

Interactive Toxicogenomics: Gene Set Discovery, Clustering and Analysis in Toxygates

Nyström-Persson, J., Natsume-Kitatani, Y., Igarashi, Y., Satoh, D., and Mizuguchi, K.

Supplementary Methods

This supplementary document includes the details of the analytical flow in our case study in which the new analytical functions in Toxygates were utilized.

For the figures of heatmap and the interpretation of the obtained results, please refer to the main manuscript. For the general tutorial for Toxygates, please refer to the user guide (<http://toxygates.nibiohn.go.jp/toxygates/toxygatesManual.pdf>)



Toxygates

Toxygates is an integrated platform for toxicogenomics data analysis. For more information, please see [our Bioinformatics paper](#), or use the help menu.

2016-10-20 ("v2.0")

Several major new features have now been released.

- A clustering and heat-map visualisation feature has been added.
- Users may now upload their own data and analyse it alongside existing data in Toxygates.
- KEGG pathways and GO terms are now updated automatically on a weekly basis.

With the addition of user data uploads and clustering/visualisation, Toxygates is now a much more powerful analysis environment than previously, and we urge users to try these functions for themselves.

For more information, please see the [user guide](#), or use the help menu.

[Click here to begin.](#)

① Select rat/in vivo/Liver/Repeat

Tools Help / feedback

Start **Sample groups** View data Comp Ranking Pathologies Sample details My data

Please define at least one sample group to proceed. Start selecting compounds to the left. Then select doses and times.

Data:

Compound

③ Select M dose/4 day

Rat/in vivo/Liver/Repeat/

Low Middle High

All 4 day 8 day 15 day 29 day

WY-14643 3/3 3/3 3/3 3/3 All 4 day 8 day 15 day 29 day 3/3 3/3 3/3 3/3 All

Save group WY-14643_M_4day Save

④ Save

② Select WY-14643

Click to see available lists Save Delete

Edit/paste

Browse

- 1% cholesterol + 0.25% sodium cholate
- 2,4-dinitrophenol
- WY-14643
- acarbose
- acetamide
- acetamidofluorene
- acetaminophen
- asparin
- ajmaline
- allopurinol
- allyl alcohol
- amiodarone
- amitriptyline
- amphotericin B
- aspirin
- azathioprine

Sort by name Select all Unselect all

Active	Group	#Treated samples	#Control samples	Edit	Delete
<input checked="" type="checkbox"/>	WY-14643_M_15day	3	3	Edit	Delete
<input checked="" type="checkbox"/>	WY-14643_M_24hr	3	3	Edit	Delete
<input checked="" type="checkbox"/>	WY-14643_M_29day	3	3	Edit	Delete
<input checked="" type="checkbox"/>	WY-14643_M_3hr	3	3	Edit	Delete
<input checked="" type="checkbox"/>	WY-14643_M_4day	3	3	Edit	Delete
<input checked="" type="checkbox"/>	WY-14643_M_8hr	3	3	Edit	Delete
<input checked="" type="checkbox"/>	WY-14643_M_8day	3	3	Edit	Delete
<input checked="" type="checkbox"/>	WY-14643_M_9hr	3	3	Edit	Delete

⑤ Save the other WY-14643 data as well.

Delete all groups Next: View data **Click**

Observed pathologies as starting point

Tools [Help / feedback](#)

Start **Sample groups** View data Compound ranking **Pathologies** Sample details My data

Please define at least one sample group to proceed. Start by selecting compounds to the list. Then select doses and times.

Data... Rat in vivo Liver Repeat

Compound

Click to see available lists

Edit/paste

Browse

- 1% cholesterol + 0.25% sodium cholate
- 2,4-dinitrophenol
- WY-14643
- acarbose
- acetamide
- acetamidofluorene
- acetaminophen
- acetazolamide
- adapin
- ajmaline
- allopurinol
- allyl alcohol
- amlodarone
- amitriptyline
- amphotericin B
- aspirin
- azathioprine

Rat/in vivo/Liver/Repeat

Low Middle High

All 4 day 8 day 15 day 29 day 4 day 8 day 15 day 29 day 4 day 8 day 15 day 29 day

WY-14643 3/3 3/3 3/3 3/3 All 3/3 3/3 3/3 3/3 All 3/3 3/3 3/3 3/3 All

Save group as

Active	Group	#Treated samples	#Control samples		
<input checked="" type="checkbox"/>	WY-14643_M_15day	3	3	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
<input type="checkbox"/>	WY-14643_M_3hr	3	3	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
<input checked="" type="checkbox"/>	WY-14643_M_29day	3	3	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
<input type="checkbox"/>	WY-14643_M_3hr	3	3	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
<input checked="" type="checkbox"/>	WY-14643_M_4day	3	3	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
<input type="checkbox"/>	WY-14643_M_9hr	3	3	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
<input checked="" type="checkbox"/>	WY-14643_M_8day	3	3	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
<input type="checkbox"/>	WY-14643_M_9hr	3	3	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

Sort by name

② Click

① Select repeat dose data

This is the list of pathologies in the sample groups you have defined. Click on an icon to see detailed sample information.



[WY-14643_M_15day](#) [WY-14643/Middle/15 day](#) [WY-14643_M_29day](#) [WY-14643/Middle/29 day](#) [WY-14643_M_4day](#) [WY-14643/Middle/4 day](#) [WY-14643_M_8day](#) [WY-14643/Middle/8 day](#)

[Pathology terms reference](#)

Group	Sample	Finding	Topography	Grade	Spontaneous	Digital viewer
WY-14643_M_15day	WY-14643/Middle/15 day/undefined	Degeneration, granular, eosinophilic	Hepatocyte	Severe (+++)	false	Viewer
WY-14643_M_15day	WY-14643/Middle/15 day/undefined	Degeneration, granular, eosinophilic	Hepatocyte	Severe (+++)	false	Viewer
WY-14643_M_15day	WY-14643/Middle/15 day/undefined	Degeneration, granular, eosinophilic	Hepatocyte	Severe (+++)	false	Viewer
WY-14643_M_15day	WY-14643/Middle/15 day/undefined	Necrosis	Hepatocyte	Minimal (±)	false	Viewer
WY-14643_M_15day	WY-14643/Middle/15 day/undefined	Hypertrophy	Bile duct, interlobular	Slight (+)	false	Viewer
WY-14643_M_8day	WY-14643/Middle/8 day/undefined	Single cell necrosis	Hepatocyte	Minimal (±)	false	Viewer
WY-14643_M_8day	WY-14643/Middle/8 day/undefined	Degeneration, granular, eosinophilic	Hepatocyte	Severe (+++)	false	Viewer
WY-14643_M_8day	WY-14643/Middle/8 day/undefined	Degeneration, granular, eosinophilic	Hepatocyte	Severe (+++)	false	Viewer
WY-14643_M_8day	WY-14643/Middle/8 day/undefined	Degeneration, granular, eosinophilic	Hepatocyte	Severe (+++)	false	Viewer
WY-14643_M_8day	WY-14643/Middle/8 day/undefined	Hypertrophy	Bile duct, interlobular	Slight (+)	false	Viewer
WY-14643_M_15day	WY-14643/Middle/15 day/undefined	Hypertrophy	Bile duct, interlobular	Minimal (±)	false	Viewer
WY-14643_M_15day	WY-14643/Middle/15 day/undefined	Hypertrophy	Bile duct, interlobular	Minimal (±)	false	Viewer
WY-14643_M_29day	WY-14643/Middle/29 day/undefined	Necrosis	Hepatocyte	Slight (+)	false	Viewer
WY-14643_M_4day	WY-14643/Middle/4 day/undefined	Increased mitosis	Hepatocyte	Slight (+)	false	Viewer
WY-14643_M_4day	WY-14643/Middle/4 day/undefined	Increased mitosis	Hepatocyte	Slight (+)	false	Viewer
WY-14643_M_29day	WY-14643/Middle/29 day/undefined	Hypertrophy	Bile duct, interlobular	Minimal (±)	false	Viewer
WY-14643_M_29day	WY-14643/Middle/29 day/undefined	Degeneration, granular, eosinophilic	Hepatocyte	Severe (+++)	false	Viewer
WY-14643_M_29day	WY-14643/Middle/29 day/undefined	Hypertrophy	Bile duct, interlobular	Slight (+)	false	Viewer
WY-14643_M_29day	WY-14643/Middle/29 day/undefined	Degeneration, granular, eosinophilic	Hepatocyte	Severe (+++)	false	Viewer
WY-14643_M_29day	WY-14643/Middle/29 day/undefined	Hypertrophy	Bile duct, interlobular	Slight (+)	false	Viewer
WY-14643_M_29day	WY-14643/Middle/29 day/undefined	Degeneration, granular, eosinophilic	Hepatocyte	Severe (+++)	false	Viewer

