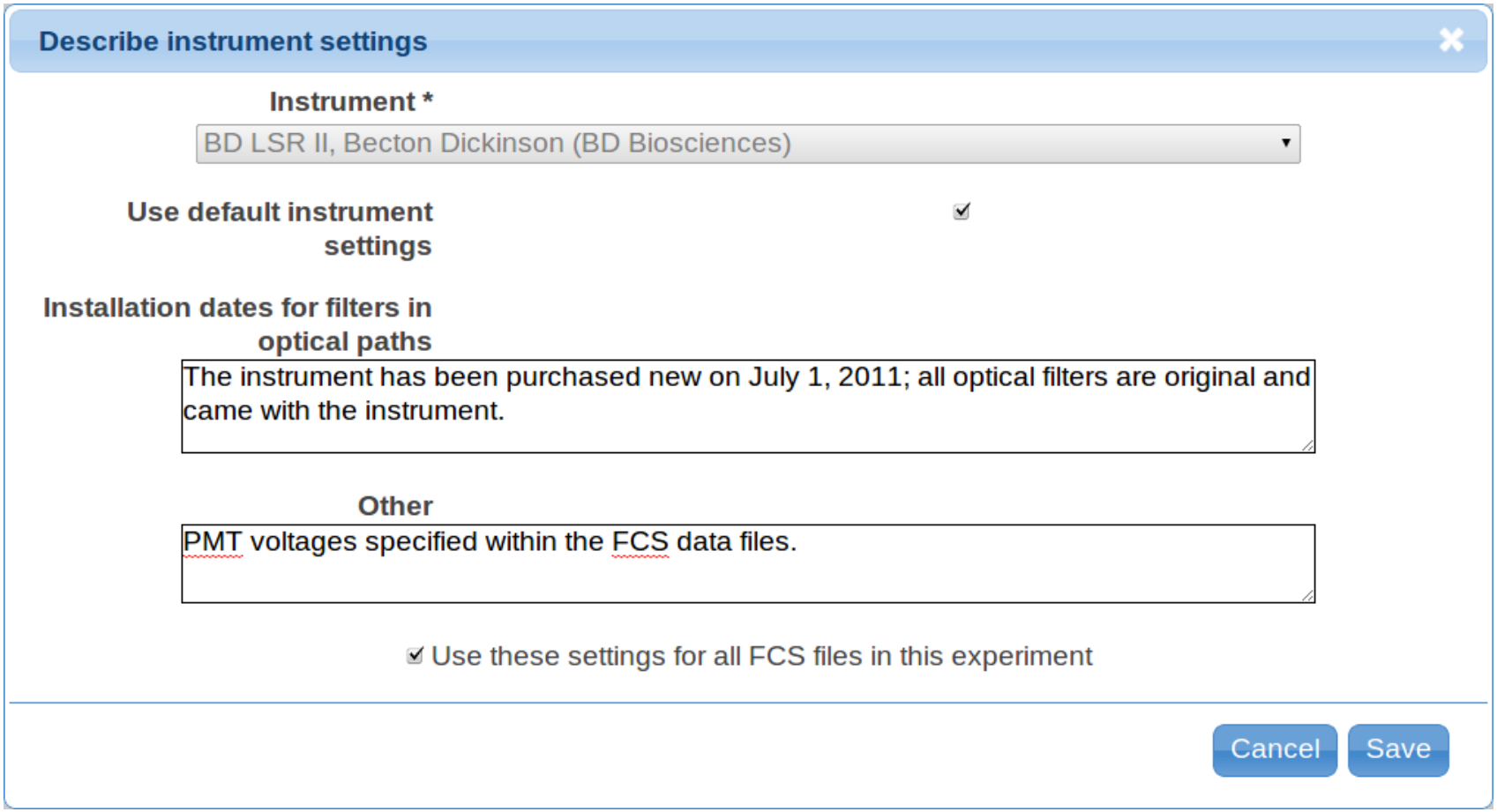
Instrumentation description

- New instruments may be added in the annotation data section



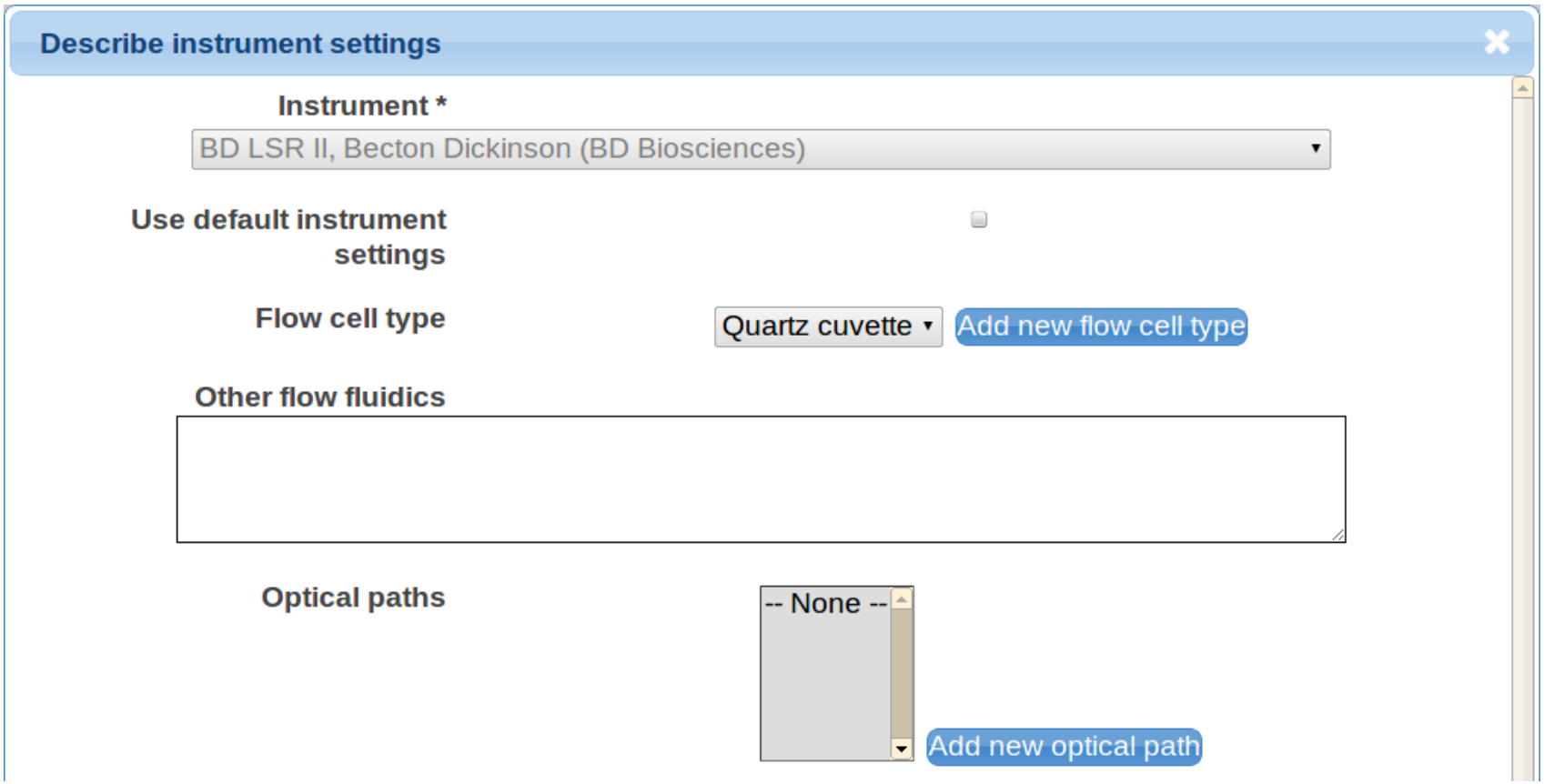
Instrumentation description

- **Simple case:** Same instrument with default settings for all FCS files

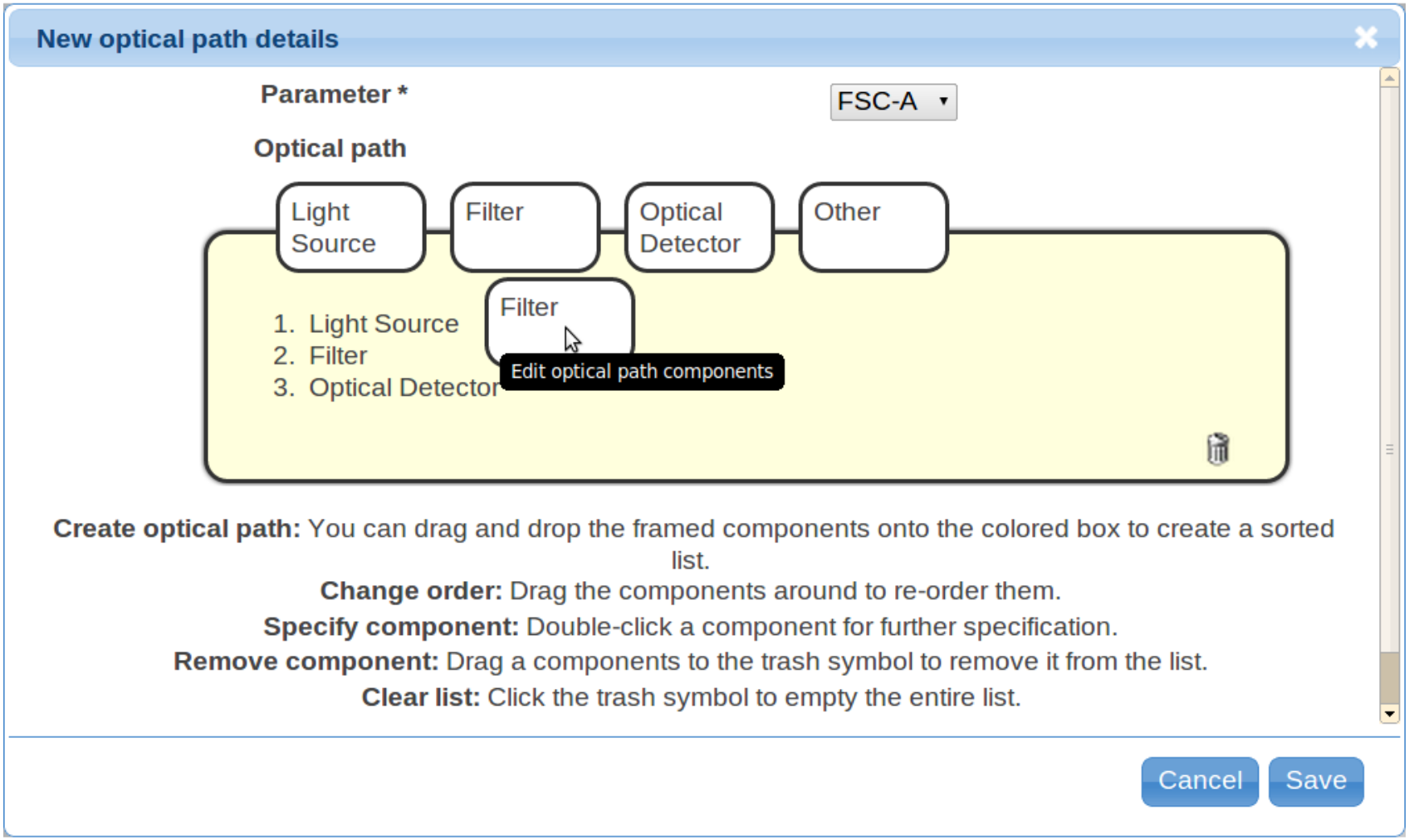


Instrumentation description

- **Advanced case:** Describe all details
  - Required by MIFlowCyt for customized instruments only

