



2019 Steering Committee Meeting

Database Discussion

Reference

Ontologies
controlled vocabularies
knowledge base

External References
links to other databases

Measurement Units

Member/Center Administration

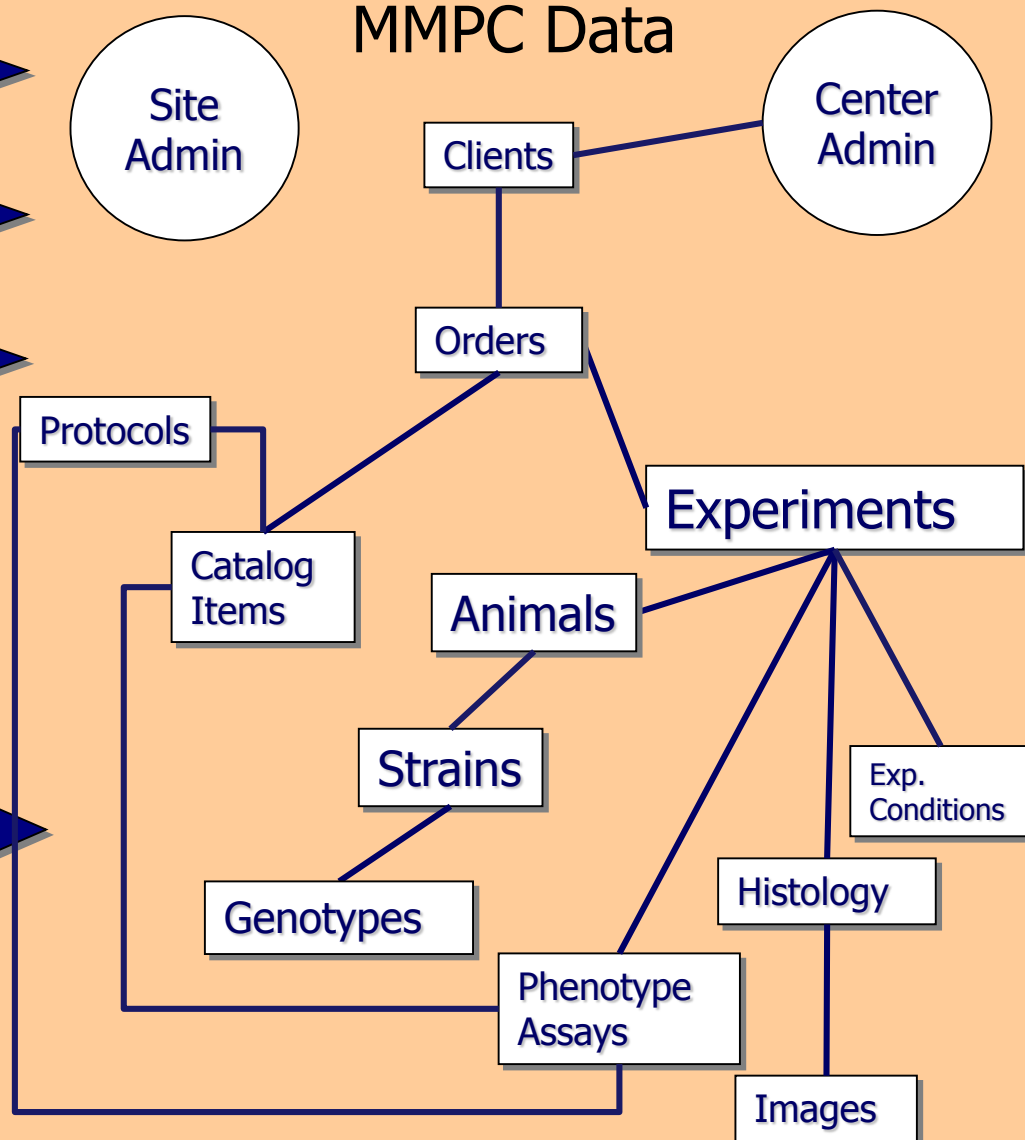
Member Administration
data ownership
application privileges

Meetings & Travel

Security Roles

Security Context

MMPC Data



MMPC Data Objects



Histology

- Images can be attached to animals and measurements in experiments

Animal ID
Strain
Sex

Histology-specific attributes

- Tissue source
- Age @ necropsy
- Gross/microscopic description
- Staining protocol
- Sectioning protocol

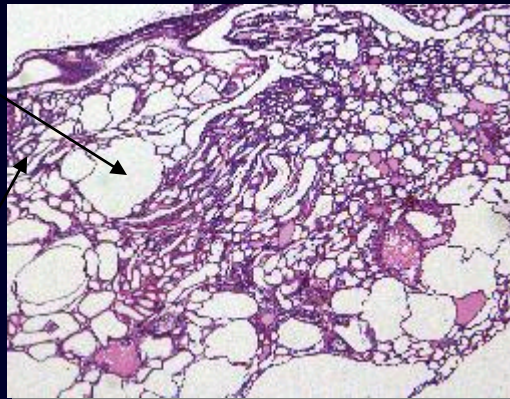


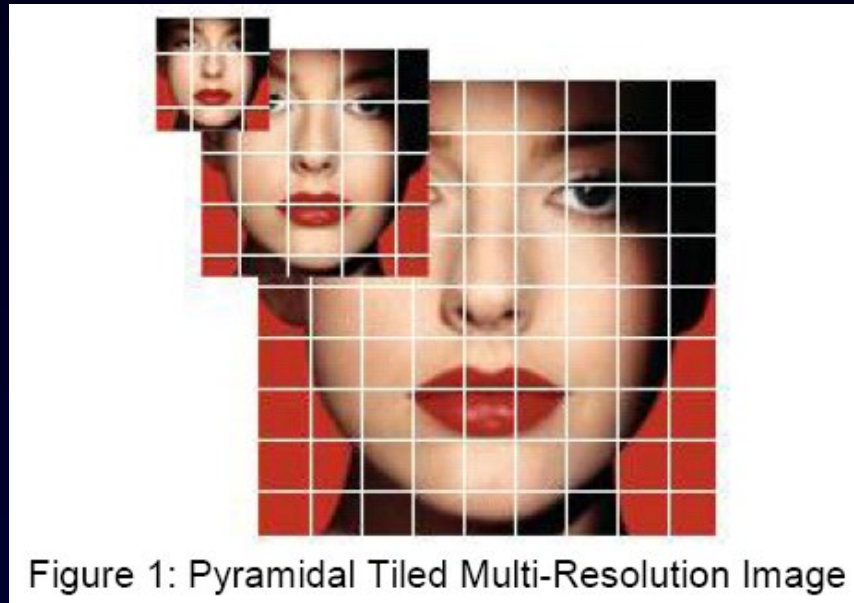
Image attributes

- Magnification
- Imaging Protocol
- Format (JPEG, TIFF, etc.)
- Acquisition method (scan of print, digitized)
- Acquisition date

Histology

We use a product called Zoomify to prepare and serve image data via an HTTP connection

The Zoomify compressed file is pyramidal, that is, like a pyramid, stacked from a thumbnail down to the highest resolution, level upon level.