Supplementary Table 1: summary of this table

Cluster analysis

Tools [Help / feedback](#)

Start **Sample groups** | [View data](#) | [Compound ranking](#) | [Pathologies](#) | [Sample details](#) | [My data](#)

Please define at least one sample group to proceed. Start by selecting compounds to the left. Then select doses and times.

Data... [Rat](#) [In vivo](#) [Liver](#) [Repeat](#)

Compound Sample group definition - new group

Edit/paste

Browse

- 1% cholesterol + 0.25% sodium cholate
- 2,4-dinitrophenol
- WY-14643
- acarbose
- acetamide
- acetamidofluorene
- acetaminophen
- acetazolamide
- adapin
- ajmaline
- allopurinol
- allyl alcohol
- amiodarone
- amitriptyline
- amphotericin B
- aspirin
- azathioprine

Rat/in vivo/Liver/Repeat/

Low 4 day 8 day 15 day 29 day

Middle 4 day 8 day 15 day 29 day

High 4 day 8 day 15 day 29 day

WY-14643

3/3 3/3 3/3 3/3 All

3/3 3/3 3/3 3/3 All

3/3 3/3 3/3 3/3 All

Active	Group	#Treated samples	#Control samples		
<input checked="" type="checkbox"/>	WY-14643_M_15day	3	3	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
<input checked="" type="checkbox"/>	WY-14643_M_24hr	3	3	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
<input checked="" type="checkbox"/>	WY-14643_M_29day	3	3	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
<input checked="" type="checkbox"/>	WY-14643_M_3hr	3	3	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
<input checked="" type="checkbox"/>	WY-14643_M_4day	3	3	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
<input checked="" type="checkbox"/>	WY-14643_M_8hr	3	3	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
<input checked="" type="checkbox"/>	WY-14643_M_6day	3	3	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
<input checked="" type="checkbox"/>	WY-14643_M_9hr	3	3	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

① Select all

② Click

Here you can inspect expression values for the sample groups you have defined. Click on column headers to sort data.



In case of M/15 day

① Click this icon

WY-14643_M_15day | WY-14643_M_29day | WY-14643/Middle/29 day | WY-14643_M_3hr | WY-14643/Middle/3 hr

WY-14643_M_4day | WY-14643/Middle/4 day | Show all

Log2 (data change)

1-25 of 31,042

Show More

Use columns All Probes

Gene Symbol	Probe Title	Probe	WY-14643_M_15day	WY-14643_M_29day	WY-14643_M_3hr	WY-14643_M_4day	WY-14643
Aco1	acyl-CoA thioesterase 1	1388250_at	10.307	11.123	10.505	4.058	10.941
Aqp3	aquaporin 3	1387100_at	8.305	(absent)	6.004	(absent)	7.409
LOC100911217	adipogenin-like	1378296_at	6.15	(absent)	6.052	(absent)	5.391
		1384474_at	7.818	4.673	6.932	(absent)	6.184
Chra2	cholinergic receptor - nicotinic - alpha 2 (neuronal)	1387574_at	7.573	2.526	6.721	(absent)	3.357
Hdc	histidine decarboxylase	1370491_a_at	7.257	5.121	7.385	(absent)	7.247
Fabp3	fatty acid binding protein 3 - muscle and heart	1387660_at	6.833	2.382	6.71	(absent)	6.627
RGD1305928	hypothetical LOC300207	1380536_at	6.615	3.226	6.8	(absent)	5.616
Aco1 Aco2	acyl-CoA thioesterase 1	1388211_s_at	6.489	5.552	6.187	2.2	6.76
Fbp2	fructose-1-6-bisphosphatase 2	1388622_at	6.078	3.961	5.799	(absent)	4.471
Abhd3	abhydrolase domain containing 3	1382137_at	5.922	1.266	4.062	(absent)	5.105
		1383757_at	5.757	(absent)	5.399	(absent)	(absent)
Cpt1b	camitine palmitoyltransferase 1b - muscle	1387742_at	5.648	2.503	5.414	(absent)	5.372
Aqp7	aquaporin 7	1388317_at	5.538	1.84	4.887	(absent)	4.852
Spink3	serine peptidase inhibitor - Kazal type 3	1388447_x_at	5.097	1.607	4.123	0.076	1.297
LOC100912489 Scd	acyl-CoA desaturase 2-like	1387668_a_at	4.998	0.038	6.296	-0.322	0.636

Here you can inspect expression values for the sample groups you have defined. Click on column headers to sort data.

WY-14643_M_15day WY-14643_Middle/15 day WY-14643_M_24hr WY-14643/Middle/24 hr WY-14643_M_29day WY-14643/Middle/29 day WY-14643_M_3hr WY-14643/Middle/3 hr

WY-14643_M_4day WY-14643

log2 (fold change)

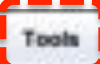
① New pop-up window

② Input 1.5

② Click

Gene Symbol	Probe Title		WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643...
Acot1	acyl-CoA thioesterase 1	1367742_at	50.307	11.523	10.505	4.068	50.941
Aqp3	aquaporin 3	1367100_at	8.390	(absent)	(absent)	(absent)	7.499
LOC100911217	adipogenin-like	1176	(absent)	(absent)	6.932	(absent)	5.391
Chra2	cholinergic receptor - nicotinic - alpha 2 (neuronal)	1194	(absent)	(absent)	6.721	(absent)	3.357
Hdc	histidine decarboxylase	1187	(absent)	(absent)	7.385	(absent)	7.247
Fabp3	fatty acid binding protein 3 - muscle and heart	117C	(absent)	(absent)	6.71	(absent)	6.627
RGD1305928	hypothetical LOC300207	1367096_at	(absent)	(absent)	6.9	(absent)	5.616
Acot1	acyl-CoA thioesterase 1	1366211_x_at	(absent)	5.802	6.187	2.2	6.76
Acot2	acyl-CoA thioesterase 2	136622_at	4.078	3.991	5.790	(absent)	4.471
Fbp2	fructose-1,6-bisphosphatase 2	136622_at	4.078	3.991	5.790	(absent)	4.471
Ashd3	abhydrolase domain containing 3	136622_at	4.078	3.991	5.790	(absent)	4.471
Cpt1b	camitine palmitoyltransferase 1b - muscle	1367742_at	5.648	2.803	5.414	(absent)	5.372
Aqp7	aquaporin 7	1368317_at	5.638	1.84	4.887	(absent)	4.852
Spink3	serine peptidase inhibitor - Kazal type 3	1368447_x_at	5.097	1.887	4.123	0.076	1.297
LOC100912469	acyl-CoA desaturase 2-like	1367668_x_at	4.586	0.038	6.298	-0.322	0.636

② Click



File Gene Sets View **Tools** Help / feedback

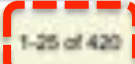
Start | **Sample groups** | **View data** | Compound ranking | Pathologies | Sample details | My data

Here you can inspect expression values for the sample groups you have defined. Click on column headers to sort data.