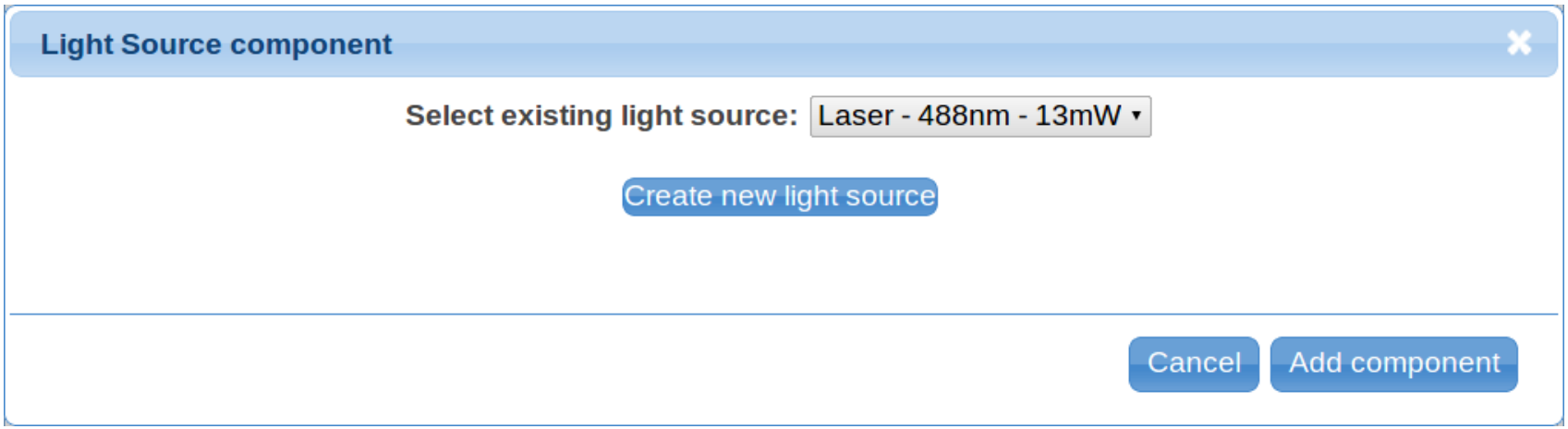


Instrumentation description



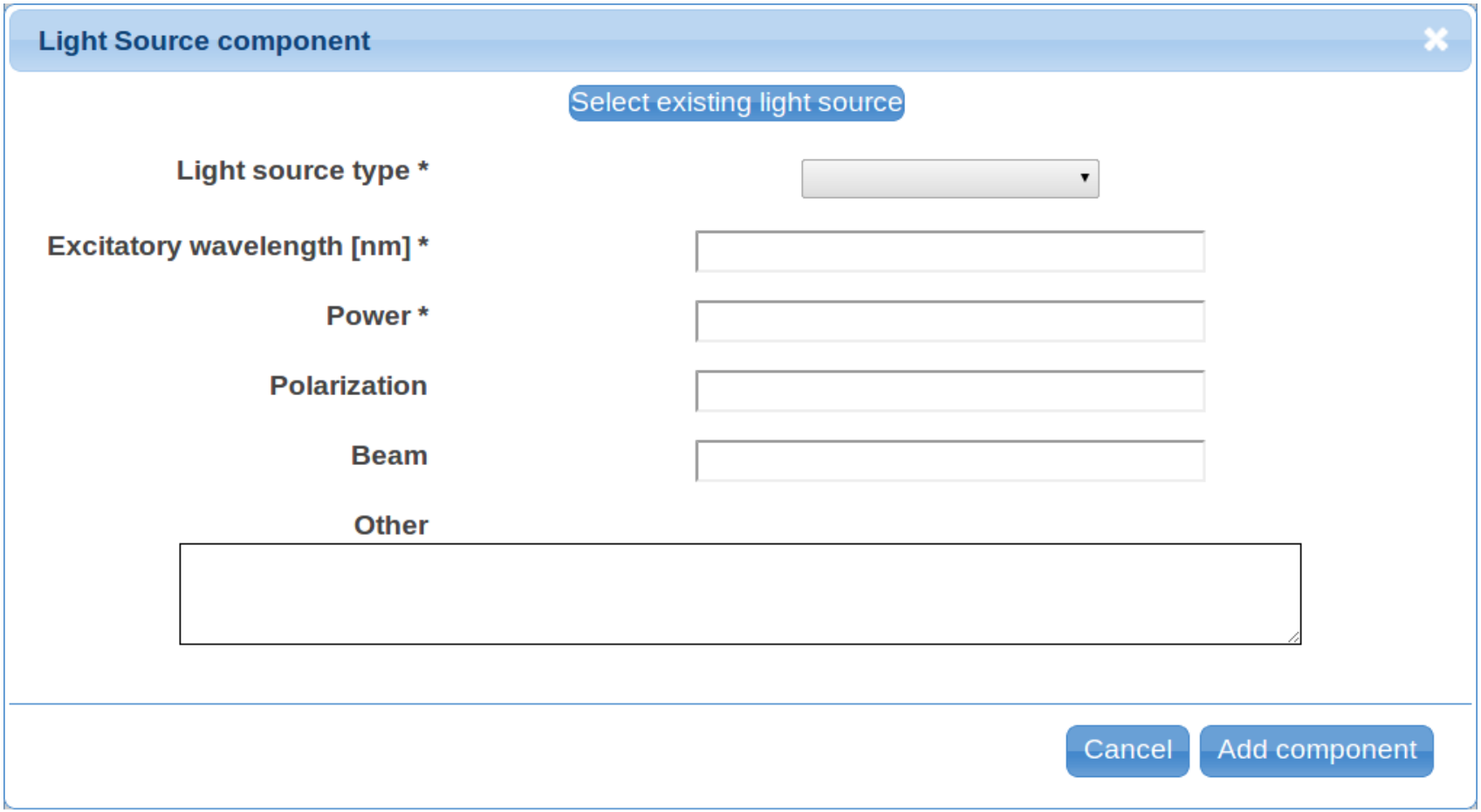
Instrumentation description

- Double click on each of component
- Either select an existing component or create a new description with all the details as required by MIFlowCyt



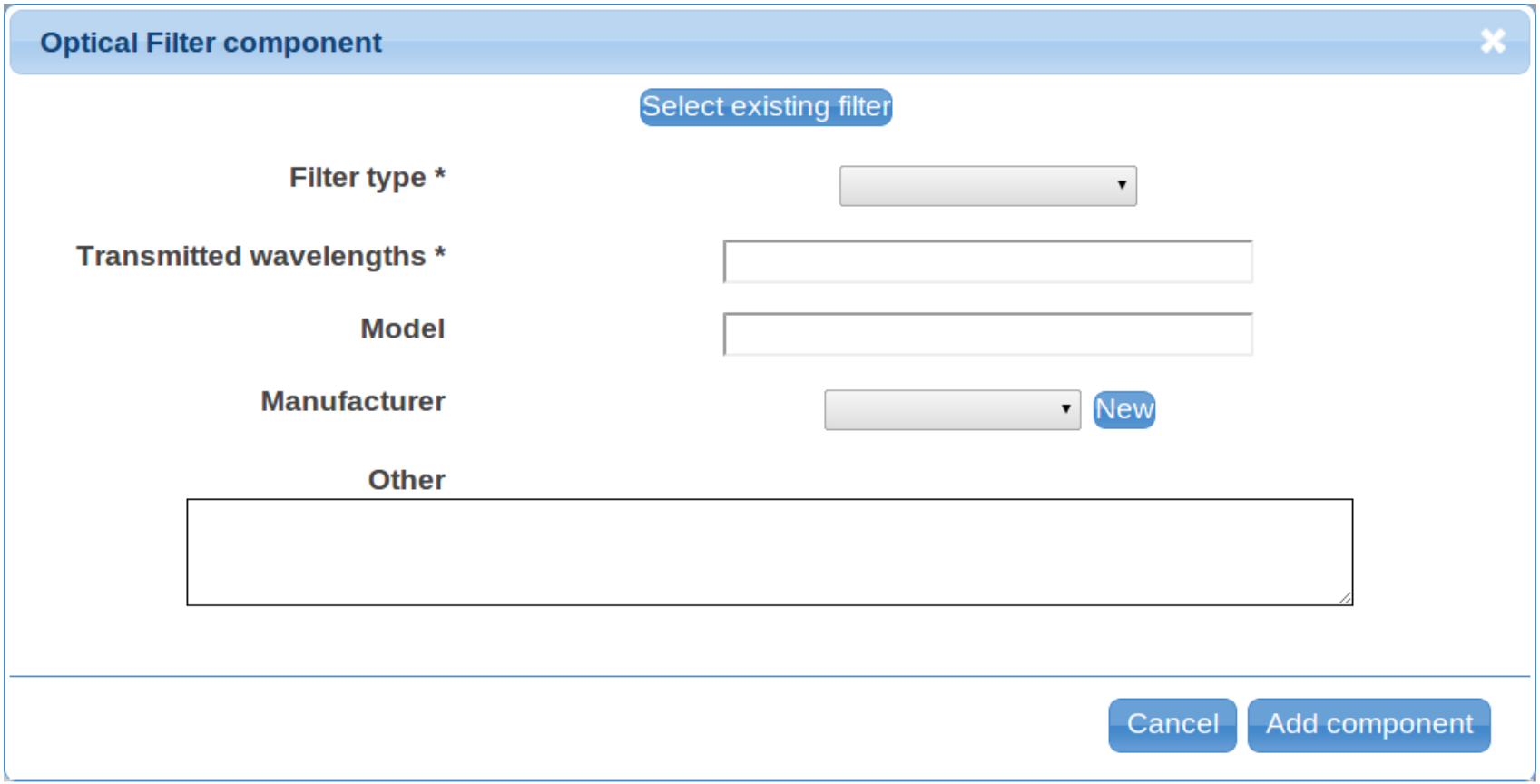
Instrumentation description

- New light source description:



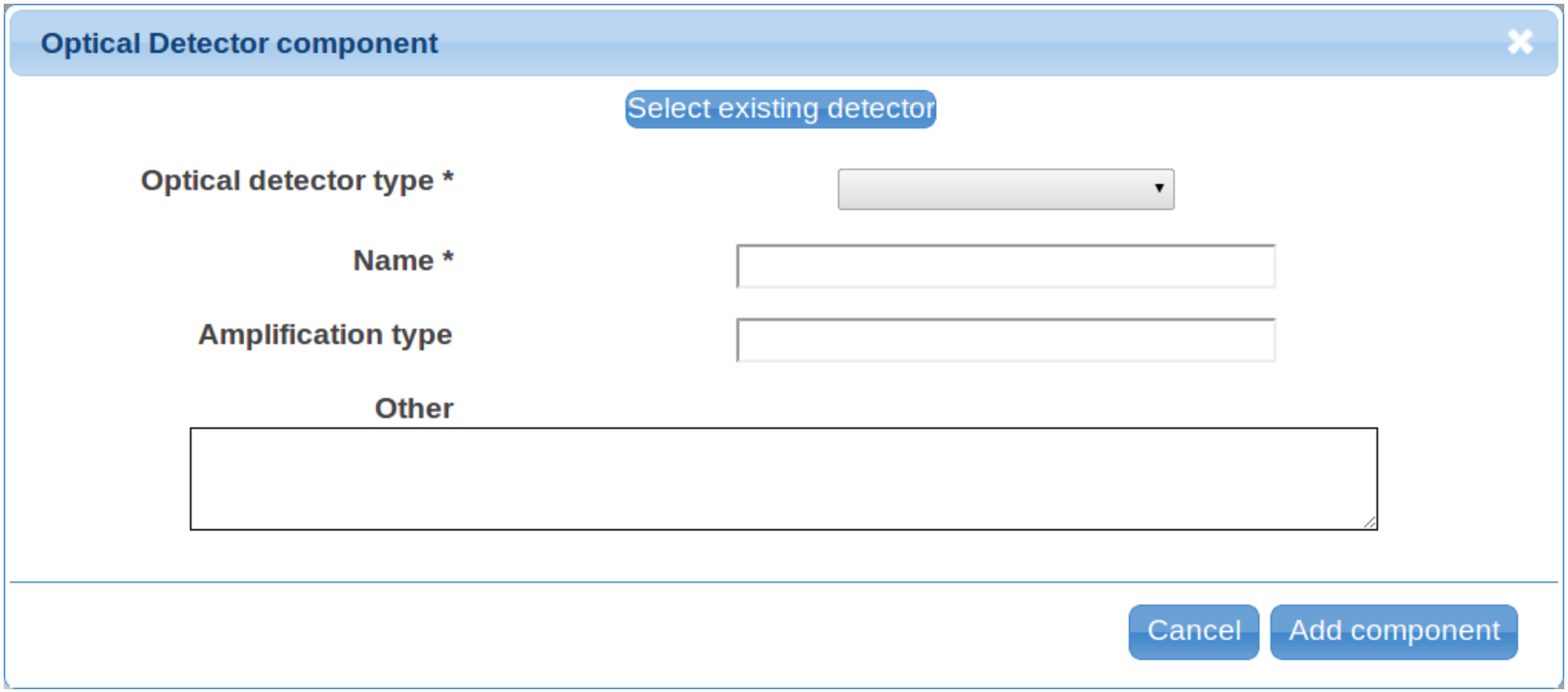
Instrumentation description

- New optical filter description:



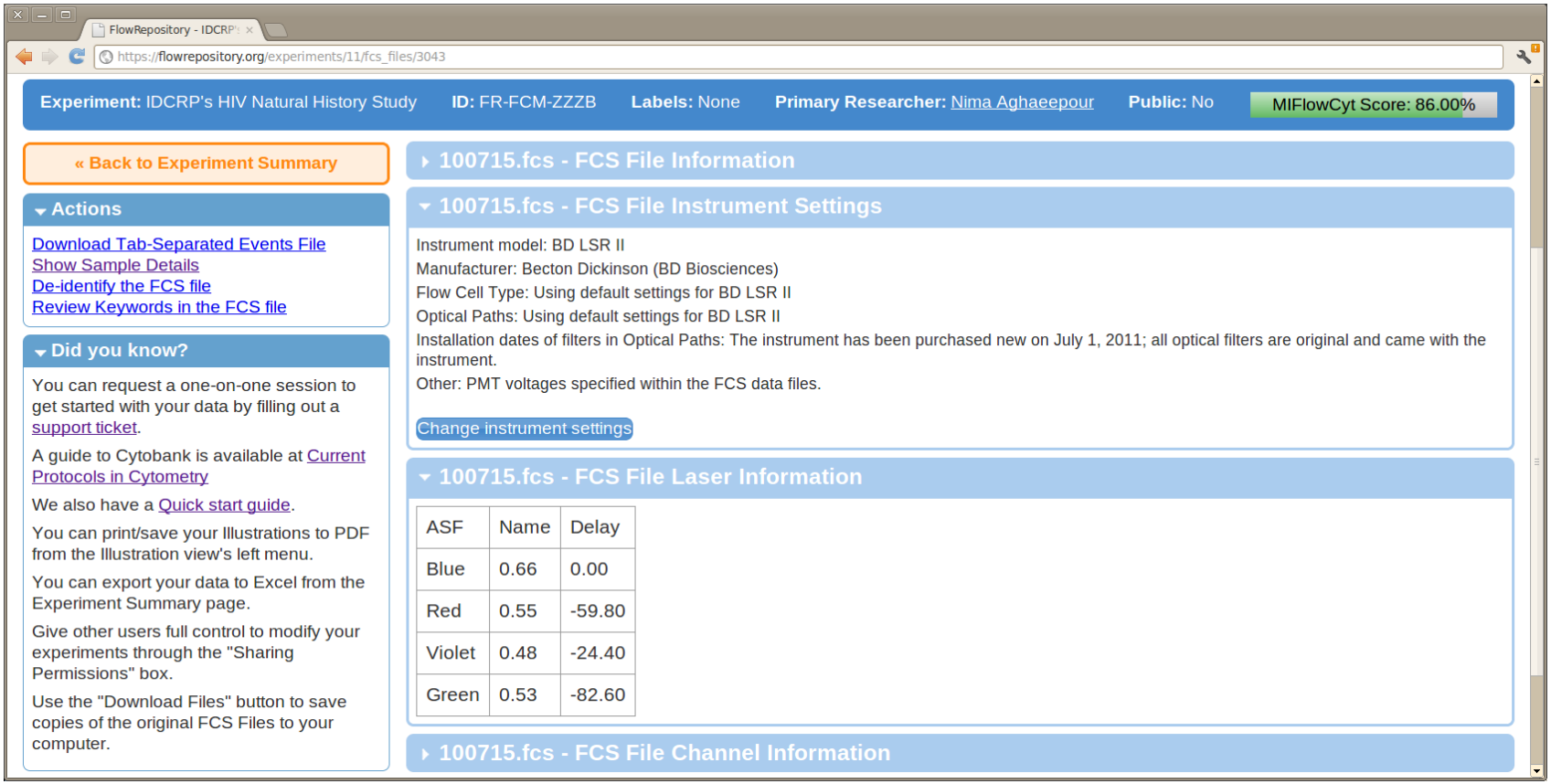
Instrumentation description

- New optical detector description:



Instrumentation description

- The MIFlowCyt score finally reached the "green area" once the instrumentation description is provided



