Rho Labkey for Collection of Mechanistic Assay Data and Visualization of Clinical-Assay Data

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> LabKey User Conference Seattle, WA



Rho LabKey

- Objectives
 - Replace current assay data transfer process
 - Couple assay-specimen-clinical data
 - Provide real-time QC
 - Provide assay-clinical data visualization
 - Provide repository for merged assay-clinical data



Current Status

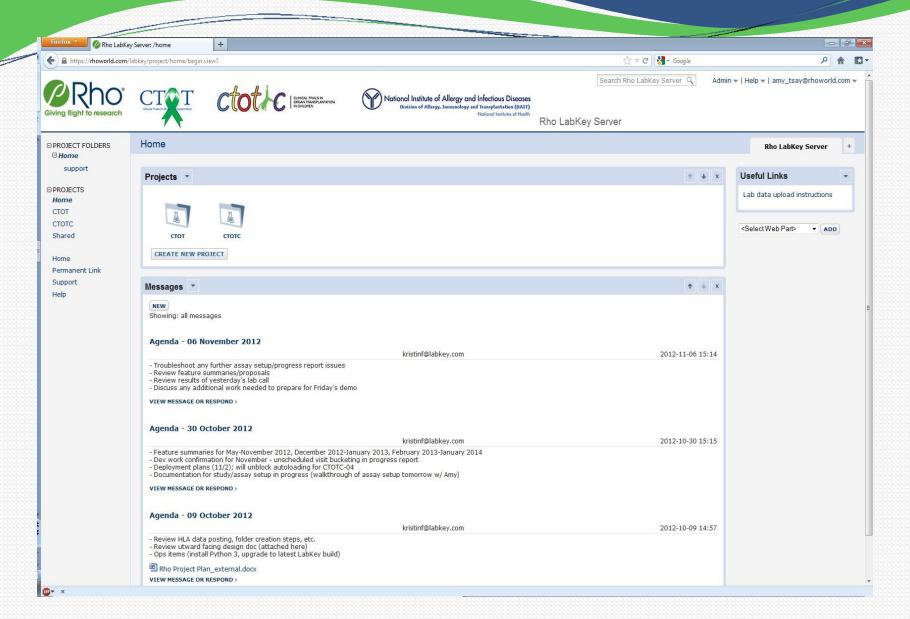
- Specimen tracking data is auto-loaded nightly
- Customized lab data import modules complete:
 - Lab uploads formatted for cumulative or incremental transfers with downloadable templates
 - Data is QCed against sampleminded data in real-time
 - Labkey immediately reports discrepancies requiring resolution in listing and heat map
 - Specimen status summarized in "consort diagram"
 - Lab data not "published" until all queries resolved
 - All uploaded versions maintained as an audit trail



Current Status (cont.)

- Data visualization features include:
 - Labs can easily see what data issues there are in their specimen inventory that need their attention
 - Lab assay data can be filtered, sorted and viewed in charts and figures, and many are interactive
 - Example clinical data can be merged and visualized in a variety of exploratory data analysis formats