WY-14643_M_15day .WY-14643/Middle/15 day WY-14643_M_24hr .WY-14643/Middle/24 hr WY-14643_M_29day .WY-14643/Middle/29 day WY-14643_M_3hr .WY-14643/Middle/3 hr

WY-14643_M_4day .WY-14643/Middle/4 day Show all

Log2 (fold change) 1-25 of 420 Show More p-value columns All Probes New Edit



① 420 probes are extracted

Gene Symbol	Probe Title	Probe	WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643...
Aco1	acyl-CoA thioesterase 1	136250_at	10.307	11.123	10.505	4.068	10.941
Aqp3	aquaporin 3	1370298_at	8.95	(absent)	6.052	(absent)	7.499
LOC100911217	adipogenin-like	1384674_at	7.818	4.972	6.932	(absent)	6.184
Chra2	cholinergic receptor - nicotinic - alpha 2 (neuronal)	1387574_at	7.573	2.529	6.721	(absent)	3.357
Hdc	histidine decarboxylase	1370491_a_at	7.257	3.121	7.365	(absent)	7.247
Fabp3	fatty acid binding protein 3 - muscle and heart	1367660_at	6.833	2.382	6.71	(absent)	6.627
RGD1305928	hypothetical LOC300207	1380536_at	6.815	3.226	6.9	(absent)	6.858
Aco1 Aco2	acyl-CoA thioesterase 1	1368211_a_at	6.489	5.262	6.167	2.2	6.76
Fbp2	fructose-1,6-bisphosphatase 2	1368222_at	6.078	3.951	5.798	(absent)	4.471
Abhd3	abhydrolase domain containing 3	1382137_at	5.922	1.298	4.042	(absent)	5.105
		1383757_at	5.757	(absent)	5.389	(absent)	(absent)
Cpt1b	camitine palmitoyltransferase 1b - muscle	1367742_at	5.648	2.853	5.414	(absent)	5.372
Aqp7	aquaporin 7	1368317_at	5.638	1.64	4.667	(absent)	4.852
Spink3	serine peptidase inhibitor - Kazal type 3	1368447_x_at	5.097	1.887	4.123	0.076	1.297
LOC100912489 Scd	acyl-CoA desaturase 2-like	1367668_a_at	4.986	0.036	6.298	-0.322	0.636

Here you can inspect expression

- Compare two sample groups
- Enrichment
- Show heat map
- Show a

WY-14643_M_16day_WY-14643 Middle29 hr WY-14643_M_29day_WY-14643/Middle29 day WY-14643_M_3hr_WY-14643/Middle3 hr