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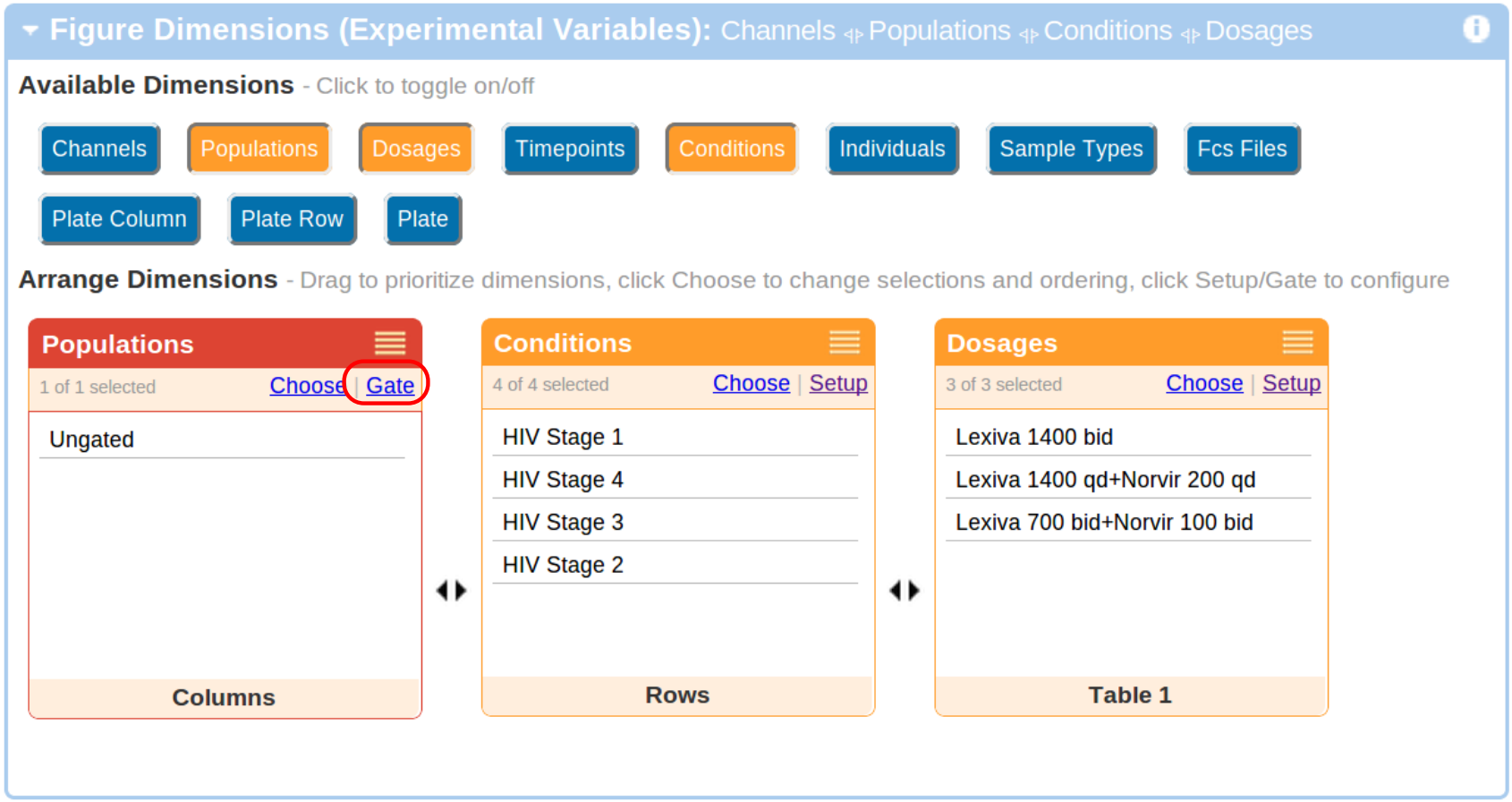
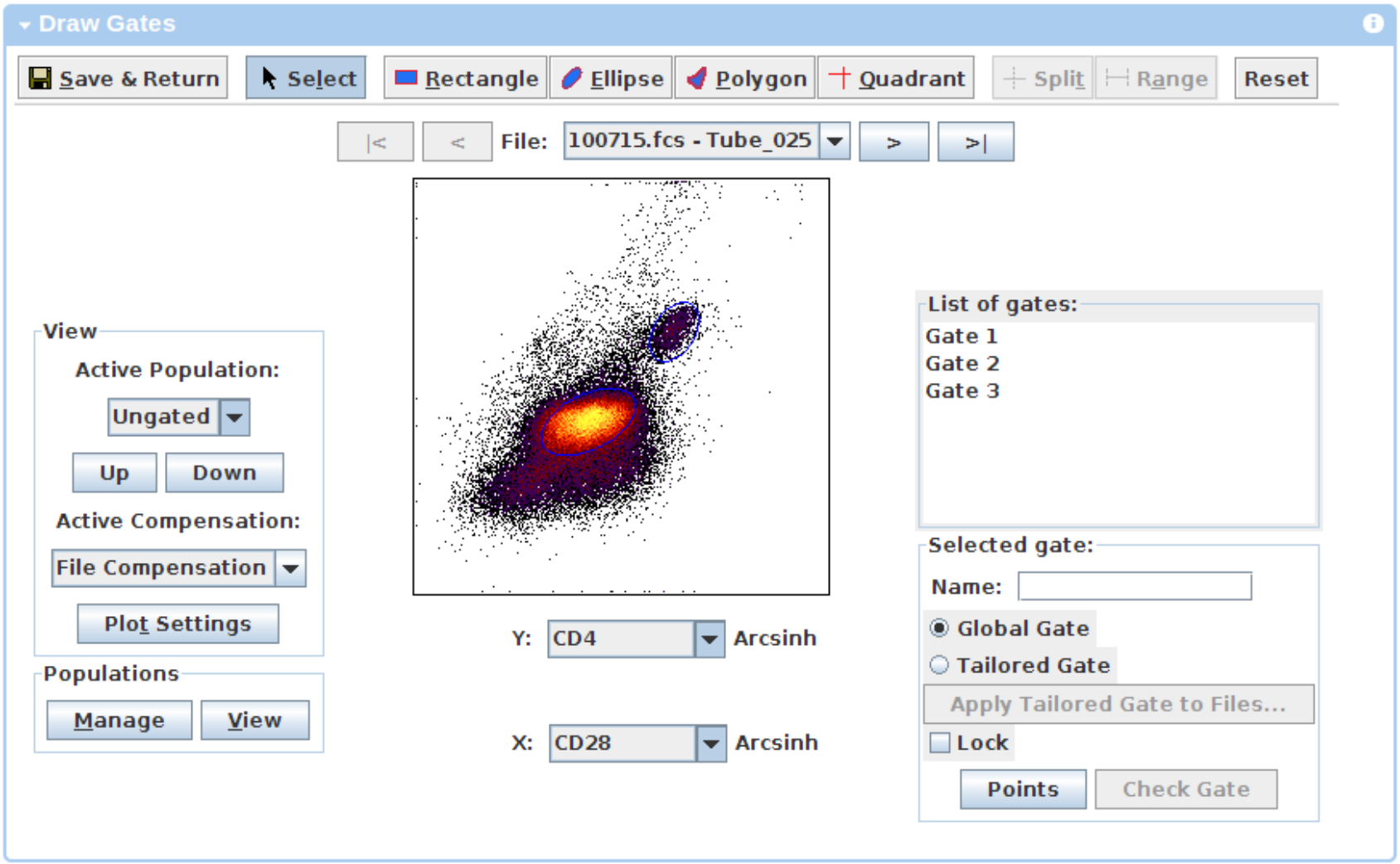
Analyze data online

- Navigate to your *Working illustration*
- Click on *Gate* in the Populations panel