Histology: 11 records in system.

MMPC :: Image Viewer - Mozilla Firefox

Georgia Regents University (US) <https://www.mmpc.org/omb/Zoomify/ShowImage.aspx?id=295>

Menu
File

NavWindow

Toolbar
ZAS XML file loaded.

Annotations

ADD EDIT

POI

GO

November 14, 2002 12:25 PM
Anonymous

ADD EDIT

Note

November 14, 2002 12:25 PM
Anonymous

Label

GO

List all ☐

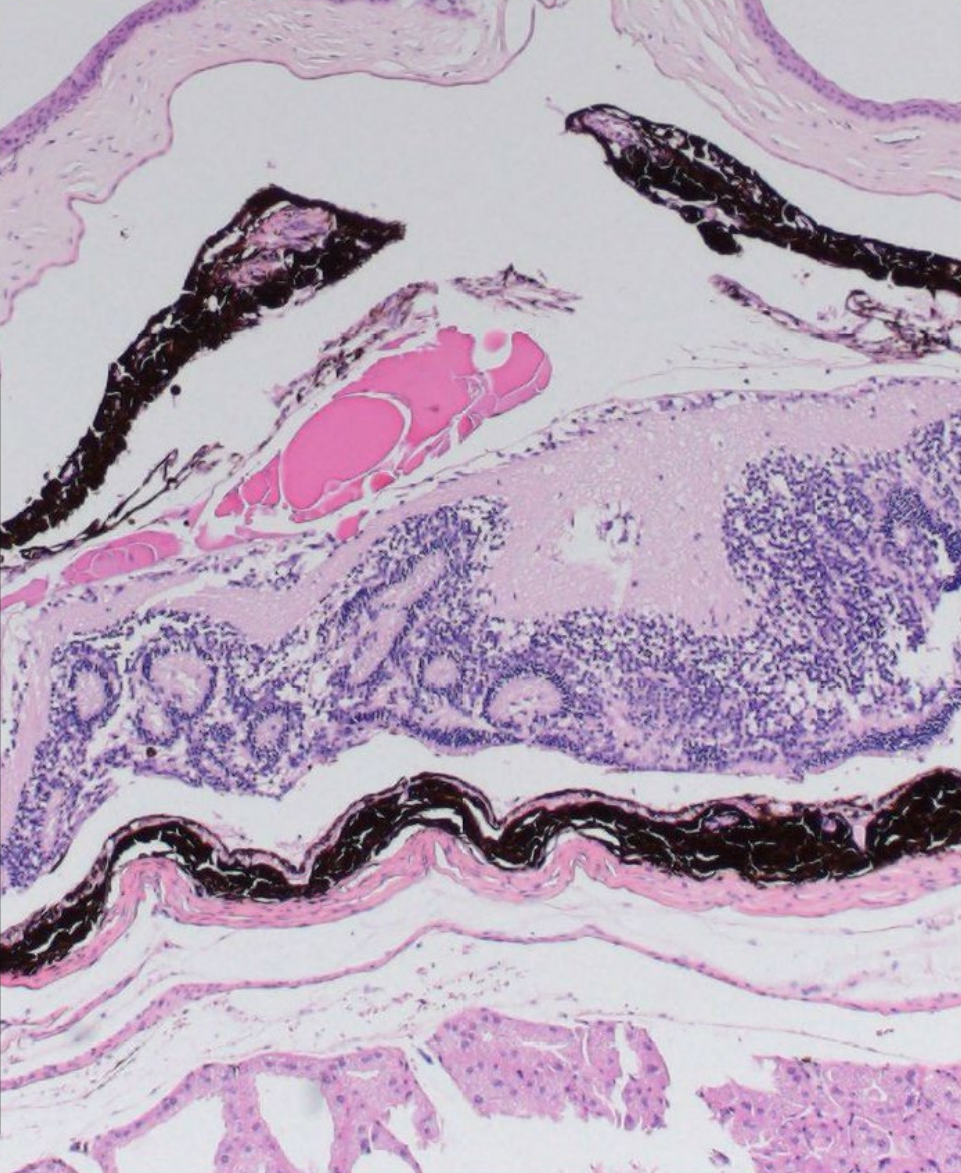
ICON:

URL:

TEXT: ☐ BACKGROUND: ☐

November 14, 2002 12:25 PM
Anonymous

MMPC National Mouse Metabolic Phenotyping Centers



The image displays a histological section of tissue, likely from a mouse, stained with hematoxylin and eosin (H&E). The tissue shows various cellular structures, including what appears to be a large, pink-stained area that could be a blood vessel or a large cell cluster. The surrounding tissue is stained purple, indicating the presence of nuclei. The image is viewed through a web browser window titled 'MMPC :: Image Viewer - Mozilla Firefox'. The browser address bar shows the URL 'https://www.mmpc.org/omb/Zoomify/ShowImage.aspx?id=295'. On the left side of the browser window, there is a sidebar with a 'Menu' dropdown set to 'File', a 'NavWindow' showing a thumbnail of the current image, a 'Toolbar' with navigation icons, and an 'Annotations' panel. The 'Annotations' panel contains a list of annotations, with the first one dated 'November 14, 2002 12:25 PM' by 'Anonymous'. The sidebar also includes a 'Home' button and a 'Profile' link. The MMPC logo is visible in the top left corner of the sidebar.

- Strain
- Basic Information
- Cre
- Genotype
-
- Phenotype
-

Strain

▸ Strains ▸ Add Strain ▸ New Strain Copy ▸ Edit Strain

B6.129P2-Apoe^{tm1Unc} Eif2ak2^{tm1Jcbe}

SUMMARY		DATA SUMMARY	
Official Name	B6.129P2-Apoe ^{tm1Unc} Eif2ak2 ^{tm1Jcbe}	TYPE	COUNT
Common Name	B6.129P2-Apoe ^{tm1Unc} Eif2ak2 ^{tm1Jcbe}	Investigators	1
Description	Mice homozygous for the Apoe mutation show a marked increase in total plasma cholesterol levels that are unaffected by age or gender. Fatty streaks in the proximal aorta are found at three months of age. The lesions increase with age and progress to lesions with less lipid but more elongated cells, typical of a more advanced stage of pre-atherosclerotic lesion. Mice homozygous for disruptions in the Eif2ak2 gene display altered susceptibility to viral infection.	Genomics - Modifications	2
		Experiments	2
Development Status	Phenotyping ongoing		
Creation Method	knockout		
Background	C57BL/6		