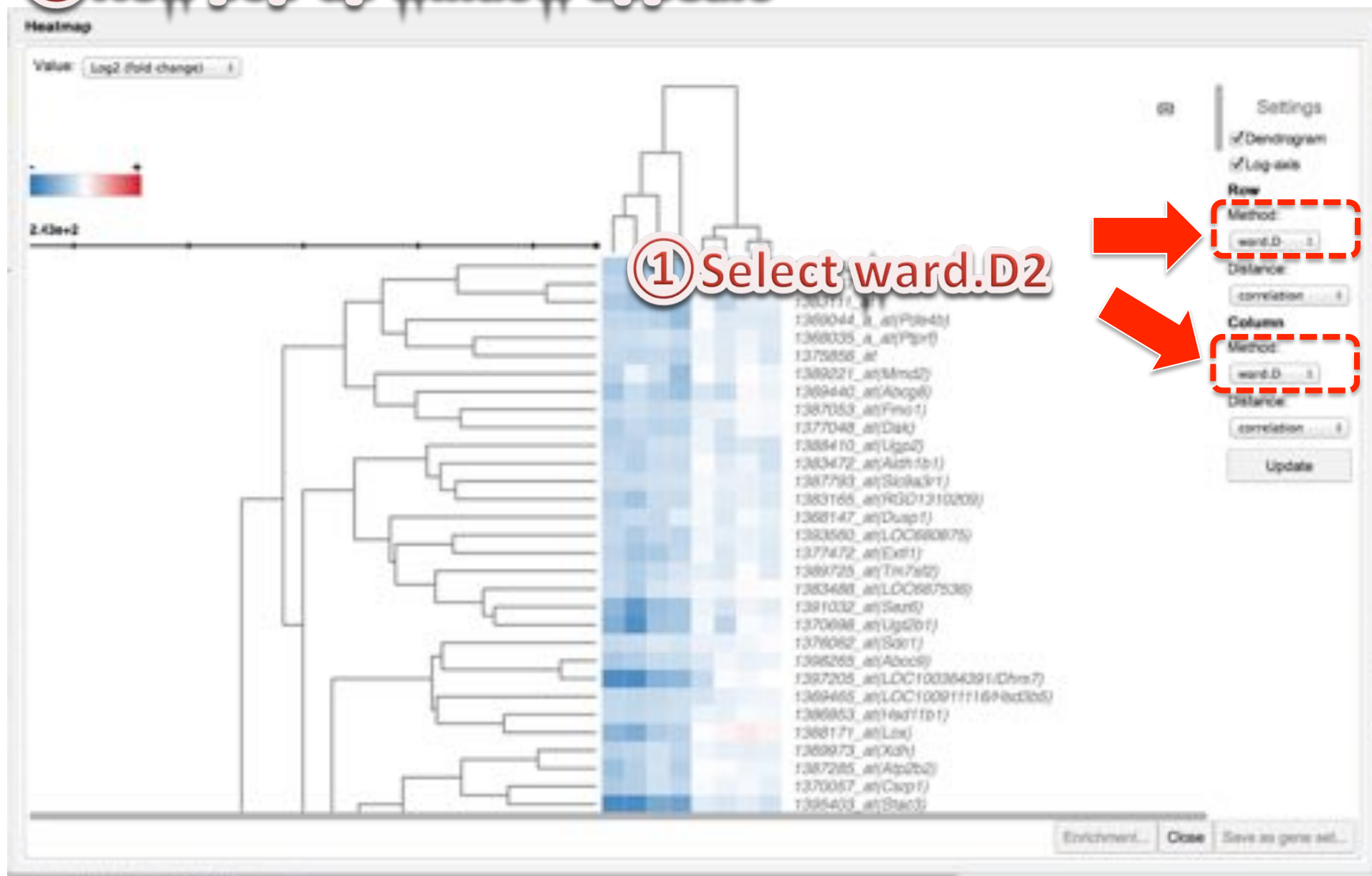
WY-14643_M_4day_WY-14643/Middle4 day

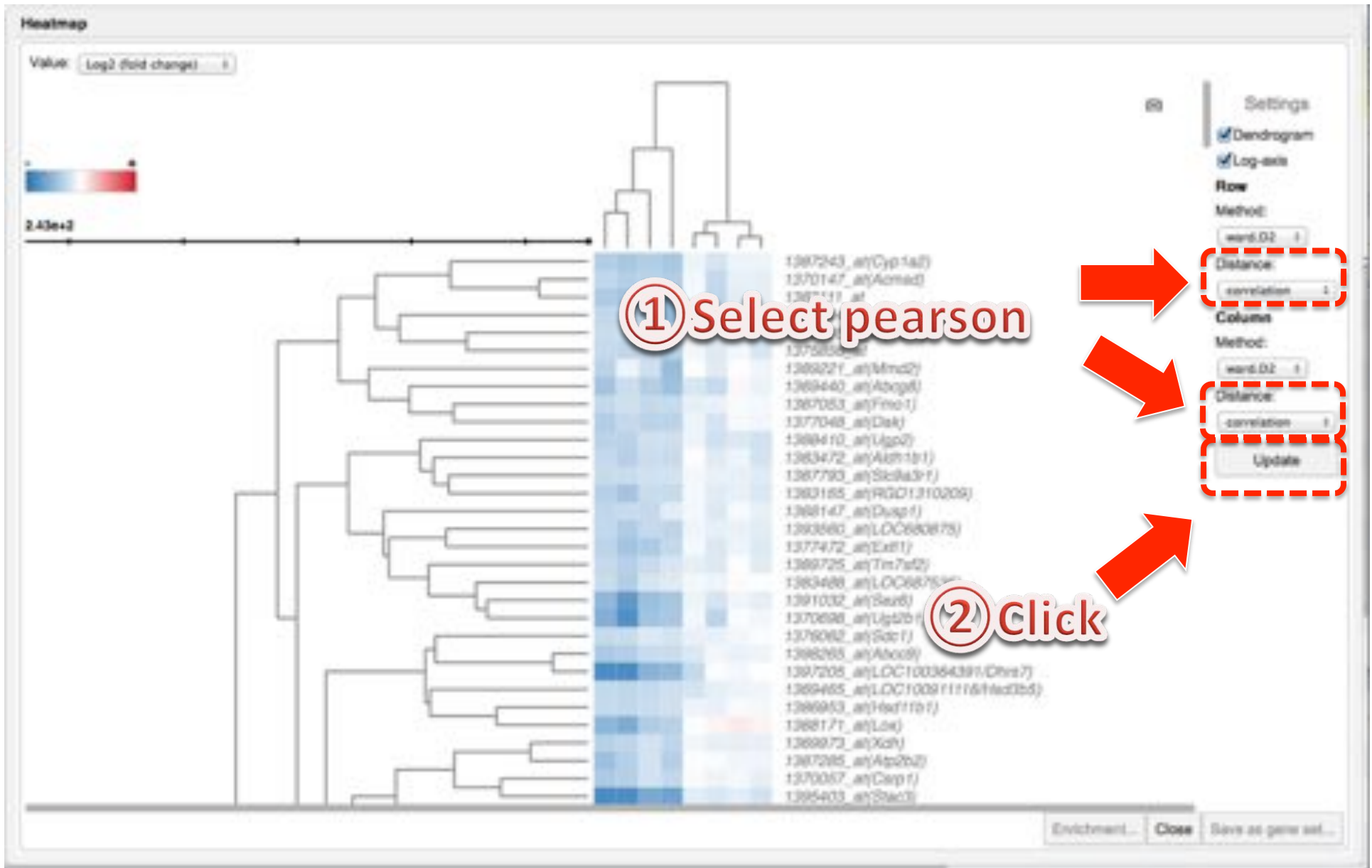
Log2 (fold change) 1 1-25 of 420 All Probes New Edit



Gene Symbol	Probe Title	WY-14643_M_...	WY-14643_M_...	WY-14643_M_...	WY-14643_M_...	WY-14643_M_...
Aco1	acyl-CoA thioesterase 1	1368250_at	10.307	11.123	10.505	4.068
Aqp3	aquaporin 3	1367100_at	8.300	(absent)	6.004	(absent)
LOC100911217	adipogenin-like	1376296_at	8.18	(absent)	6.052	(absent)
		1364474_at	7.818	4.972	6.932	(absent)
Chra2	cholinergic receptor - nicotinic - alpha 2 (neuronal)	1367574_at	7.573	2.529	6.721	(absent)
Hdc	histidine decarboxylase	1370491_a_at	7.257	6.121	7.365	(absent)
Fatp3	fatty acid binding protein 3 - muscle and heart	1367660_at	6.833	2.340	6.71	(absent)
RGD1308928	hypothetical LOC300207	1360536_at	6.615	3.226	6.9	(absent)
Aco1	acyl-CoA thioesterase 1	1368211_a_at	6.489	6.952	6.187	2.2
Aco2						6.76
Fbp2	fructose-1,6-bisphosphatase 2	1368622_at	6.078	3.901	5.799	(absent)
Abhd3	abhydrolase domain containing 3	1362137_at	5.922	1.266	4.042	(absent)
		1363757_at	5.757	(absent)	5.399	(absent)
Cpt1b	camitine palmitoyltransferase 1b - muscle	1367742_at	5.648	2.553	5.414	(absent)
Aqp7	aquaporin 7	1366317_at	5.638	1.84	4.667	(absent)
Spink3	serine peptidase inhibitor - Kazal type 3	1368447_x_at	5.097	1.887	4.123	0.076
LOC100912469	acyl-CoA desaturase 2-like	1367668_a_at	4.986	0.036	6.296	-0.322
Scd						0.638