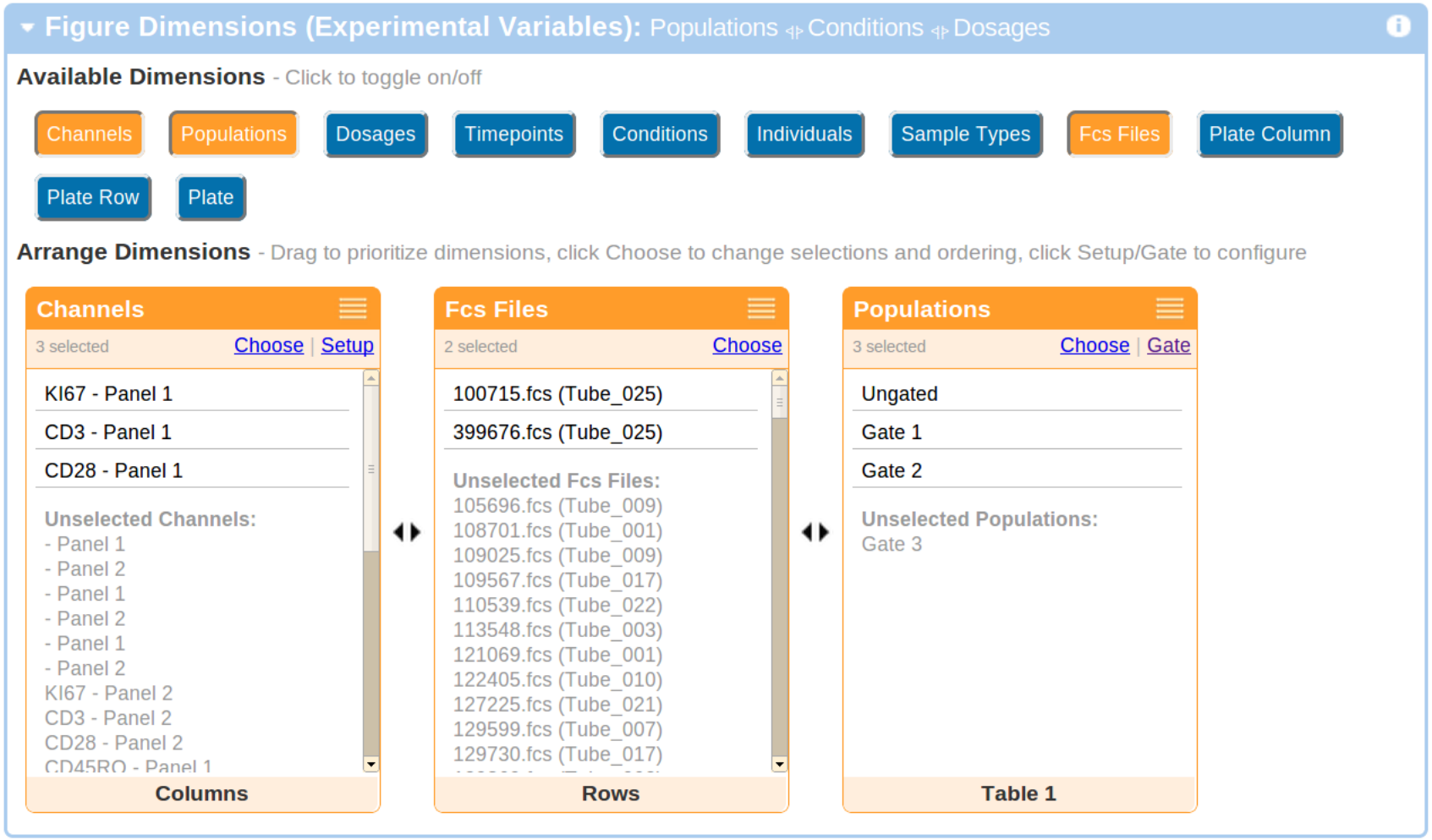
Analyze data online

- Draw your gates



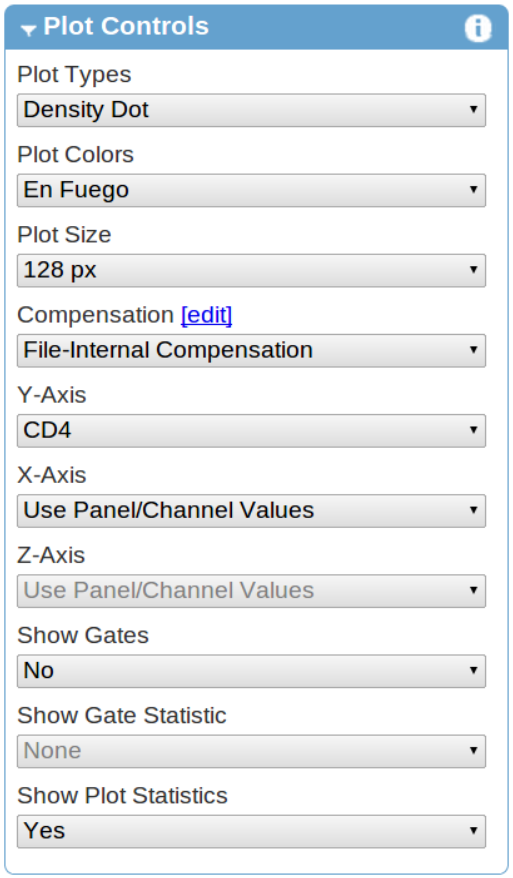
Analyze data online

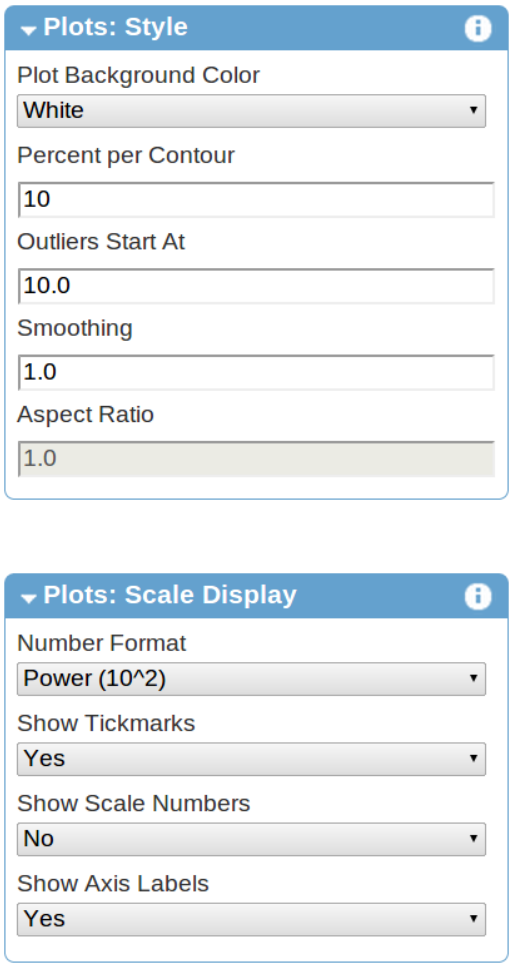
- Select what to include and organize figure dimensions

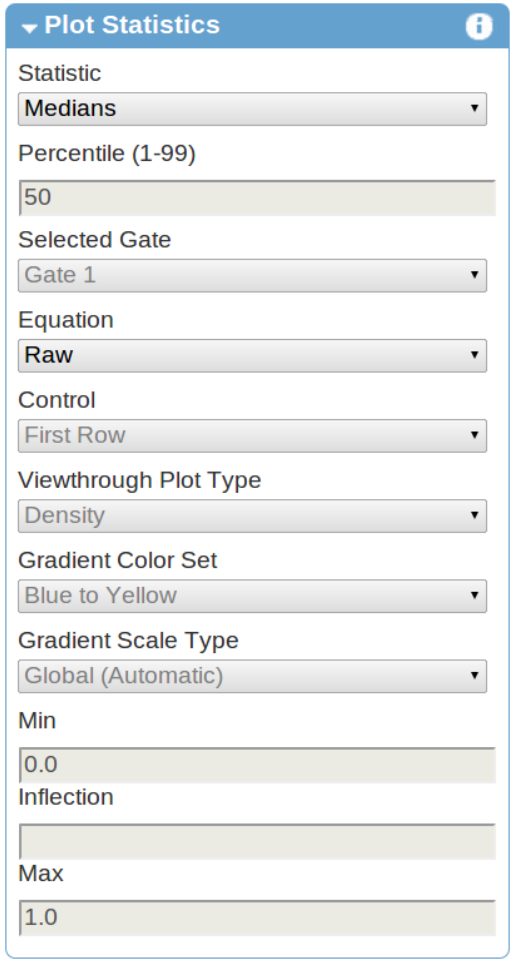


Analyze data online

- Configure plot and stats settings

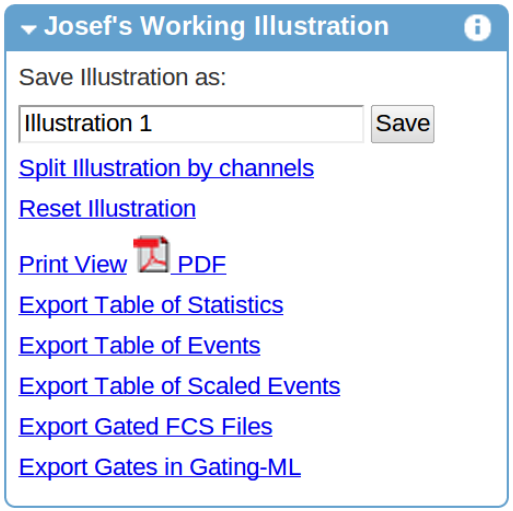


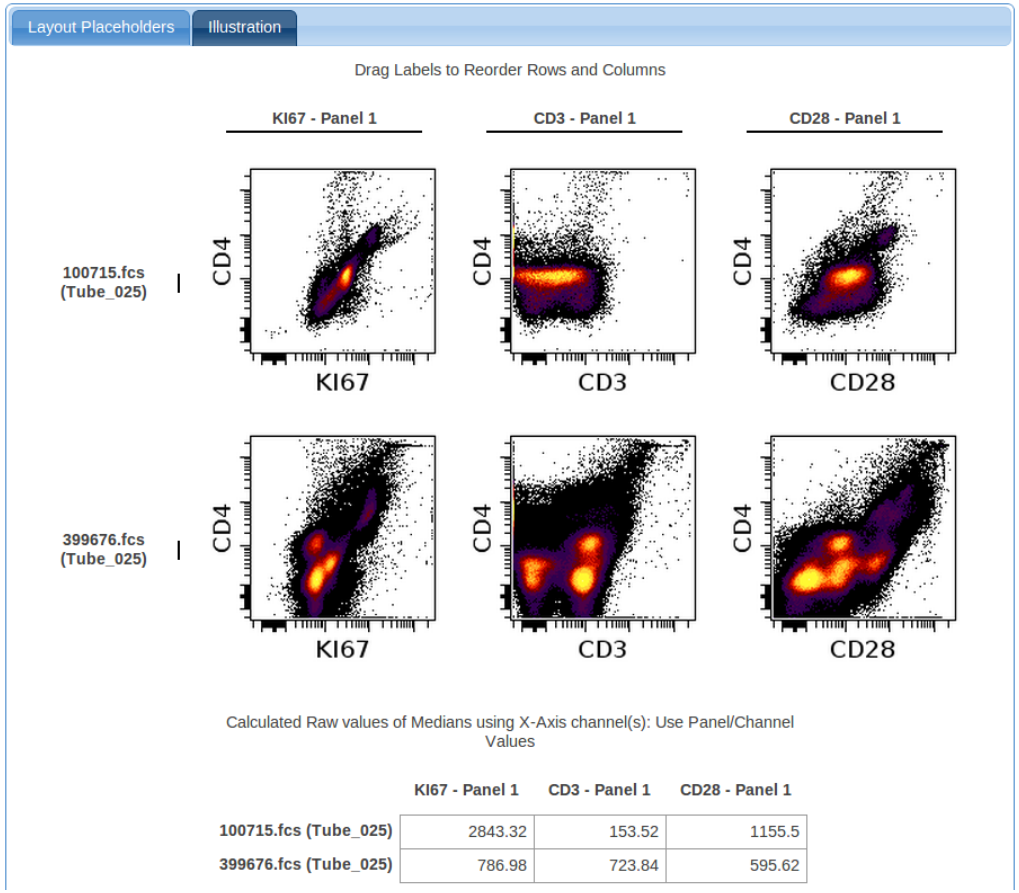




Analyze data online

- Review the illustration
- Name it and save it





	KI67 - Panel 1	CD3 - Panel 1	CD28 - Panel 1
100715.fcs (Tube_025)	2843.32	153.52	1155.5
399676.fcs (Tube_025)	786.98	723.84	595.62

Analyze data online

More on analyzing data online in Cytobank or FlowRepository:

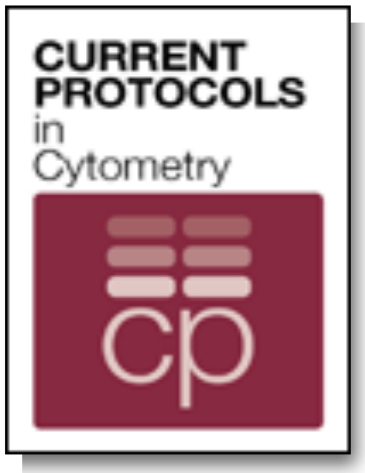
UNIT 10.17 Web-Based Analysis and Publication of Flow Cytometry Experiments

Nikesh Kotecha[1,2,3], Peter O. Krutzik[1,2], Jonathan M. Irish[1]

Published Online: 1 JUL 2010

DOI: 10.1002/0471142956.cy1017s53

Lab Protocol Title



Current Protocols in Cytometry

Upload and annotation of your own dataset

Typical steps

1. Create a new experiment
2. Upload data (FCS files)
3. Prepare annotation templates
   - Or prepare spreadsheets with annotations
4. Annotate the experiment
   - Describe samples and sample sources
   - Provide experimental variables
   - Describe instrumentation settings
5. Provide analysis details
   - Either analyze data online and create illustrations
   - Or upload third party analysis files (e.g., FlowJo™ workspaces, FCS Express™ project files, FACS Diva™ files, etc.)
6. Review (and improve) your MIFlowCyt compliance

Provide third party analysis files, figures, tables, etc.

- Upload these as attachments

Attachments

File Name	Date	Uploaded By	Size	md5sum
annotations.csv File specific sample source details	Jun 07	Josef Spidlen	15.5 KB	1de7e15...
HIV_Analysis.jo Complete analysis in FlowJo	11:57 AM	Josef Spidlen	14.4 MB	d8a8ab5...
HIV_Analysis_Overview.png Overview figure	12:06 PM	Josef Spidlen	169.3 KB	4958a88...
HIV_Analysis_Class_Comparison.jpg HIV class comparison figure	12:06 PM	Josef Spidlen	201.9 KB	5795d5e...
All_Statistics.xlsx Tables and stats	12:07 PM	Josef Spidlen	253.6 KB	95641c1...
Extended_description.docx More details on experimental design	12:07 PM	Josef Spidlen	208.2 KB	76f301b...