INVESTIGATORS

NAME	INSTITUTION
Gokhan Hotamisligil	Harvard School of Public Health

GENOMIC INFORMATION

modification		transgene		segments
GENE	ALLELE 1	ALLELE 2	PROTOCOL	
Apoe	knockout	knockout	Not Specified	
Eif2ak2	knockout	knockout	Not Specified	

EXPERIMENTS

INVESTIGATOR	EXPERIMENT	STATUS	MEASUREMENT COUNT
Gokhan Hotamisligil	Lipoprotein fractionation of ApoE,Eif2ak2 DKO on WD / MGHSPH0815	Completed	80
Gokhan Hotamisligil	Lipoprotein fractionation of ApoE-/- on WD (12109) / MGHSPH0615(2)	Completed	176

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<https://www2.jax.org/nomenclature-tutorial/>



Edit Phenotype Assay

► Phenotype Assays ► View Phenotype Assay ► Add Phenotype Assay ► Assay Categorical Values

Fields with an asterisk (*) are required.

Name	<input type="text" value="time in platform/border zone"/>
Abbreviation	<input type="text" value="time in zone"/>
Categorical?	<input type="checkbox"/>
Units	<input type="text" value="time: second (sec)"/>
Range	<input type="text" value="0"/> to <input type="text" value="90"/> (Min. to Max. value allowed.)
Description	<div>Length of time spent in platform quadrant or adjacent (border) zone. Used as an indicator of cognitive function by assess learning, memory, and spatial working memory.</div>
Protocol	<input type="text" value="UC Davis - Morris Water Maze (ver: 1)"/>
Tissues	<div>Begin typing to search for keyword and add it to the list. <input type="text"/> <input type="button" value="Remove"/> <input type="button" value="Clear"/></div>
* Consortium	<input type="checkbox"/> DiaComp <input type="checkbox"/> DiaComp Individual PI Data <input checked="" type="checkbox"/> MMPC

GROUPS AVAILABLE

albuminuria assays
basic vital measurements
behavioral assessment of sensation
body composition
cardiac function assays
cardiac morphology assays
cardiovascular
diabetes evaluation assays
electrophysiology assays
energy balance & exercise
energy expenditure
enzymes
experimental parameters
food intake
glomerular filtration rate assays
glucose & insulin metabolism
histology assays
hormones/cytokines

Add Selected >>>


Add All >>>

<<< Remove Selected

<<< Remove All

GROUPS SELECTED

cognitive function

Need a new Group? 

[Back to Top](#)



Experiments

- Can be associated with orders
- All data uploaded to system is associated with an experiment.
- Very flexible and easy to create
- Identified by title and description unique to the client
- Optionally assigned “experimental conditions”
- Specification of animals used
 - Strain, Sex, Unique ID
- Specification of samples
 - Unique Animal ID (client specific)
 - Animal age when sample was obtained
 - Associated experimental conditions



Experiments

1. Each order can have one or more experiments associated for data collection.
2. MMPC Policy: Data uploaded to the system is released to the public if either:
 1. The data is published
 2. The data has been in the system for two years.
3. An experiment can have one or more documents attached. This can be used for delivery of results to the client.

Investigation of systemic loss of bone mass following bone fracture in young mice- DEXA analysis with baseline and 3 timepoints post-fracture

SUMMARY		DATA SUMMARY	
Investigator	Christiansen, Blaine	Type	Count
Description	Using Wild type C57BL/6 mice, the goal of the research is to investigate systemic loss of bone mass following bone fracture in mice. Using DEXA, bone loss and activity levels will be monitored in control and bone-fractured mice. Systemic bone loss and voluntary activity levels in mice will be examined at	Animals	24
		Experimental Conditions	3
		Catalog Items	1
			2
Status			7
Public			1064
Animal			0
Flags			0
PhenS			5
			8

Compose Email

To:	bchristiansen@ucdavis.edu
From:	rmcindoe@augusta.edu
Subject:	Data for 'Investigation of systemic loss of bone mass following bone fracture in

Dear Dr. Christiansen:

The University of California Davis MMPC has completed your requested MMPC Order (#18471) for test(s):

Center Core: Body Composition, Thermoregulation, and Food Intake Behavior Core

1. D4001: Gross Body Composition

You can download the data and associated documents using the links provided below. Please note you will need to log into the MMPC web site in order to retrieve your files.

- Christiansen DEXA data report [FINAL].pdf
- 2 way RM ANOVA summary table w Tukey -effect of time within surgical group.xlsx
- 2 way RM ANOVA summary table w Tukey-effect of surgical intervention at each time point.xlsx
- All cohorts-basic data.xlsx
- Christiansen DEXA RM ANOVA- ALL cohorts- all multiple comparisons- exclude UNM.pzfx

[enter custom text here]

If you have any questions or need help, please contact me at your earliest convenience.

Thank you for using the University of California Davis MMPC.

Kind regards,

Richard McIndoe
Augusta University
Center for Biotechnology and Genomic Medicine
1120 15th Street, CA4124
Augusta, GA 30912
Phone: (706) 721-3542
Email: rmcindoe@augusta.edu

Close Popup Send Email

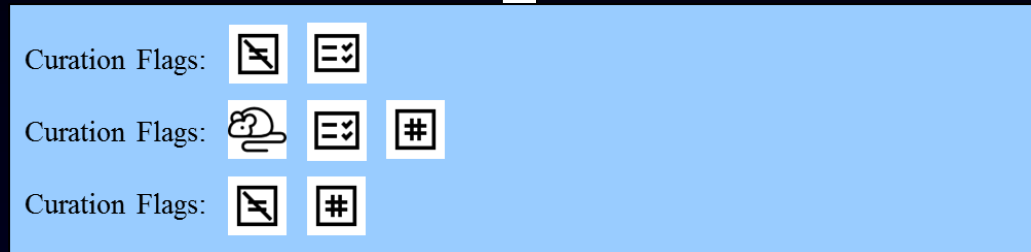
+	Send Client Data
Filename	
Experiment: Inv	
<input checked="" type="checkbox"/>	2 way RM group.xlsx
<input checked="" type="checkbox"/>	2 way RM at each time
<input checked="" type="checkbox"/>	All cohorts
<input checked="" type="checkbox"/>	Christians
<input checked="" type="checkbox"/>	Christians exclude UN

Options
3 timepoints post-fracture
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

	density	(usually in g/cm*2)) with results generated from Dual-energy X-ray absorptiometry (DXA or DEXA) tests [PMID:12730800] PMID:17481978]	results
MP:0014143	decreased body fat mass	decreased physical bulk or volume of fat in the whole body [MGI:csmith]	MMPC Search Results
MP:0020010	decreased bone mineral density of femur	reduction in the quantitative measurement value of mineral content of bone in the long bone of the thigh [http://orcid.org/0000-0001-5208-3432]	MMPC Search Results

Data Curation Workflow

Experiment status set to “Complete” by Center



Database curation record inserted, curation status set



Email sent to Data Curator notifying that data has been uploaded to an experiment. Attaches data template uploaded to the system.