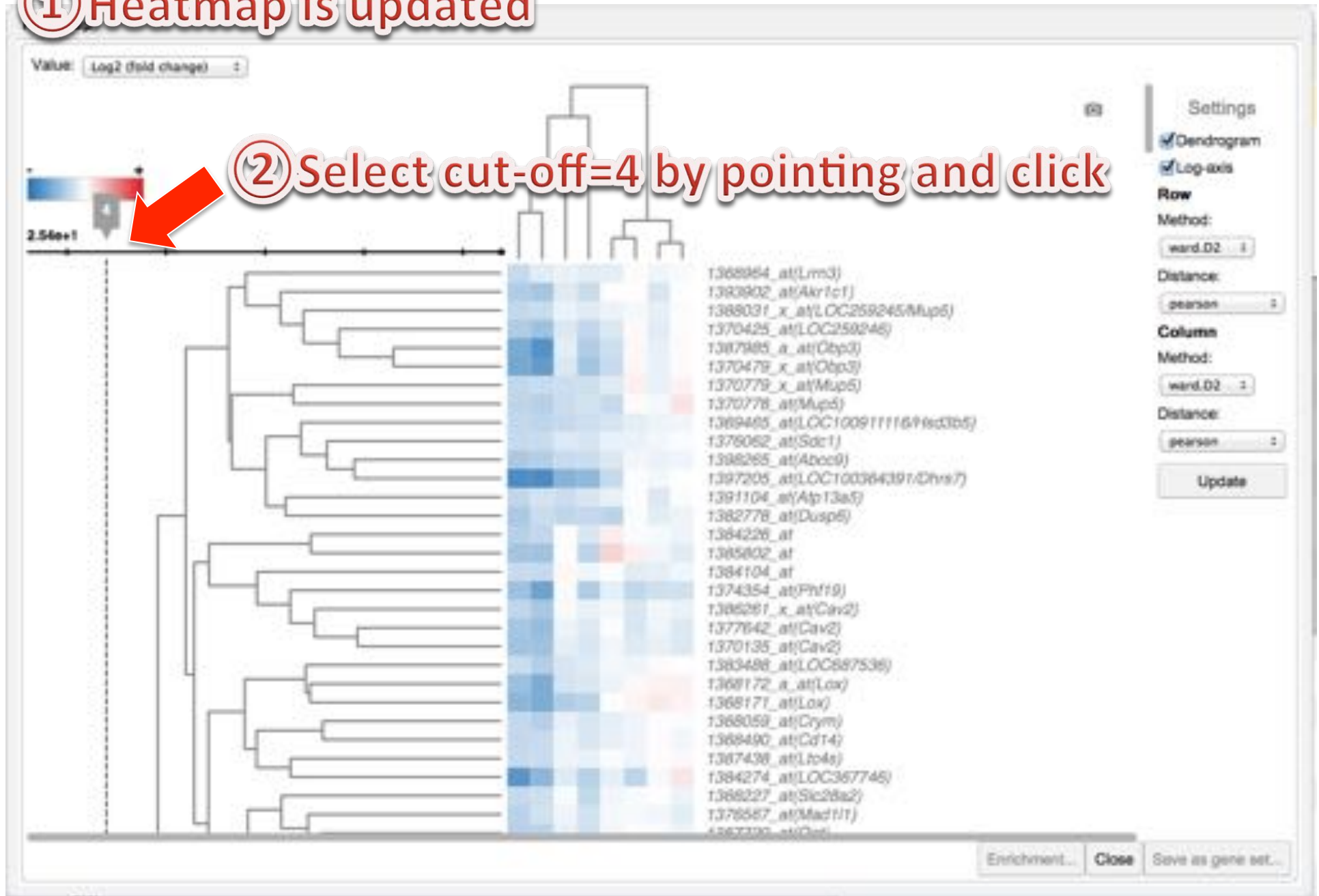
① New pop-up window appears

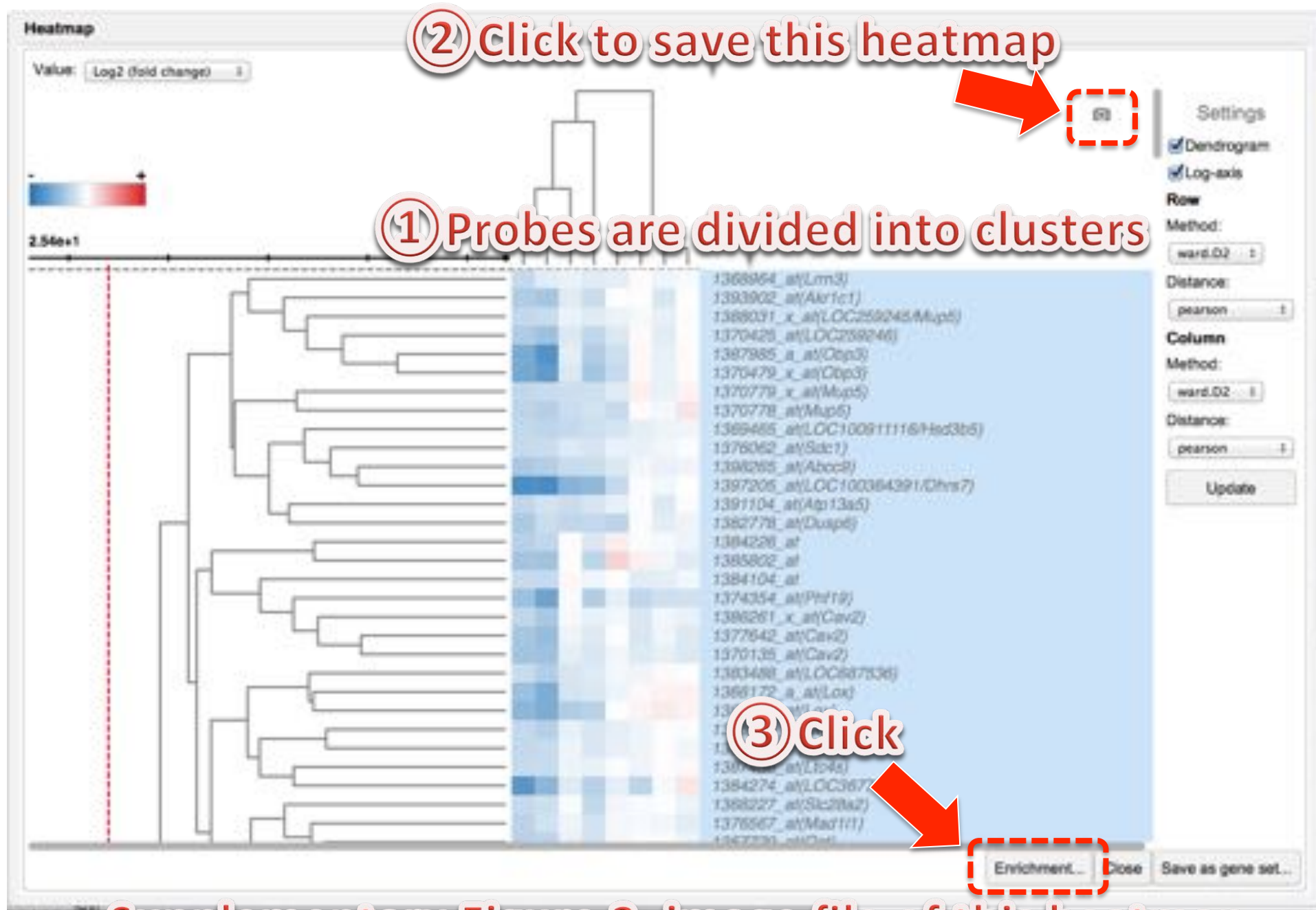




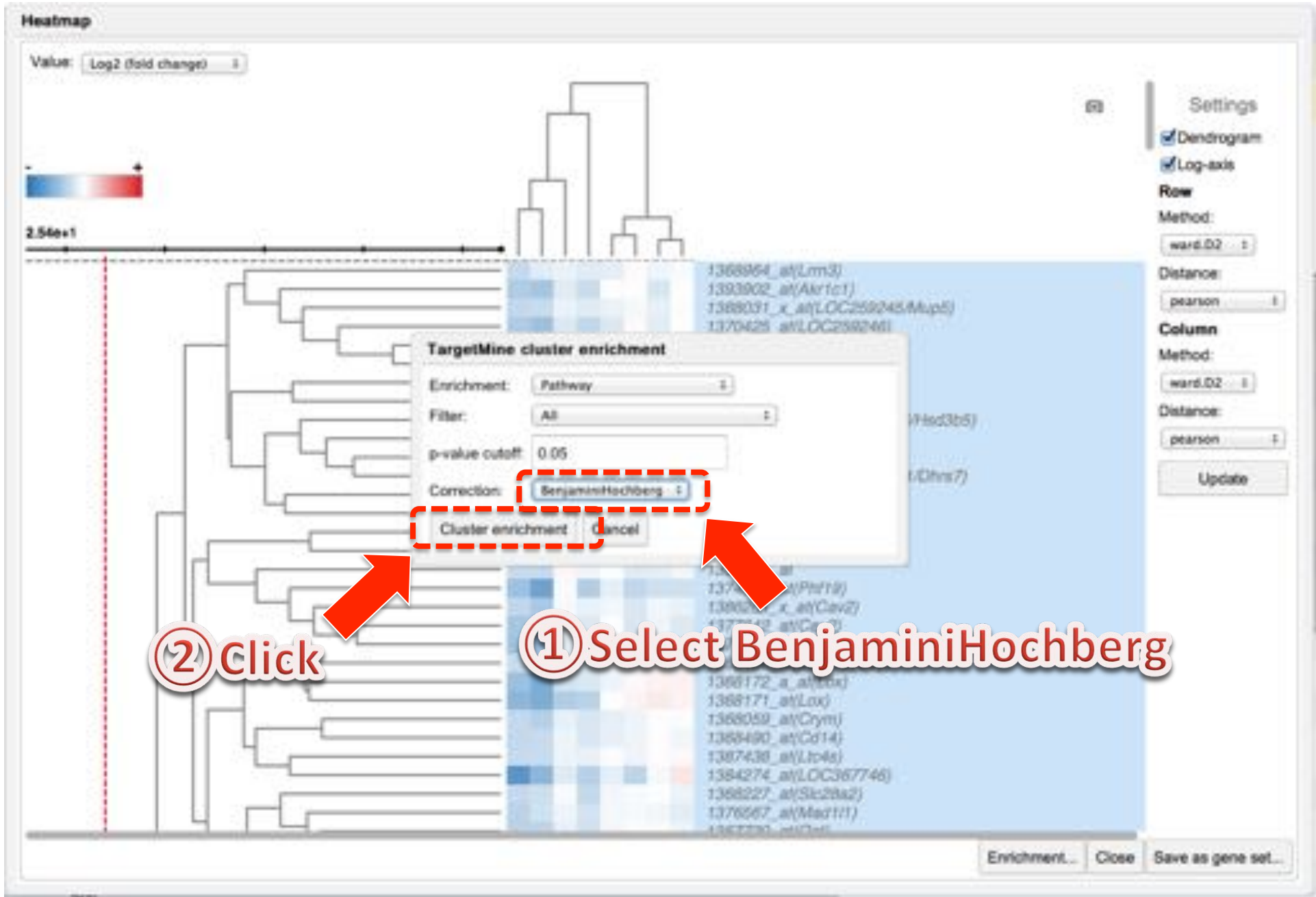
① Heatmap is updated