Attach a file

Choose File No file chosen

Upload

Upload and annotation of your own dataset

Typical steps

1. Create a new experiment
2. Upload data (FCS files)
3. Prepare annotation templates
   - Or prepare spreadsheets with annotations
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   - Describe samples and sample sources
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   - Or upload third party analysis files (e.g., FlowJo™ workspaces, FCS Express™ project files, FACS Diva™ files, etc.)
6. Review (and improve) your MIFlowCyt compliance

Experiment: IDCRP's HIV Natural History Study **ID:** FR-FCM-ZZZB **Labels:** None **Primary Researcher:** Nima Aghaeepour **Public:** No MIFlowCyt Score: 100.00%

« Back to Inbox

My Working Illustration »

MIFlowCyt Annotation »

Actions

Experiment

Edit Experiment Details

Delete Experiment

FCS Files

Download FCS Files

Upload More FCS Files

De-identify FCS Files

Review Keywords in FCS files

Sharing Permissions

Full Access Users

Nima Aghaeepour [PR]

Josef Spidlen [x]

Ryan Brinkman [x]

Invite a new user

Share with a User (Full Access)

This experiment is currently **private.**

Share with Everyone

You can also **create a secret access code** to share with reviewers.

Share with Reviewers

Did you know?

You can request a one-on-one session to get started with your data by filling out a support ticket.

A guide to Cytobank is available at Current Protocols in Cytometry

We also have a Quick start guide.

You can print/save your Illustrations to PDF from the Illustration view's left menu.

You can export your data to Excel from the

Getting Started: Experiment Details

Experiment Details

Illustrations

Name	Active Dimensions				Author	Created	Updated
Illustration 1	Channels (3) x Fcs Files (2) x Populations (3)	Print View	PDF	Delete	Josef Spidlen	11:37 AM	
Josef's Working Illustration	Channels (3) x Fcs Files (2) x Populations (3)	Print View	PDF		Josef Spidlen	May 2012	11:11 AM

Delete My Saved Illustrations | Reset Working Illustration

Attachments

File Name	Date	Uploaded By	Size	md5sum
annotations.csv File specific sample source details	Jun 07	Josef Spidlen	15.5 KB	1de7e15...
HIV_Analysis.jo Complete analysis in FlowJo	11:57 AM	Josef Spidlen	14.4 MB	d8a8ab5...
HIV_Analysis_Overview.png Overview figure	12:08 PM	Josef Spidlen	169.3 KB	4958a88...
HIV_Analysis_Class_Comparison.jpg HIV class comparison figure	12:08 PM	Josef Spidlen	201.9 KB	5795d5e...
All_Statistics.xlsx Tables and stats	12:09 PM	Josef Spidlen	253.6 KB	95641c1...
Extended_description.docx More details on experimental design	12:09 PM	Josef Spidlen	208.2 KB	76f301b...

Attach a file

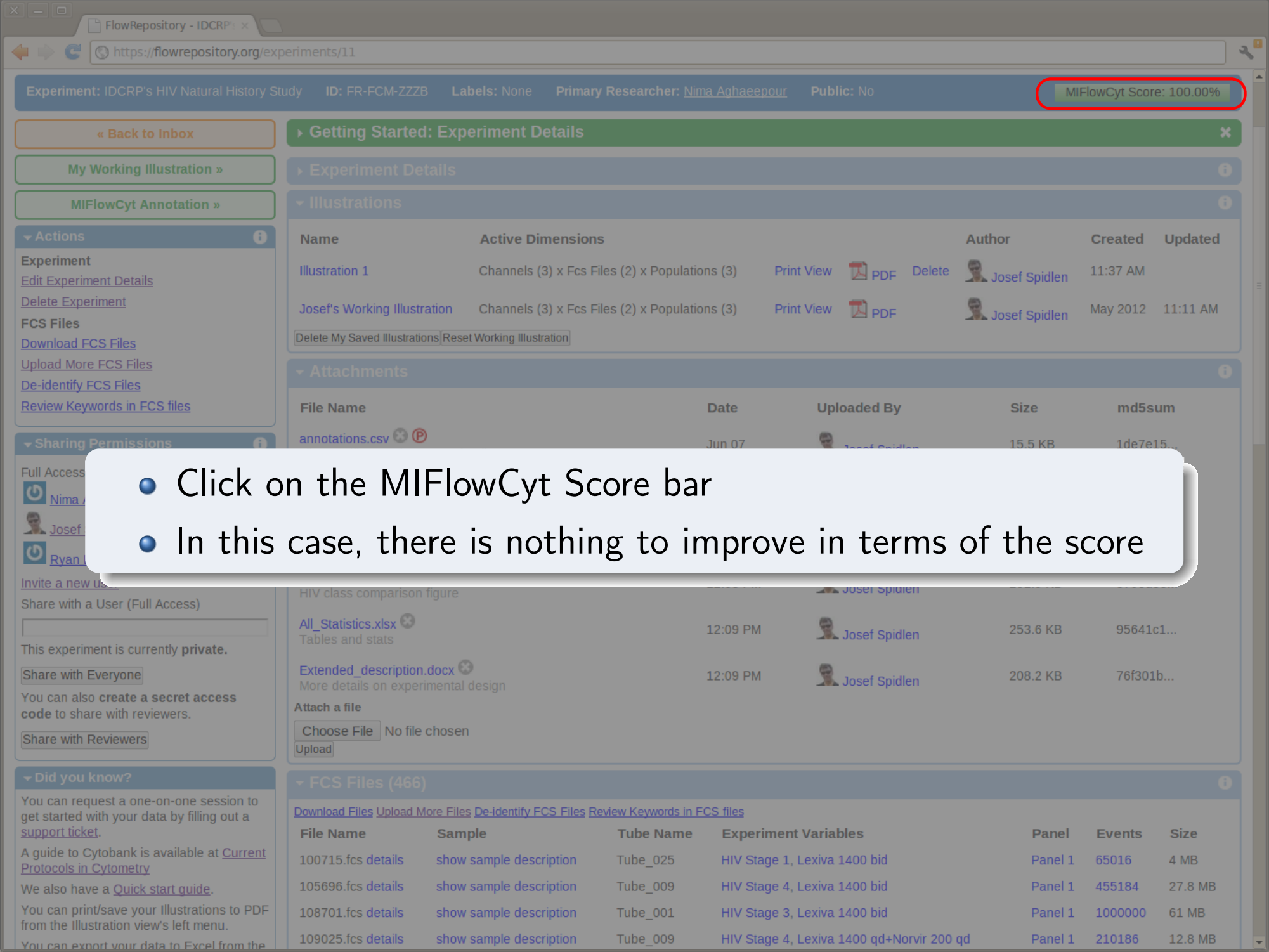
Choose File No file chosen

Upload

FCS Files (466)

Download Files | Upload More Files | De-identify FCS Files | Review Keywords in FCS files

File Name	Sample	Tube Name	Experiment Variables	Panel	Events	Size
100715.fcs details	show sample description	Tube_025	HIV Stage 1, Lexiva 1400 bid	Panel 1	65016	4 MB
105696.fcs details	show sample description	Tube_009	HIV Stage 4, Lexiva 1400 bid	Panel 1	455184	27.8 MB
108701.fcs details	show sample description	Tube_001	HIV Stage 3, Lexiva 1400 bid	Panel 1	1000000	61 MB
109025.fcs details	show sample description	Tube_009	HIV Stage 4, Lexiva 1400 qd+Norvir 200 qd	Panel 1	210186	12.8 MB


FlowRepository - IDCRP's
https://flowrepository.org/experiments/11
Experiment: IDCRP's HIV Natural History Study
ID: FR-FCM-ZZZB
Labels: None
Primary Researcher: Nima Aghaeepour
Public: No
MIFlowCyt Score: 100.00%
« Back to Inbox
My Working Illustration »
MIFlowCyt Annotation »
Actions
Experiment
Edit Experiment Details
Delete Experiment
FCS Files
Download FCS Files
Upload More FCS Files
De-identify FCS Files
Review Keywords in FCS files
Sharing Permissions
Share with a User (Full Access)
This experiment is currently private.
Share with Everyone
You can also create a secret access code to share with reviewers.
Share with Reviewers
Did you know?
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We also have a Quick start guide.
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Getting Started: Experiment Details
Experiment Details
Illustrations
Name
Active Dimensions
Author
Created
Updated
Illustration 1
Channels (3) x Fcs Files (2) x Populations (3)
Print View
PDF
Delete
Josef Spidlen
11:37 AM
Josef's Working Illustration
Channels (3) x Fcs Files (2) x Populations (3)
Print View
PDF
Josef Spidlen
May 2012
11:11 AM
Delete My Saved Illustrations
Reset Working Illustration
Attachments
File Name
Date
Uploaded By
Size
md5sum
annotations.csv
Jun 07
15.5 KB
1de7e15...
HIV class comparison figure
All_Statistics.xlsx
Tables and stats
12:09 PM
Josef Spidlen
253.6 KB
95641c1...
Extended_description.docx
More details on experimental design
12:09 PM
Josef Spidlen
208.2 KB
76f301b...
Attach a file
Choose File
No file chosen
Upload
FCS Files (466)
Download Files
Upload More Files
De-identify FCS Files
Review Keywords in FCS files
File Name
Sample
Tube Name
Experiment Variables
Panel
Events
Size
100715.fcs details
show sample description
Tube_025
HIV Stage 1, Lexiva 1400 bid
Panel 1
65016
4 MB
105696.fcs details
show sample description
Tube_009
HIV Stage 4, Lexiva 1400 bid
Panel 1
455184
27.8 MB
108701.fcs details
show sample description
Tube_001
HIV Stage 3, Lexiva 1400 bid
Panel 1
1000000
61 MB
109025.fcs details
show sample description
Tube_009
HIV Stage 4, Lexiva 1400 qd+Norvir 200 qd
Panel 1
210186
12.8 MB
Click on the MIFlowCyt Score bar
In this case, there is nothing to improve in terms of the score

Experiment: IDCRP's HIV Natural History Study **ID:** FR-FCM-ZZZB **Labels:** None **Primary Researcher:** Nima Aghaeepour **Public:** No MIFlowCyt Score: 100.00%

« Back to Experiment Summary

MIFlowCyt

Show MIFlowCyt score details
Report Suspicious Score...

Print View PDF

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We also have a Quick start guide.

You can print/save your Illustrations to PDF from the Illustration view's left menu.

You can export your data to Excel from the Experiment Summary page.

Give other users full control to modify your experiments through the "Sharing Permissions" box.

Use the "Download Files" button to save copies of the original FCS Files to your computer.