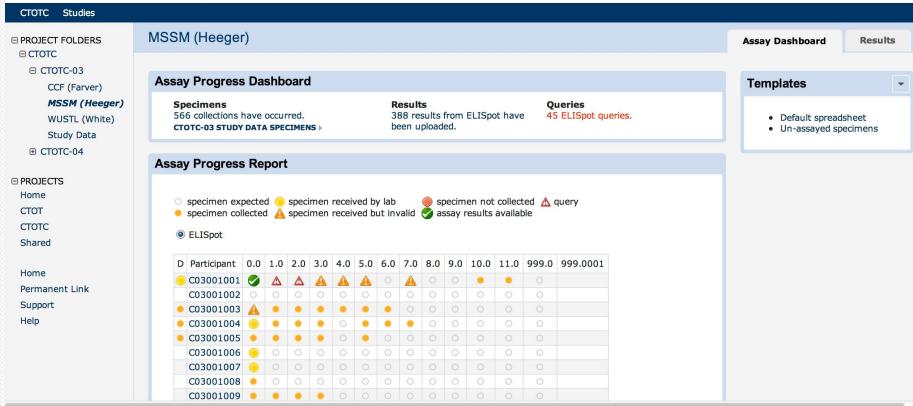


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Rho LabKey Server





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1	ParticipantID			DateShipped	DateReceived	ReceivedbyLab	NewEntrybyLab		WasSpecimenAdequate_	WereCellsViable_Y_N	
2	C03002001	999.	2010-06-07 04:00						_		- 8
3	C03005010	3.	2012-06-19 05:00								13
4	C03006001	999.	2009-08-11 05:00								- 1
5	C03300007	0.	2013-01-24 08:00								
6	C03006037	999.	2013-01-17 06:00								
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8	C03005008	4.	2013-01-30 06:00								
9	C03006021	10.	2012-07-23 05:00								
10	C03006032	2.	2012-06-22 05:00								
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12	C03006025	999.	2012-09-25 05:00								
13	C03091005	1.	2013-03-05 05:00								
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16	C03006033	6.	2012-11-27 06:00								
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18	C03006029	7.	2012-04-02 05:00								
19	C03006032	5.	2012-08-14 05:00								38
20	C03006005	11.	2012-02-13 06:00								- 33
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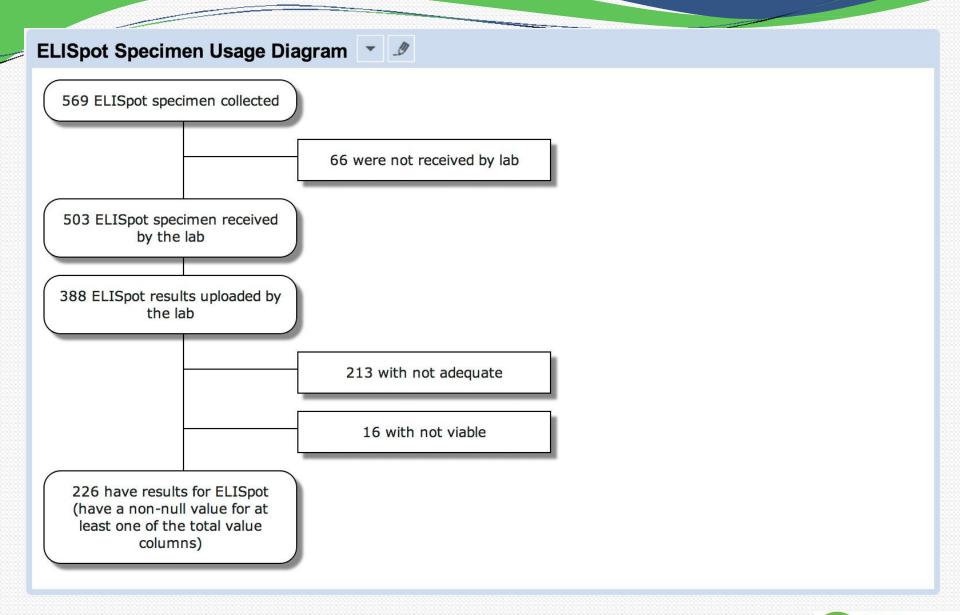


Assay Progress Report

- ELISpot

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	C03001009	•	•	•	•										
	C03001010	0	0	0	0	0	0	0	0	0	0	0	0	0	
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National Institute of Allergy and Infectious Diseases

Division of Allergy, Immunology and Transplantation (DAIT)

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Results

ELISpot Runs

MANAGE ASSAY DESIGN > VIEW BATCHES > VIEW RUNS > VIEW RESULTS > VIEW COPY-TO-STUDY HISTORY >

2009-12-21 2009-11-23 YES

2010-04-19 2010-03-16 YES

V	EWS	CHARTS	EXPORT	PRINT	PAGE SIZE	DELETE	SHOW RESU	LTS	COPY TO STUDY	IMPORT DATA	RE-IMPORT RUN	REPLA	ACED FILTER
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ELISpot Results