Data Curator begins review of data uploaded to system and uses workflow to keep track of status and interact with Center personnel.

Data Curation

Automated Script



Experiments that have only 'experiment' or only 'control' animals.



Experiments where the strains are the same for the 'experiment' and 'control' animals.



Experiments where all the metadata fields for the 'experiment' and 'control' animals are the same.



Experiments where the number of animals in the order is different from the number of animals in the experiment.



Experiments where no data was uploaded.



Experiments where the 'Experimental Group' condition has been removed.

Manual Curation Flags



- Strain nomenclature is not consistent with the order
 1. the title or description states that KO mice were used but the only strain listed is C57BL/6



- Mice/samples metadata not consistent between experiment/control
 1. This happens where the data shows a clear control with experimental conditions different from those of the experiment subjects, but the labels appear to be different between mice.



- Drug administration is not consistent with the order
 1. the order states drug A but drug B was used
 2. the title or description states that a drug was administered, but there is no experimental condition for this in the data



- Mouse diet not consistent with the order
 1. order requested HFD vs. regular chow, but only one diet appears in the experimental conditions



- Description of experiment field is blank



- Experimental conditions should be added to delineate between control and experiment

Experiment status set to “Complete” by Center



Curation status set to ‘Curation Complete’



MMPC Semi-Automated Interface



Status=‘Analysis Generated’

Model Outputs Stored:
e.g. effect size

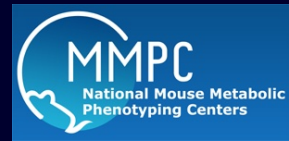
Status=‘Analysis Complete’

Results reviewed by biostatistician

Status=‘Analysis Verified’



Mammalian Phenotype
(MP) Ontologies Stored



$$depVariable \sim Genotype + Sex + Genotype * Sex \quad (Eq1)$$

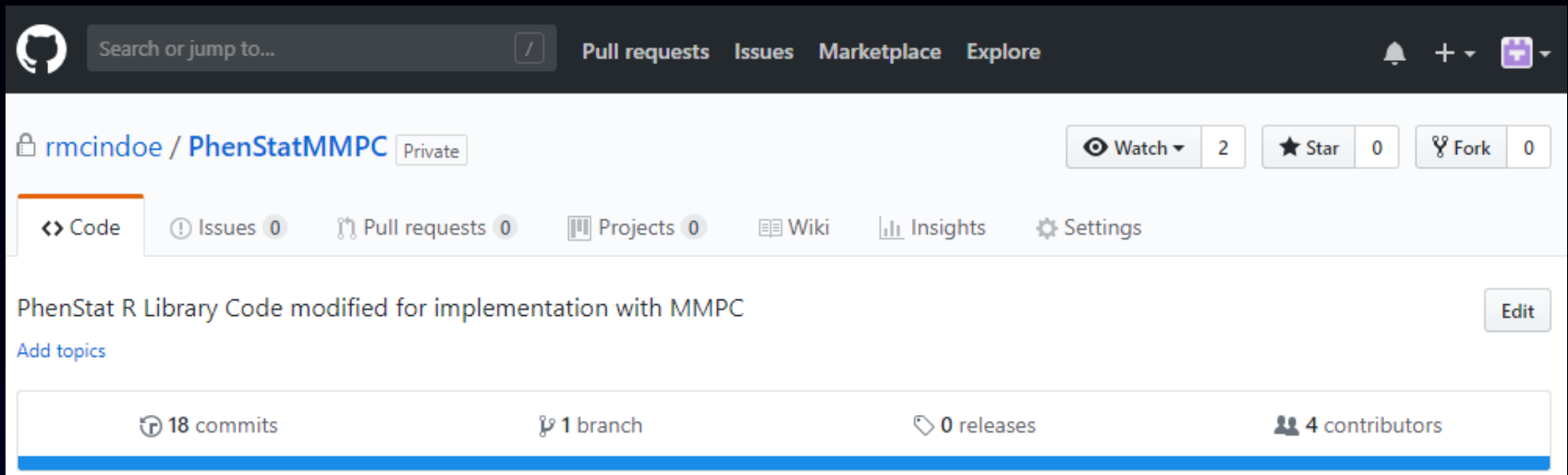
$$depVariable \sim Genotype + Sex + Genotype * Sex + Weight \quad (Eq2)$$

$$depVariable \sim Genotype + Sex + Genotype * Sex + Batch \quad (Eq3)$$

$$depVariable \sim Genotype + Sex + Genotype * Sex + Weight + Batch \quad (Eq4)$$

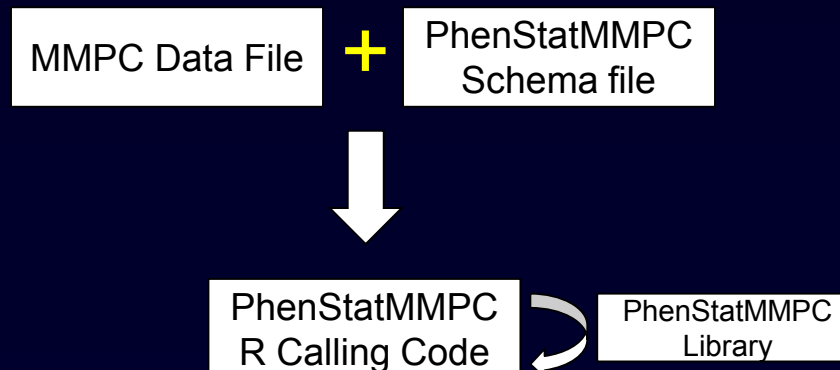
The MMPC Data is much more complicated and required us to modify the PhenStat library to accommodate the differences by including more covariates and interactions since they could be potential confounders (e.g. mouse diet, drug dosage, surgical procedure, etc.).

Modified libraries “completed”, will be available via GitHub



Constantly testing PhenStatMMPC on current data sets.

Can successfully analyze ~95% of the data sets.





PhenStatMMPC

1. Handles more than one covariate
2. Handles time course data
3. Handles more than two mouse strains
4. Handles batch effects
5. Confirmed PhenStatMMPC results using SAS.