MIFlowCyt Compliance Score for Experiment: IDCRP's HIV Natural History Study - Repository ID: FR-FCM-ZZZB

Total MIFlowCyt compliance score: **100.00%**

1 - Experiment Overview - 100.00% provided

Items considered relatively based on importance, 30% contribution to total score.

Item	Compliance [+ -]	Improve
Purpose	Provided purpose	Fully provided
Keywords	Provided keywords	Fully provided
Experiment variables	Provided experiment variables	Fully provided
Organization	Provided organization name Provided organization address	Fully provided
Contact	First name of primary researcher provided Last name of primary researcher provided Email of primary researcher provided	Fully provided
Date	Provided experiment starting date Provided experiment end date	Fully provided
Conclusions	Provided conclusions	Fully provided
Quality control measures	Provided quality control description	Fully provided

- The "Improve" column will show direct links to pages/forms in case some information is still missing

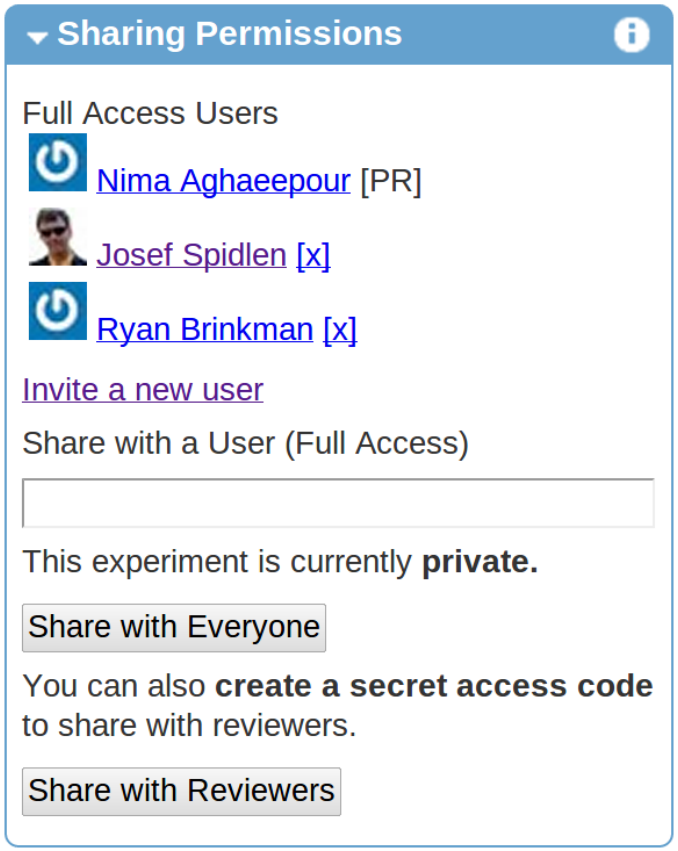
2 - Flow Sample/Specimen Details - 100.00% provided

Items considered relatively based on importance, 30% contribution to total score.

FCS file	Compliance [+ -]	Improve
	Provided sample description Provided sample source description	

Data sharing

- You can share with other FlowRepository users
  - This will grant full access
- You can make your experiment public
  - This will grant read access to everyone, including anonymous visitors
- You can share with reviewers



Data sharing

- You can share with other FlowRepository users
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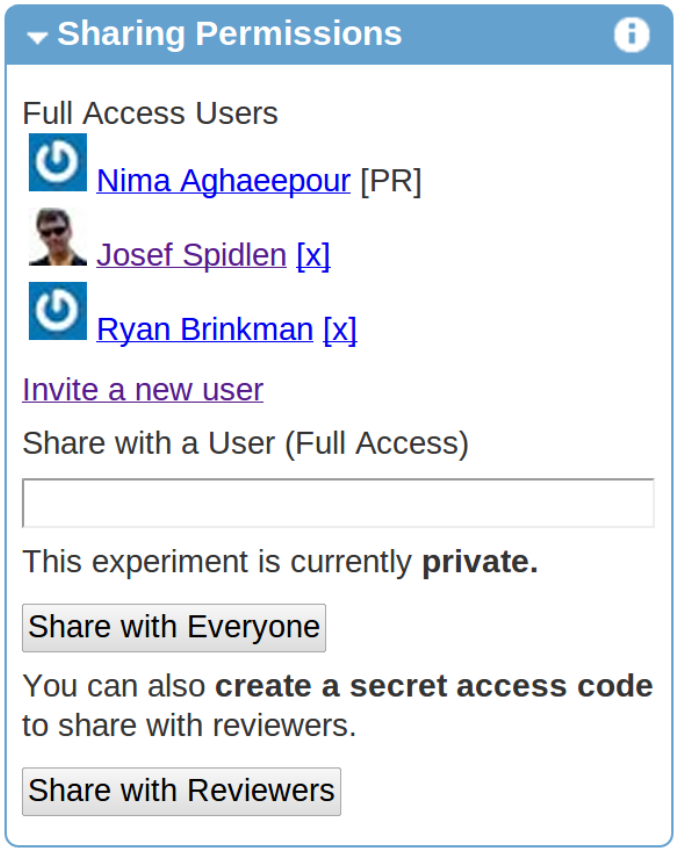
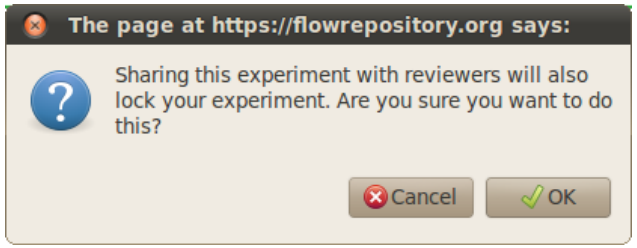
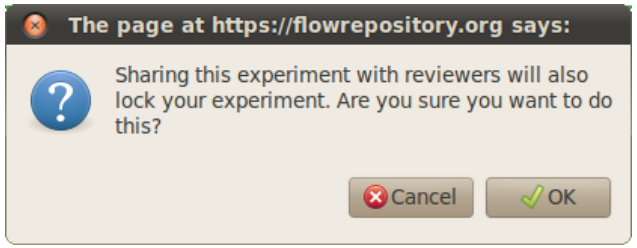
- You can make your experiment public
  - This will grant read access to everyone, including anonymous visitors
- You can share with reviewers
  - This will lock your experiment and create a secret access code



Data sharing



Data sharing



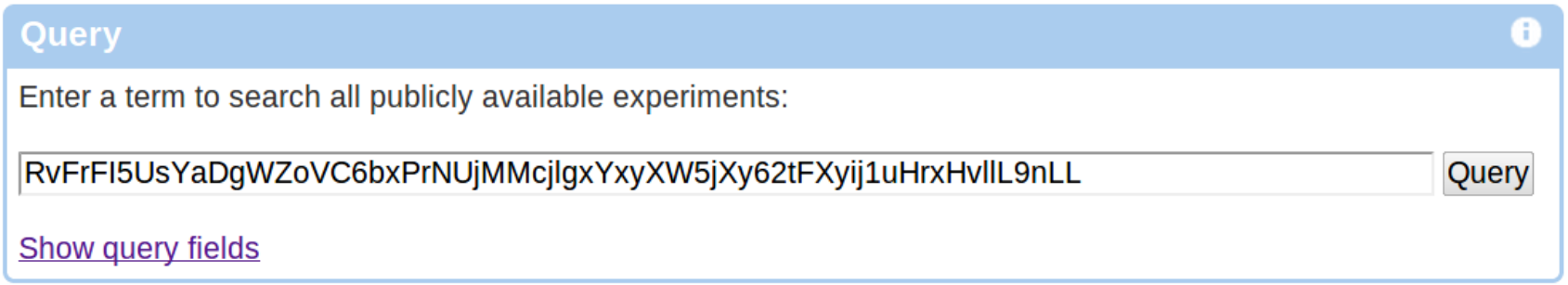
Experiment was successfully updated. This experiment has been locked for reviewers' access and may be accessed via the following URL:
https://flowrepository.org/id/RvFrFI5UsYaDgWZoVC6bxPrNUjMMcjlgxYxyXW5jXy62tFXyij1uHrxHvllL9nLL.
Please share this URL with your reviewers.

Sharing Permissions

Full Access Users
This experiment is currently locked! No users have edit access to this experiment.
This experiment is **shared with reviewers** via a secret code.

What to do with the secret code?

- Share the "secret code" with the editor in your cover letter
- The editor will pass it to reviewers
- Reviewers will use it to obtain read-only access to your dataset
  - By navigating directly to https://flowrepository.org/id/RvFrFI5UsYaDgWZ....
  - Or entering RvFrFI5UsYaDgWZ.... in the "Query" field



What to do if editor/reviewer requires changes?

- Depending on the journal,
  - The editor may contact FlowRepository administrators and arrange for the dataset to be unlocked
  - Or, you may have to fill out a FlowRepository support ticket and ask for the dataset to be unlocked

Summary

FlowRepository can be used to

- Access
- Review
- Download
- Deposit
- Annotate
- Share
- Analyze

flow cytometry datasets.