C03002001

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MANAGE ASSAY DESIGN VIEW BATCHES > VIEW RESULTS > VIEW COPY-TO-STUDY HISTORY > VIEW RUNS > **CHARTS EXPORT** PRINT PAGE SIZE V REPLACED FILTER 1 - 100 of 137 Next > × View: Good Data Flag Query ParticipantID VisitID Date Date Donor Donor Specific PRT Collagen Collagen a-Date Received New PRT Specific Total Specific tubulin tubulin Message Shipped Received by Lab Entry Total (Value) Total by Lab (Value) (Value) (Value) (Value) Total Specific (Value) (Value) C03001001 0.0 2011-07-27 2011-02-25 YES 13.5 13.0 47.5 47.5 0.0 0.0 25.0 24.5 C03002001 4.0 2009-12-21 2009-11-16 YES 12.0 10.5 84.5 84.5 0.5 0.0 0.5 0.0

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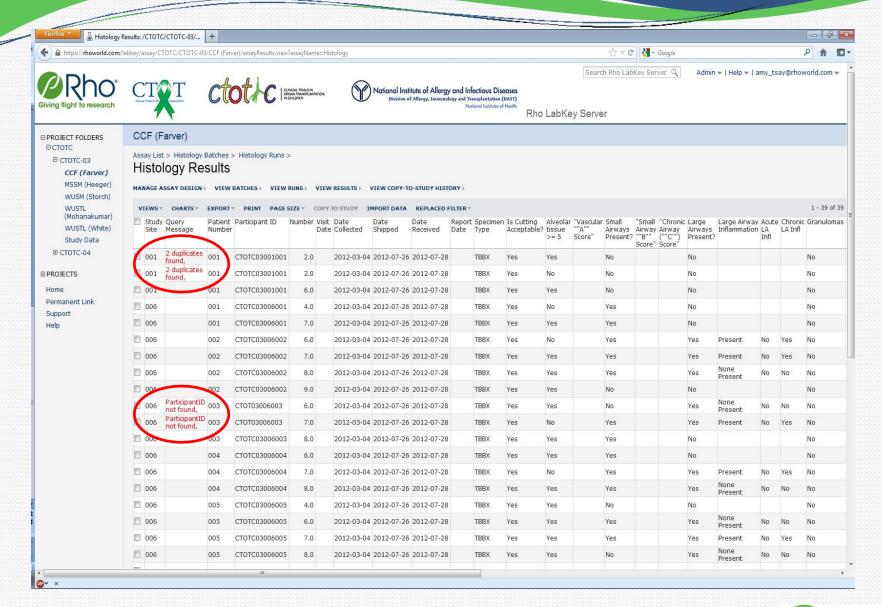
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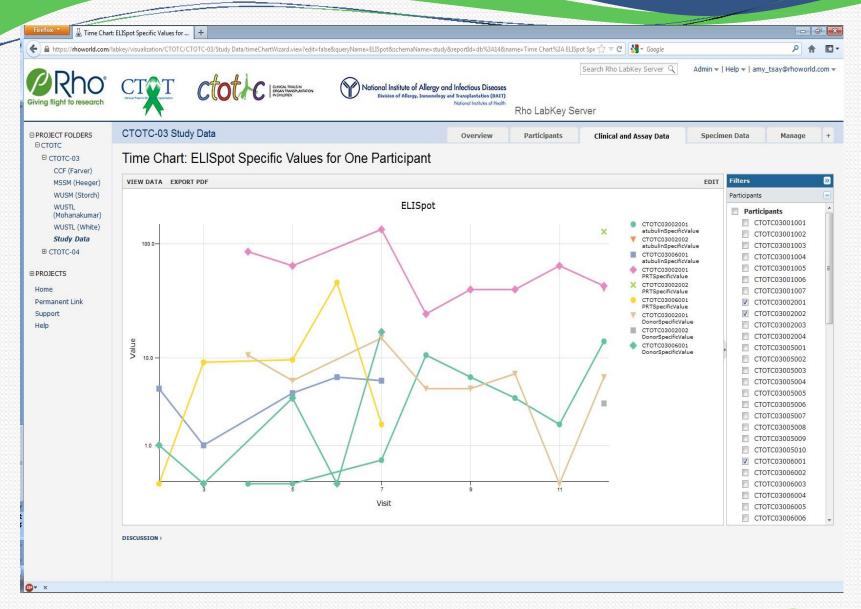
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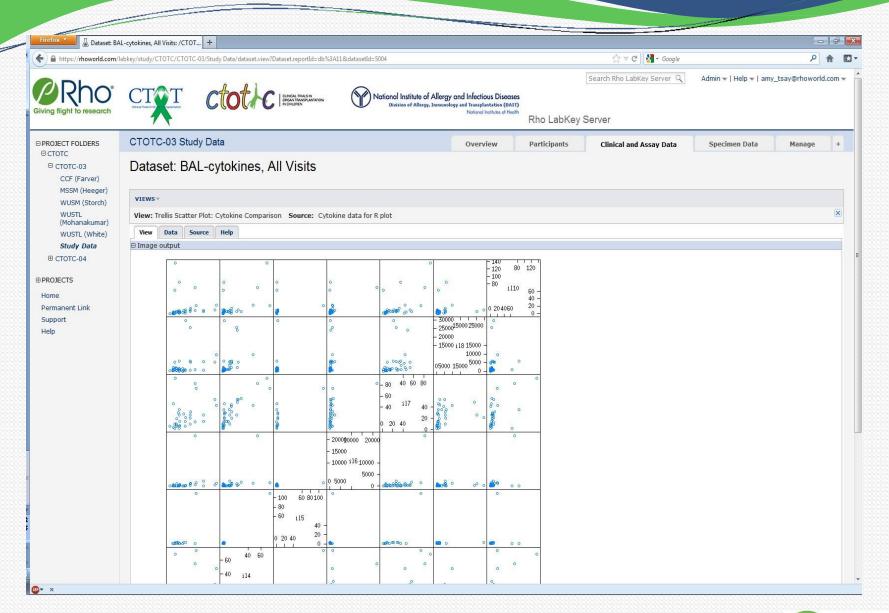