② Select cut-off=4 by pointing and click



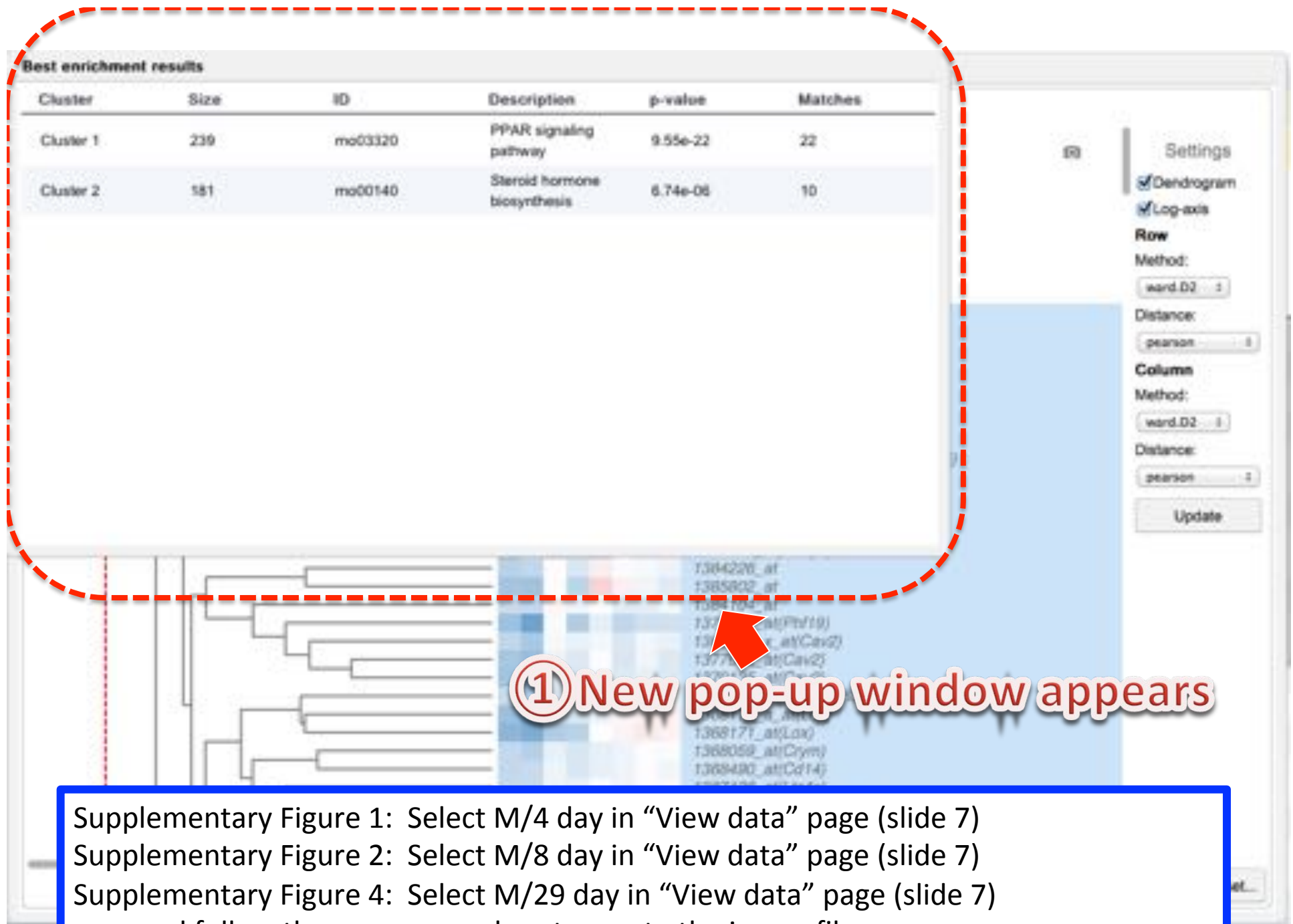


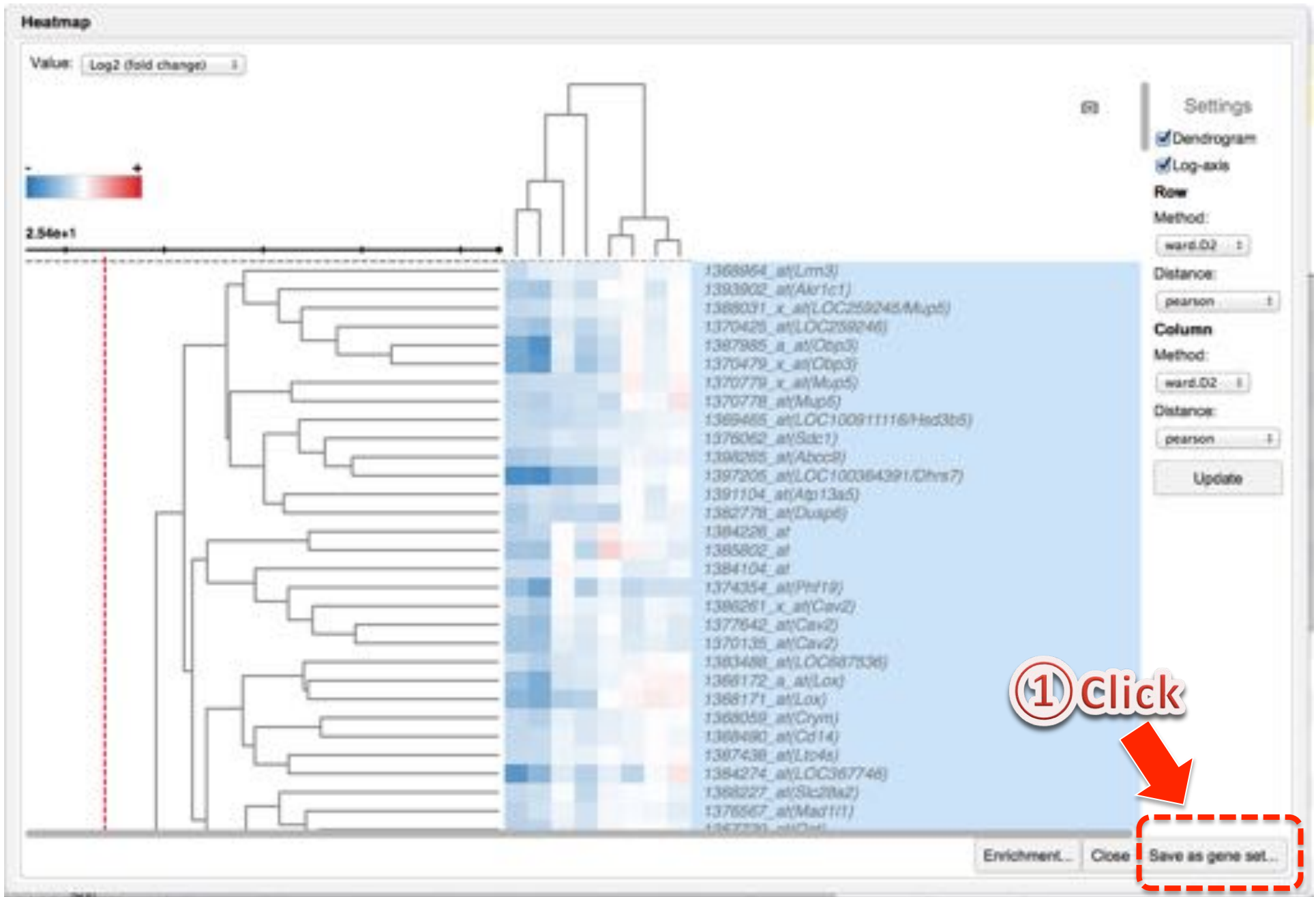
Supplementary Figure 3: image file of this heatmap