Experiment

[Experiments](#) ▸ [Edit Experiment](#) ▸ [View Order](#) ▸ [Download Template](#) ▸ [Upload Data](#) ▸ [Browse Data](#)

Energy expenditure in B6;Adipocyte Cre+ IL6f/f & B6;Adipocyte Cre+JNK1f/fJNK2f/f / MRDUMASS1015

SUMMARY		DATA SUMMARY	
Investigator	Davis, Roger J.	Type	Count
Description	The role of adipocyte JNK1 and JNK2 on obesity-induced insulin resistance Applicable research area(s): Diabetes	Animals	48
Status	Completed	Experimental Conditions	2
Public Release	2/15/2018	Catalog Items	3
Animal Age	Measured In: week(s) post-natal (w)	Curation Info (# flags)	2
Flags		Phenotype Assays	4
DATA SUBMISSION  CONTINUE		Measurements	192
Add / Edit Animals Add / Edit Experimental Conditions Add / Edit Catalog Items Add / Edit Phenotype Assays Add / Edit Publications Add / Edit Histology Download Template Upload Data Upload Document Delete Measurements			0
			0
			3

DATA ANALYSIS

▸ [Browse Data](#)

▸ **DOWNLOAD ALL DATA (.csv)**

PhenStat 



ANIMALS

[Add / Edit](#)

STRAIN NAME	COMMON NAME	FEMALES	MALES	UNKNOWN
C57BL/6J-Tg(Adipoq-Cre)	C57BL/6J-Tg(Adipoq-Cre)	0	16	0
C57BL/6-Il6 ^{tm1Rjd} Tg(Adipoq-Cre)	C57BL/6-Il6 ^{tm1Rjd} Tg(Adipoq-Cre)	0	16	0

PhenStat Analysis Content

Experiments ▸ View Experiment ▸ Browse Data ▸ View All PhenStat Results

Select Model Type:

Mixed Model (MM) ▾

Select Grouping Variable:

- ☐ Experimental Group
☒ Strain

Select Control Strain:

C57BL/6-Il6<tm1Rjd> Tg(Adipoq-Cre)
C57BL/6J-Mapk8<tm1Rjd> Mapk9<tm1.
C57BL/6J-Tg(Adipoq-Cre) ▾

Select Experimental Strain:

C57BL/6-Il6<tm1Rjd> Tg(Adipoq-Cre)
C57BL/6J-Mapk8<tm1Rjd> Mapk9<tm1.
C57BL/6J-Tg(Adipoq-Cre) ▾

Select Assays:

EXPERIMENT ASSAYS

Add Selected >>>

Add All >>>

<<< Remove Selected

<<< Remove All

View Experiment Data:



PHENSTAT ASSAYS

body water free (g) ▾
fat body mass (g)
lean body mass (g)
total body weight (g) ▾

~ Optional Items ~

Select Batch:

[No Values Available] ▾

Select Weight:

[Any] ▾

Select Covariates:

- ☐ Experimental Group ☒ Mouse Diet

Add to Pipeline

Perform Analysis

Reset

PHENSTAT RESULTS

View

No phenstat results found.

Back to Top

PhenStat Results

[Data Search](#) [View Experiment](#) [Browse Data](#) [Edit Analysis](#) [Run New Analysis](#) [View All PhenStat Results](#)

Energy expenditure in B6;Adipocyte Cre+ IL6f/f & B6;Adipocyte Cre+JNK1f/f / MRDUMASS1015

Vector Output (count): 36

Classification Tag

If phenotype is significant it is for the one sex tested

Transformation

lambda=NA
scaleShift=NA
transformed=FALSE
code=0

Status

Analysis Generated

Output File: Schema: Data file:

CSV CSV CSV

Status: Analysis Generated

Back Next To accept all assay results (including errors when applicable) update the analysis

body water, free (g)
fat body mass (g)
lean body mass (g)
total body weight (g)

	Genotype	Exp Group
A	C57BL/6-lig ^{tm1Rjd} Tg(Adipoq-Cre)	Control
B	C57BL/6-lig ^{tm1Rjd} Tg(Adipoq-Cre)	Experiment
C	C57BL/6-J-MapK8 ^{tm1Rjd} MapK9 ^{tm1Rjd} Tg(Adipoq-Cre)	Experiment
D	C57BL/6-J-Tg(Adipoq-Cre)	Experiment
E	C57BL/6-J-MapK8 ^{tm1Rjd} MapK9 ^{tm1Rjd} Tg(Adipoq-Cre)	Control
F	C57BL/6-J-Tg(Adipoq-Cre)	Control

A vs. B A vs. C A vs. D E vs. B E vs. C

C57BL/6-lig^{tm1Rjd} Tg(Adipoq-Cre)
C57BL/6-lig^{tm1Rjd} Tg(Adipoq-Cre)

Accept Assay Result

Dependent Variable: body water, free (g)

Method: Mixed Model

Batch Included? False

Results	
Percentage Change	Female: NA Male: 9.08%
Contribution	0.0159
Effect Size	1.7382
Standard Error	0.6563
P-Value	0.0201

Covariates	Estimate	Std. Error	P-Value
Sex	NS	NS	NS
Weight	NS	NS	NS
Intercept	18.3375	0.6148	2.338x10 ⁻¹³

Interaction	
Sex FvKO estimate:	NS
Sex FvKO standard error:	NS
Sex FvKO p-Val:	NS
Sex MvKO estimate:	NS
Sex MvKO standard error:	NS
Sex MvKO p-Val:	NS
Interaction Included:	False
Interaction p-val:	NS

Blups test: NS

Rotated residuals normality test: NS

Additional Information:

C57BL/6-lig^{tm1Rjd} Tg(Adipoq-Cre), Male:8

C57BL/6-lig^{tm1Rjd} Tg(Adipoq-Cre), Male:8

variability:1

Formula:body water free (g) ~ Genotype

Back Next Delete

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Investigator	Experiment	Animal	Strain	Sex	Age (week(s) post-natal)	Mouse Diet	Experimental Group	fat body mass (g)	body water free (g)	lean body mass (g)	total body weight (g)
Davis	Energy expenditure in B6;Adipocyte Cre+ IL6f/f & B6;Adipocyte Cre+JNK1f/f / MRDUMASS1015	FVB624	C57BL/6-J-Tg(Adipoq-Cre)	M	8	LabDiet 5P75/5P76	Control	1.275	18.53	20.535	23.6
Davis	Energy expenditure in B6;Adipocyte Cre+ IL6f/f & B6;Adipocyte Cre+JNK1f/f / MRDUMASS1015	FVB621	C57BL/6-J-Tg(Adipoq-Cre)	M	8	LabDiet 5P75/5P76	Control	0.995	16.15	17.89	20.4
Davis	Energy expenditure in B6;Adipocyte Cre+ IL6f/f & B6;Adipocyte Cre+JNK1f/f / MRDUMASS1015	FVB620	C57BL/6-J-Tg(Adipoq-Cre)	M	8	LabDiet 5P75/5P76	Control	0.96	16.965	18.825	21.3
Davis	Energy expenditure in B6;Adipocyte Cre+ IL6f/f & B6;Adipocyte Cre+JNK1f/f / MRDUMASS1015	FVB623	C57BL/6-J-Tg(Adipoq-Cre)	M	8	LabDiet 5P75/5P76	Control	1.61	16.94	18.74	20
Davis	Energy expenditure in B6;Adipocyte Cre+ IL6f/f & B6;Adipocyte Cre+JNK1f/f / MRDUMASS1015	No tag	C57BL/6-J-Tg(Adipoq-Cre)	M	8	LabDiet 5P75/5P76	Control	0.975	16.015	17.725	22.1
Davis	Energy expenditure in B6;Adipocyte Cre+ IL6f/f & B6;Adipocyte Cre+JNK1f/f / MRDUMASS1015	FVB669	C57BL/6-J-Tg(Adipoq-Cre)	M	8	LabDiet 5P75/5P76	Control	0.24	16.545	18.345	20.2
Davis	Energy expenditure in B6;Adipocyte Cre+ IL6f/f & B6;Adipocyte Cre+JNK1f/f / MRDUMASS1015	FVB664	C57BL/6-J-Tg(Adipoq-Cre)	M	8	LabDiet 5P75/5P76	Control	0.595	18.11	20.105	22.3
Davis	Energy expenditure in B6;Adipocyte Cre+ IL6f/f & B6;Adipocyte Cre+JNK1f/f / MRDUMASS1015	FVB667	C57BL/6-J-Tg(Adipoq-Cre)	M	8	LabDiet 5P75/5P76	Control	0.795	18.055	20.025	22.4

Click to CSV image below to Download



Close

Click to download data.

PhenStat Results

[Data Search](#)
[View Experiment](#)
[Browse Data](#)
[Edit Analysis](#)
[Run New Analysis](#)
[View All PhenStat Results](#)

Energy expenditure in B6;Adipocyte Cre+ IL6f/f & B6;Adipocyte Cre+JNK1f/fJNK2f/f / MRDUMASS1015

Vector Output (count):	36
Classification Tag	
if phenotype is significant it is for the one sex tested	
Transformation	
lambda=NA scaleShift=NA transformed=FALSE code=0	
Status	
Analysis Generated	

Output File: Schema: Data file:



Status: [Analysis Generated](#)

[Back](#) [Next](#) To accept all assay results (including errors when applicable) update the status above.

body water, free (g)

	Genotype	Exp Group	Males	Female
A	C57BL/6-Il6 ^{tm1Rjd} Tg(Adipoq-Cre)	Control	8	0
B	C57BL/6-Il6 ^{tm1Rjd} Tg(Adipoq-Cre)	Experiment	8	0
C	C57BL/6-J-Mapk8 ^{tm1Rjd} Mapk9 ^{tm1.1Rjd} Tg(Adipoq-Cre)	Experiment	8	0
D	C57BL/6-J-Tg(Adipoq-Cre)	Experiment	8	0
E	C57BL/6-J-Mapk8 ^{tm1Rjd} Mapk9 ^{tm1.1Rjd} Tg(Adipoq-Cre)	Control	8	0
F	C57BL/6-J-Tg(Adipoq-Cre)	Control	8	0

[A vs. B](#) [A vs. C](#) [A vs. D](#) [E vs. B](#) [E vs. C](#) [E vs. D](#) [F vs. B](#)

C57BL/6-Il6^{tm1Rjd} Tg(Adipoq-Cre)

C57BL/6-Il6^{tm1Rjd} Tg(Adipoq-Cre)

☐ Accept Assay Result

Dependent Variable: body water, free (g)
Method: Mixed Model
Batch Included? False

Results	
Percentage Change	Female: NA Male: 9.08%
Contribution	0.0159
Effect Size	1.7382
Standard Error	0.6563
P-Value	0.0201

Covariates	Estimate	Std. Error	P-Value
Sex	NS	NS	NS
Weight	NS	NS	NS
Intercept	18.3375	0.6148	2.338x10 ⁻¹³

Interaction	
Sex FvKO estimate:	NS
Sex FvKO standard error:	NS
Sex FvKO p-Val:	NS
Sex MvKO estimate:	NS
Sex MvKO standard error:	NS
Sex MvKO p-Val:	NS
Interaction Included:	False
Interaction p-val:	NS

Blups test: NS
Rotated residuals normality test: NS

Additional Information:
C57BL/6-Il6 Tg(Adipoq-Cre)_Male:8
C57BL/6-Il6 Tg(Adipoq-Cre)_Male:8
variability:1
Formula:body water free (g) ~ Genotype

body water, free (g)

fat body mass (g)

lean body mass (g)

total body weight (g)

	Genotype	Exp Group	Males	Females	Unknown	Total	Mean (SD)
A	C57BL/6-Il6 ^{tm1Rjd} Tg(Adipoq-Cre)	Control	8	0	0	8	18.34 (1.74)
B	C57BL/6-Il6 ^{tm1Rjd} Tg(Adipoq-Cre)	Experiment	8	0	0	8	20.08 (0.61)
C	C57BL/6-J-Mapk8 ^{tm1Rjd} Mapk9 ^{tm1.1Rjd} Tg(Adipoq-Cre)	Experiment	8	0	0	8	18.97 (0.57)
D	C57BL/6-J-Tg(Adipoq-Cre)	Experiment	8	0	0	8	19.74 (1.47)
E	C57BL/6-J-Mapk8 ^{tm1Rjd} Mapk9 ^{tm1.1Rjd} Tg(Adipoq-Cre)	Control	8	0	0	8	16.63 (0.7)
F	C57BL/6-J-Tg(Adipoq-Cre)	Control	8	0	0	8	17.16 (0.95)

[A vs. B](#)

[A vs. C](#)

[A vs. D](#)

[E vs. B](#)

[E vs. C](#)

[E vs. D](#)

[F vs. B](#)

[F vs. C](#)

[F vs. D](#)

C57BL/6-Il6^{tm1Rjd} Tg(Adipoq-Cre)

C57BL/6-Il6^{tm1Rjd} Tg(Adipoq-Cre)

☐ Accept Assay Result

Dependent Variable: body water, free (g)

Method: Mixed Model

Batch Included? False

Results	
Percentage Change	Female: NA Male: 9.08%
Contribution	0.0159
Effect Size	1.7382
Standard Error	0.6563
P-Value	0.0201

Covariates	Estimate	Std. Error	P-Value
Sex	NS	NS	NS
Weight	NS	NS	NS
Intercept	18.3375	0.6148	2.338x10 ⁻¹³

Interaction	
Sex FvKO estimate:	NS
Sex FvKO standard error:	NS
Sex FvKO p-Val:	NS

[Back](#) [Next](#) [Delete](#)

[Back to Top](#)