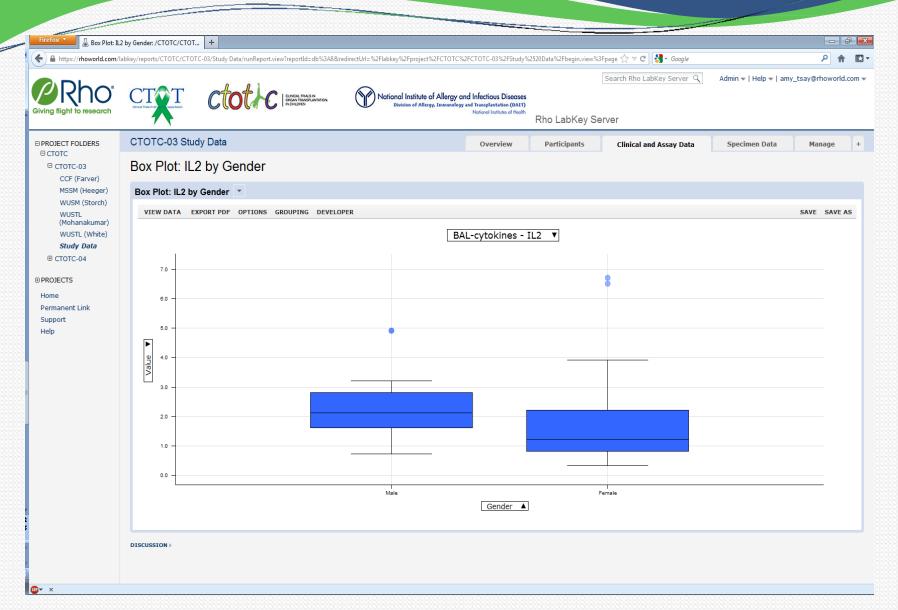














Next Steps

- Migrate all central labs on active trials to Labkey
- Complete implementation of auto-loading of clinical analysis data sets
- Form a working group to develop guidelines and specifications for exploratory and end-of-study analyses of merged study data
- Develop and implement data visualization features following working group guidelines
- Develop support for ancillary studies by permitting queries for samples based on clinical phenotypes across studies



Acknowledgements

- LabKey development team
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