All you need is

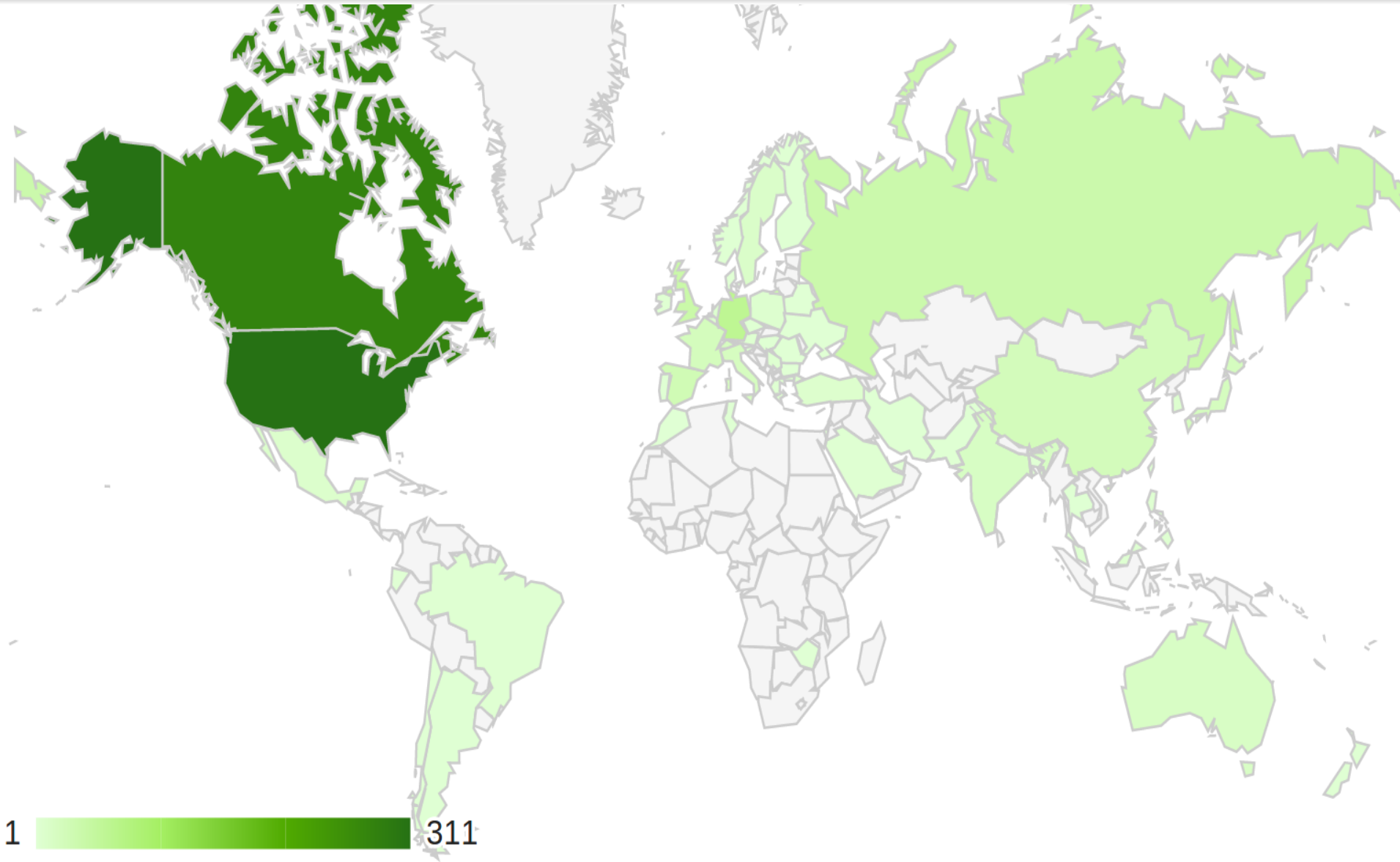
- A computer
  - With Internet connection
- A web browser
  - With Java support
- An OpenID (e.g., Google Account)
  - Required for write access only

Site visits in the last 3 months

609 people visited this site

Visits: 991

FlowRepository Visits by Country, March – June 2012



FlowRepository Visits by Country, March – June 2012

	Country	Visits
1.	United States	311
2.	Canada	278
3.	Germany	60
4.	United Kingdom	40
5.	Russia	38
6.	Spain	29
7.	China	24
8.	France	22
9.	Japan	20
10.	Switzerland	19

	Country	Visits
11.	Italy	19
12.	India	16
13.	Australia	15
14.	Sweden	11
15.	Singapore	11
16.	Mexico	8
17.	Turkey	7
18.	South Korea	6
19.	Netherlands	6
20.	Poland	6

Users from 60 countries worldwide

1 311

Some more stats... (as of June 13, 2012)

But "only"

- 52 Registered users
- 31 Datasets
  - Only 8 of these public
- 4,850 FCS files (28 GB)

Some more stats... (as of June 13, 2012)

But "only"

- 52 Registered users
- 31 Datasets
  - Only 8 of these public
- 4,850 FCS files (28 GB)

$\rightarrow$ Please share your data.

Additional resources

- Spidlen J, Breuer K and Brinkman RR. Preparing a Minimum Information about a Flow Cytometry Experiment (MIFlowCyt) Compliant Manuscript Using the International Society for Advancement of Cytometry (ISAC) FCS File Repository (FlowRepository.org). *Curr Protoc Cytom.* 2012 Jul; Chapter 10: Unit 10.18.
- Kotecha N, Krutzik PO and Irish JM. Web-based analysis and publication of flow cytometry experiments. *Curr Protoc Cytom.* 2010 Jul; Chapter 10: Unit 10.17.
- Spidlen J, Breuer K, Rosenberg C, Kotecha N and Brinkman RR. FlowRepository – A Resource of Annotated Flow Cytometry Datasets Associated with Peer-reviewed Publications. *(submitted)*

- FlowRepository quick start guide: https://flowrepository.org/quick_start_guide
- Cytobank documentation site: http://docs.cytobank.org

What new features to expect... (development in progress)

- FlowRepository Application Programming Interface

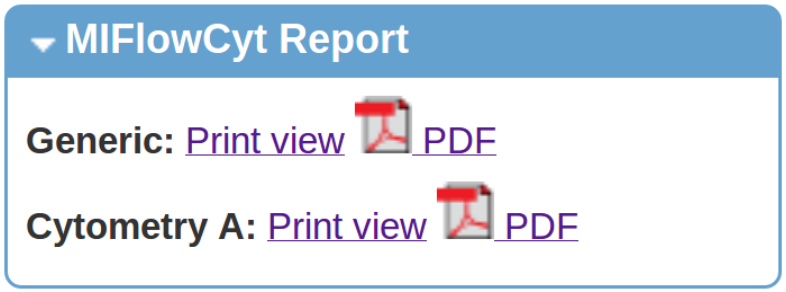
→ Third party software will be able to

  - Directly work with datasets saved in FlowRepository
  - Deposit data to FlowRepository on your behalf

- In fact, initial implementation already exists in FlowJo™ (for now, only read access to FlowRepository is provided and only basic data and annotations shared)
- If you are a Flow Cytometry Software vendor, please talk to us!

What new features to expect... (development in progress)

- MIFlowCyt Reports



Cytometry Part A
Author Checklist - MIFlowCyt-Compliant Items for Experiment
Test 01
(Repository ID: FR-FCM-ZZZY)

Requirement	Requested Information
1.1. Purpose	Test, new clean install
1.2. Keywords	test
1.3. Experiment variables	Doses - *50 ug of A* A03, A07, B03, B08, B09, B10, B11, D01, D03 - *100 ug of A* A01, A08, B01, B04, B06, C01, C04, D04, D06 - *150 ug of A* A02, A09, B02, C03, C06, C09, D02, D07, D08 Individuals - *Mouse 1* A04, A06, A07, B08, C02, D01, D04, D06, E04 - *Mouse 2* B01, B02, B03, B04, B06, B11, C01, C03, C09, D08, D10, E06, E07, E09, F02 - *Mouse 3* B07, B09, B10, D02, D03, D09, E01 Conditions - *unstimulated* A03, A04, A06, B02, B08, C02, C03 - *PMA-ionomycin for 6 hours* A07, A09, B01, B03, B04, B11, C04, C07, D01 - *PMA-ionomycin for 12 hours* B06, B09, C01, C06, C08, C09, D02, D03, D04, D06, D07
1.4. Organization name and address	None
1.5. Primary contact name and email address	Josef Spidlen, jspidlen@gmail.com
1.6. Date or time period of experiment	2011-01-01
1.7. Conclusions	None
1.8. Quality control measures	None
2.1.1.1. (2.1.2.1., 2.1.3.1.) Sample description	*All FCS files:* Sample template 1
2.1.1.2. (2.1.2.1, 2.1.3.1) Sample source description	Description / Applicable to Mouse samples source 1: 2nd Settings, A01, A02, A04, A06, A07, A08, A09, B01, B02, B03, B04, B06, B07, B08, B09, B10, B11, C01, C02, C03, C04, C06, C07, C08, C09, D01, D02, D03, D04, D06, D07, D08, D09, D10, E01, E02, E03, E04, E06, E07, E08, E09, F01, F02, F03, F04, F06, F07, F08, F09, F10, G01, G02, G03, G04, G06, G07, G08, G09, H01, H02, H03, H04, H06, H07, H08, H09, H10, Specimen_001_Tube_052.fcs, Specimen_001_Tube_053.fcs, Specimen_001_Tube_056.fcs, Specimen_001_Tube_057.fcs, Specimen_001_Tube_058.fcs, Specimen_001_Tube_059.fcs Unknown: A03
2.1.1.3.1 Source organism taxonomy	Taxonomy / Applicable to Mus musculus (house mouse, NCBI tax. ID: 10090): 2nd Settings, A01, A02, A04, A06, A07, A08, A09, B01, B02, B03, B04, B06, B07, B08, B09, B10, B11, C01, C02, C03, C04, C06, C07, C08, C09, D01, D02, D03, D04, D06, D07, D08, D09, D10, E01, E02, E03, E04, E06, E07, E08, E09, F01, F02, F03, F04, F06, F07, F08, F09, F10, G01, G02, G03, G04, G06, G07, G08, G09, H01, H02, H03, H04, H06, H07, H08, H09, H10, Specimen_001_Tube_052.fcs, Specimen_001_Tube_053.fcs, Specimen_001_Tube_056.fcs, Specimen_001_Tube_057.fcs, Specimen_001_Tube_058.fcs, Specimen_001_Tube_059.fcs Unknown: A03
	Age / Applicable to 21 weeks: 2nd Settings

What new features and changes to expect...

- Relaxing some of the required annotations
- Annotation export in spreadsheet form
- User configurable inbox view
- Complete one click dataset download (with all attachments, illustrations, etc.)
- Better instrumentation support based on defaults obtained from manufactures
- Better performance for datasets with thousands of FCS files
- Better support for experiment variables (including continuous variables)
- Additional sanity checks, e.g., annotations vs. contents of the data files, possibly with the use of ontologies

What new features and changes to expect...

- Better import, export and merging
- Improved interface (e.g., more "smart" auto-complete)
- Better support for CyTOF
- Support for the Human Immunology Project Consortium (HIPC) Lyoplates
- Continuous improvements and fixes

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- Better import, export and merging
- Improved interface (e.g., more "smart" auto-complete)
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- Support for the Human Immunology Project Consortium (HIPC) Lyoplates
- Continuous improvements and fixes

- Also, whatever the users ask for
  - As long as it is feasible to implement within our budget
  - This may be a good time to suggest additional features and improvements

Acknowledgments

BC Cancer Agency	Ryan Brinkman, Karin Breuer, Patrick Tan, Nima Aghaeepour, Mehrnoush Malekesmaeili
Cytobank, Inc.	Nikesh Kotecha, Chad Rosenberg, Jennifer Davis, Chris Coveney, Christina Dong, Robin Powell, Jonathan Irish, Amy Lee
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The End

Thank you!

Questions and Comments?