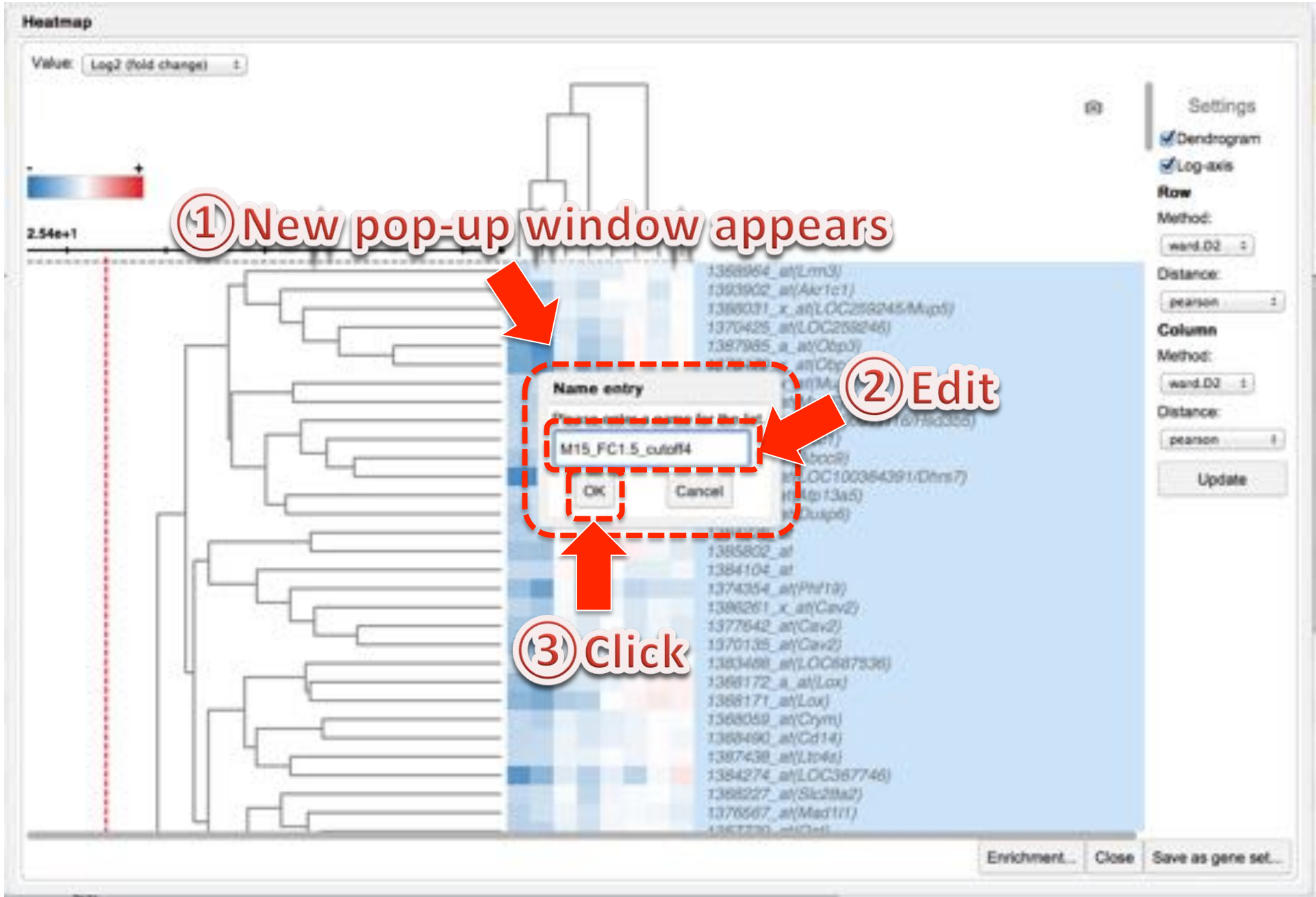


② Click

① Select BenjaminiHochberg



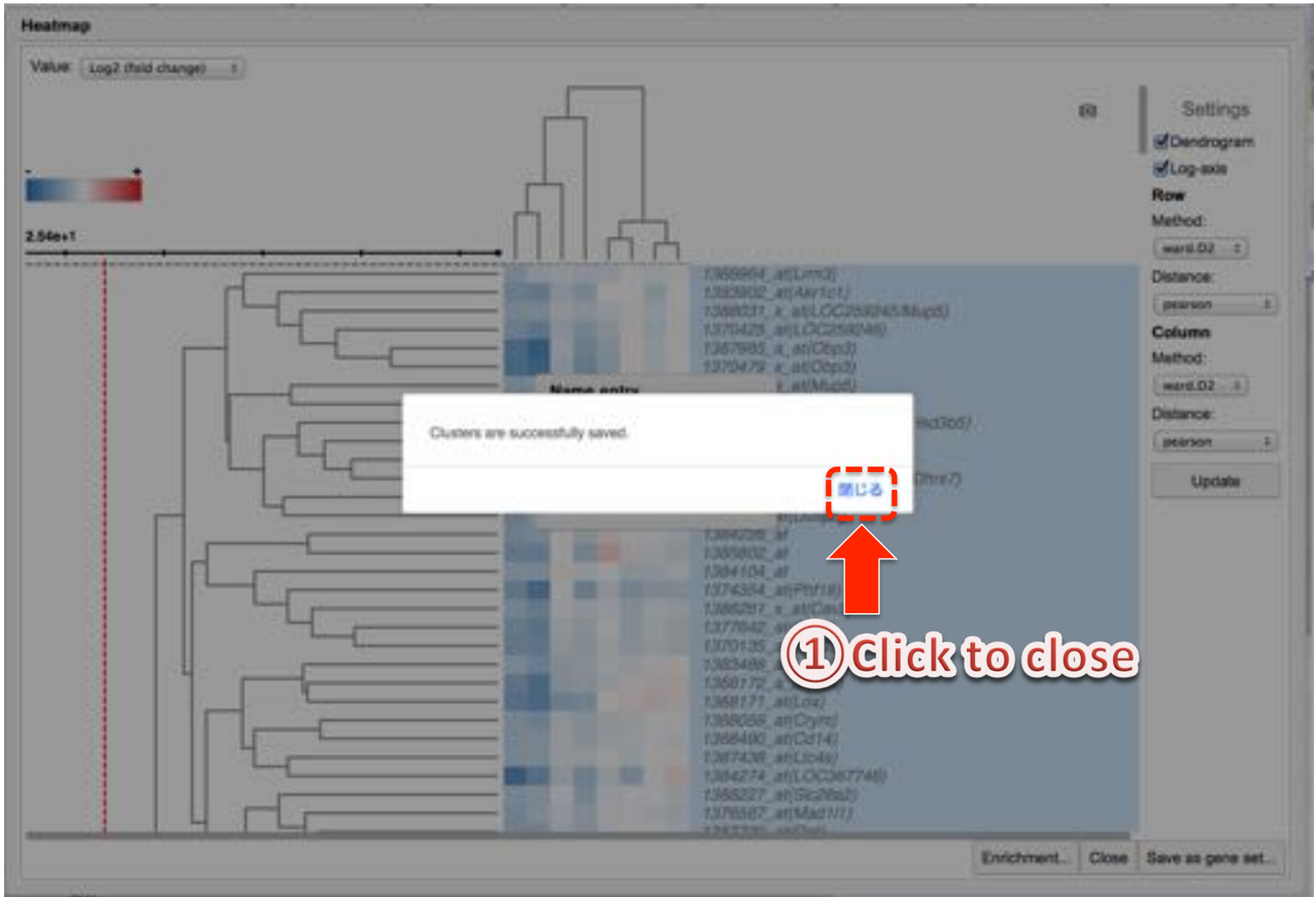




① New pop-up window appears

② Edit

③ Click





① Click

File Gene Sets View Tools Help / feedback

Start Sample groups View data Compound ranking Pathologies Sample details My data

Here you can inspect expression values for the sample groups you have defined. Click on column headers to sort data.

WY-14643_M_15day .WY-14643/Middle/15 day WY-14643_M_3hr .WY-14643/Middle/24 hr WY-14643_M_29day .WY-14643/Middle/29 day WY-14643_M_3hr .WY-14643/Middle/3 hr
WY-14643_M_4day .WY-14643/Middle/4 day Show all

Log2 (fold change) 1-25 of 420 Show More p-value columns All Probes New Edit

Gene Symbol	Probe Title	Probe	WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643...
Acat1	acyl-CoA thioesterase 1	1398250_at	10.307	11.123	10.505	4.068	10.941
Aqp3	aquaporin 3	1387100_at	8.306	(absent)	8.064	(absent)	7.499
LOC100911217	adipogenin-like	1376298_at	8.15	(absent)	8.052	(absent)	5.391
		1384474_at	7.818	4.972	6.932	(absent)	6.184
Chra2	cholinergic receptor - nicotinic - alpha 2 (neuronal)	1387574_at	7.573	2.529	6.721	(absent)	3.357
Hdc	histidine decarboxylase	1370491_a_at	7.257	8.121	7.365	(absent)	7.247
Fabp3	fatty acid binding protein 3 - muscle and heart	1367660_at	6.833	2.382	6.71	(absent)	6.627
RGD1305928	hypothetical LOC300207	1380536_at	6.815	8.226	6.9	(absent)	5.858
Acat1 Acat2	acyl-CoA thioesterase 1	1388211_a_at	6.489	5.262	6.167	2.2	6.76
Fbp2	fructose-1,6-bisphosphatase 2	1368622_at	6.078	3.951	5.798	(absent)	4.471
Abhd3	abhydrolase domain containing 3	1382137_at	5.922	1.298	4.042	(absent)	5.105
		1383757_at	5.757	(absent)	5.389	(absent)	(absent)
Cpt1b	camitine palmitoyltransferase 1b - muscle	1367742_at	5.648	2.853	5.414	(absent)	5.372
Aqp7	aquaporin 7	1388317_at	5.638	1.64	4.667	(absent)	4.852
Spink3	serine peptidase inhibitor - Kazal type 3	1368447_x_at	5.097	1.887	4.123	0.076	1.297
LOC100912489 Scd	acyl-CoA desaturase 2-like	1367668_a_at	4.986	0.036	6.298	-0.322	0.636

File Gene Sets View Tools Help / feedback

Start Show all **data** Compound ranking Pathologies Sample details My data