Site Administration

COM

› Create

› View

MEM

› Create

› View

› Update

› Create

› View

› View

Add New Assay / MP Terms

Phenotype Assay

lean body mass

MP Terms

3 items checked

Submit

Cancel

Close Popup

MEMBERS

› Grant / Revoke Group Privileges

› Grant / Revoke Member Privileges

› Add Member Institution

› View Member Directory

CATALOG

› View Catalog

› Add Catalog Item


› View Catalog Groups

› Add Catalog Group

› View / Edit Decision Tree

› Create Catalog / Common Name Associations

ASSAYS AND ONTOLOGIES

 Add Phenotype Assay Group

› View / Edit Ontology Model Types

› Update MP Terms

 Add Assay / MP Terms

EXPERIMENTAL FACTORS

› Create a New Experimental Factor

› View / Edit Experimental Factors

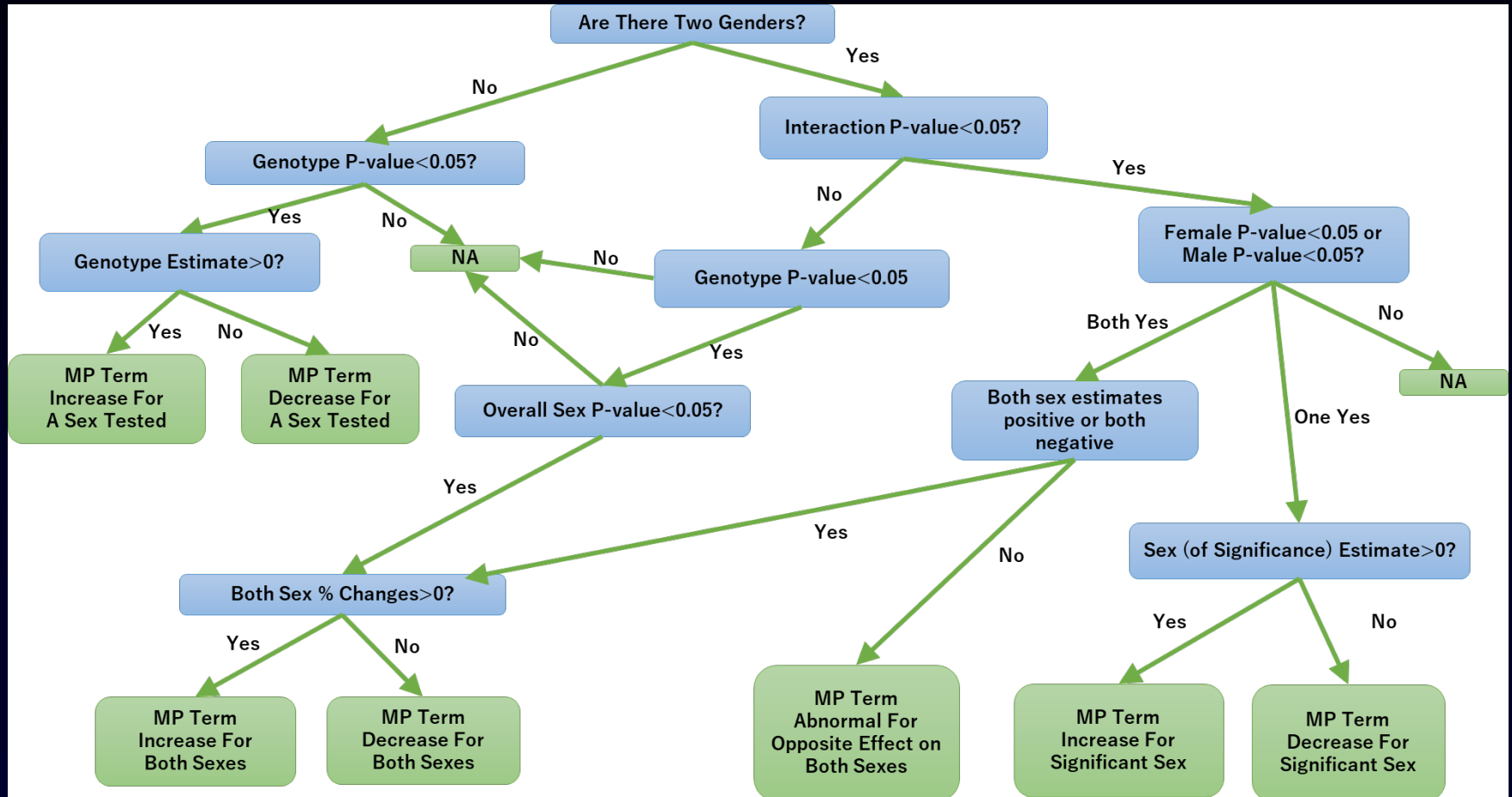
› Create a New Categorical Value

› View / Edit Categorical Values

› Create a New Unit

› View / Edit Units

MP Term Assignment Based on PhenStatMMPC analysis.



MMPC
Data Usage
Policy



Data Search

What would you like to search for? ▼

What would you like to search for?

Gene

Phenotype

Catalog Item



alanine aminotransferase (U/L)

alkaline phosphatase (U/L)

	Genotype	Exp Group	Males	Females	Unknown	Total	Mean (SD)
A	FVB/NJ	Control	12	0	0	12	324.53 (85.31)
B	FVB.129P2-Abcb4 ^{tm1Bor} /J	Experiment	32	0	0	32	425.84 (183.94)

FVB/NJ

FVB.129P2-Abcb4^{tm1Bor}/J

☒ Accept Assay Result

Dependent Variable: alanine aminotransferase (U/L)

Method: Mixed Model

Batch Included? False

Results	
Percentage Change	Female: NA Male: 25.44%
Contribution	0.014
Effect Size	101.3151
Standard Error	40.791
P-Value	0.0171

Covariates	Estimate	Std. Error	P-Value
Sex	NS	NS	NS
Weight	NS	NS	NS
Intercept	324.5292	24.6281	1.631x10 ⁻¹⁶

Interaction	
Sex FvKO estimate:	NS
Sex FvKO standard error:	NS
Sex FvKO p-Val:	NS
Sex MvKO estimate:	NS
Sex MvKO standard error:	NS
Sex MvKO p-Val:	NS
Interaction included:	False
Interaction p-val:	NS

Blups test: NS

Rotated residuals normality test: NS

MMPC
Data Usage
Policy



Data Search

Catalog Item

D4007: Energy Expenditure (CLAMS, Indirect Calorimet

SEARCH

RESET

Filter Search Results By:

Genes

Search Phenotypes

Strains		Phenotype Assay	Values		MP Terms
Genotype 1	Genotype 2	Name	P-Value	Effect Size	
Analysis of energy expenditure and core temperature during temperature challenge in a model of malignant hyperthermia LINKS: PhenStat URL Experiment URL					
C57BL/6	B6.Cg-Ryr1 ^{tm2.1Alle/+}	temperature, body	.0014	.6001	MP:0005533 - increased body temperature
Assessment of energy expenditure of dominant negative SNAP25 mutant mice. LINKS: PhenStat URL Experiment URL					
C3H/HeH	C3.Cg-Snap25Bdr	body mass	.0006	-1.319x10 ¹	MP:0001262 - decreased body weight
C3H/HeH	C3.Cg-Snap25Bdr	carbon dioxide production	.0041	757.8047	
C3H/HeH	C3.Cg-Snap25Bdr	carbon dioxide production Dark Period	.0011	862.2531	MP:0005459 - decreased
					MP:0008963 - increased
					MP:0010025 - decreased total
					MP:0001260 - decreased body weight
					MP:0001262 - decreased body weight
					MP:0003960 - increased lean body mass

EXPERIMENTAL FACTORS	
Name / Abbreviation	Description



Data Search

Phenotype

MP:0003960 - increased lean body mass

SEARCH RESET

Filter Search Results By:

Genes

Search Catalog

MP:0014143 - decreased body fat mass

✕ [MP:0014143 - decreased body fat mass](#)

Results	
Percentage Change	Female: NA Male: -140.61%
Contribution	3.826x10 ⁻⁵
Effect Size	-10.45
Standard Error	1.1939
P-Value	5.313x10 ⁻⁶

Covariates	Estimate	Std. Error	P-Value
Sex	NS	NS	NS
Weight	NS	NS	NS
Intercept	12.6567	1.1715	7.793x10 ⁻⁷

C57BL/6

90 -
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43 -
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Future work:

1. Continue to improve database search interfaces as well as develop Use Cases for an interface tutorial.
2. Develop a PhenoDigm framework (Monarch Initiative) to associate animal models with human diseases using curated annotations (Mungall et al. Database 2013)
3. Continue RRID integration as part of web portal and work with dkNET to integrate MMPC data into dkNET.

If you have any problems, questions or concerns don't hesitate to email us. Use any of the following addresses:

Web portal / Database:

miaufiero@augusta.edu (Michael Aufiero)

Network administration:

dguesela@augusta.edu (Danilo Guesela)

Bioinformatics:

assharma@augusta.edu (Ashok Sharma, Ph.D.)

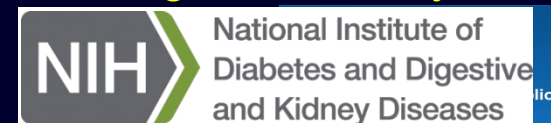
Biostatistician:

hxu@augusta.edu (Nathan Xu, Ph.D.)

Administration


sagross@augusta.edu (Sarah Gross)











Funding Provided by:



Experiments




Welcome to the MMPC Experiment search page. You may select from the list of centers, investigators, or statuses below then click on the Search button.







 Click here to close / hide filter...

Center	University of California Davis
Order #	
Experiment ID	
Investigator	[Any]
Status	Completed
SubContract	[Any]
Flags	<input type="checkbox"/>      <input type="checkbox"/> AND / Together?      <input type="checkbox"/> No Flags


- ☐ Limit to experiments with publicly released data
- ☒ Exclude Alumni MMPCs
- ☒ Exclude Experiments with data that will never be released

Display Stats

Options:  View  Edit  Download Template  Upload Data

Dynamic Flags:      

Manual Flags:     






















Circulating glucose, insulin, and estradiol levels in Ldlr KO mice fed high fat diet

New comment to be added:

☐ Flag Active?

[2/21/2019 - Faminova]Control and experiment mice are the same strain but were fed different diets.

Drag a column header and drop it here to group by that column							
Order	Investigator	Experiment	Status	Data Release Date	Measurements	Flags	Options
25879	Amparo Villablanca	Circulating glucose, insulin, and estradiol levels in Ldlr KO mice fed high fat diet	Completed	1/10/2021	36		   
25850	Jin Shengkan	Circulating insulin and HbA1c levels in Lepr KO mice treated with derivatives of niclosamide	Completed	1/10/2021	38		   
25861	Manuel Navedo	Circulating lipid, glucose, insulin and HbA1c levels in AC5 KO mice fed high fat diet	Completed	1/10/2021	168		   
22504	Trina Knotts	Liver TG levels in Lep KO mice treated with anitbiotics	Completed	1/10/2021	98		   

SUMMARY

Investigator

Description

Status

Public Release

Animal Age

Flags

Curation

DATA SUMMARY

► Add / Edit

► Add / Edit

► Add / Edit

► Add / Edit

► Add / Edit

► Add / Edit

► Add / Edit

► Download

► Upload Data

► Upload Data

► Delete Measurements

COMPOSE EMAIL

TO: "Knotts, Trina" <taknotts@ucdavis.edu>;mmpc@ucdavis.edu

FROM: "McIndoe, Richard" <rmcindoe@augusta.edu>

SUBJECT: MMPC Data Curation questions for University of California Davis Order #15392

Dear Trina Knotts,

You recently uploaded data for Dr. Knotts for Order #15392 under the experiment entitled "Gut microbiome analysis in wild-type C57BL/6J chow-fed mice: Effect of gut location(biogeography) and sequencing method on microbiota diversity". Upon review of this experiment, we have a question(s) regarding the data that was uploaded. Could you please respond to the following questions and, if appropriate, correct any deficiencies in the data uploaded to the National MMPC website. If you would like to talk with us regarding these questions or discuss how best to make corrections in the system, please email or call at your earliest convenience.

[enter custom text here]

Thank you for your consideration,

Richard McIndoe
Professor
Center for Biotechnology and Genomic Medicine
1120 15th Street, CA4124
Augusta, GA 30912
(706) 721-3542
rmcindoe@augusta.edu

Close Popup










Send Email

D4006-D	Gut Microbiome Analysis	Per mouse fee (minimum of 10 mice): \$207 / \$276 (Internal University of California Fee / All Other Institutions)	bacteria, cecum, feces, microbe, microbiome
---------	-------------------------	--	---

PHENOTYPE ASSAYS Add / Edit

Name	Abbreviation
Age	Age

Send Client Data

	Filename	Author	Type	Options
<input type="checkbox"/>	Experiment: Gut microbiome analysis in wild-type C57BL/6J chow-fed mice: Effect of gut location(biogeography) and sequencing method on microbiota diversity; Type: Data	Knotts, Trina	Data	  
<input checked="" type="checkbox"/>	454- primer comparison- cecum-27F vs S15P.pdf	Knotts, Trina	Data	  
<input checked="" type="checkbox"/>	Pilot study- unifrac- Beta diversity.pdf	Knotts, Trina	Data	  

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