Here you can view and filter data for the sample groups you have defined. Click on column headers to sort data.

WY-1463 Add new WY-14643_M_24hr WY-14643/Middle24 hr WY-14643_M_29day WY-14643/Middle29 day WY-14643_M_3hr WY-14643/Middle3 hr

WY-1463 Challenge event M4 day Show all

M15_FC1.5_cutoff4

log2 (FC) Add new M15_FC1.5_cutoff4 1

gene symbol probe M15_FC1.5_cutoff4

Probe WY-14643_M... WY-14643_M... WY-14643_M... WY-14643_M...

gene symbol	probe	M15_FC1.5_cutoff4	Probe	WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643_M...
Acot1	acyl-CoA thioesterase 1	Delete	1386250_at	10.307	11.123	10.505	4.008
Aqp3	aquaporin 3		1387100_at	8.366	(absent)	6.064	(absent)
LOC100911217	adipogenin-like		1376296_at	6.15	(absent)	6.052	(absent)
			1384474_at	7.818	4.972	6.932	(absent)
Chma2	cholinergic receptor - nicotinic - alpha 2 (neuronal)		1387574_at	7.573	2.529	6.721	(absent)
Hdc	histidine decarboxylase		1370491_a_at	7.257	5.121	7.385	(absent)
Fatp3	fatty acid binding protein 3 - muscle and heart		1367660_at	6.833	2.382	6.71	(absent)
RGD1305928	hypothetical LOC300207		1380536_at	6.615	3.226	6.9	(absent)
Acot1 Acot2	acyl-CoA thioesterase 1		1388211_s_at	6.489	5.952	6.167	2.2
Fbp2	fructose-1,6-bisphosphatase 2		1368622_at	6.078	3.991	5.799	(absent)
Abhd3	abhydrolase domain containing 3		1382137_at	5.922	1.266	4.042	(absent)
			1383757_at	5.757	(absent)	5.389	(absent)
Cpt1b	carnitine palmitoyltransferase 1b - muscle		1367742_at	5.648	2.953	5.414	(absent)
Aqp7	aquaporin 7		1368317_at	5.636	1.84	4.667	(absent)
Spink3	serine peptidase inhibitor - Kazal type 3		1368447_x_at	5.097	1.687	4.123	0.076
LOC100912469 Sirt	acyl-CoA desaturase 2-like		1367668_a_at	-4.956	0.036	6.296	-0.322

① Click

File Gene Sets View Tools Help / feedback

Start | Sample groups | **View data** | Compound ranking | Pathologies | Sample details | My data

Here you can inspect expression values for the sample groups you have defined. Click on column headers to sort data.

WY-14643_M_15day -WY-14643/Middle/15 day | WY-14643_M_24hr | WY-14643_M_29day | WY-14643_M_3hr | WY-14643/Middle/3 hr | WY-14643_M_4day -WY-14643/Middle/4 day | Show

Log2 (fold change) | 1-25 of 239 | Show More | p-value columns | M15_FC1.5_cutoff4 / M15_FC1.5_cutoff4 | New | Edit

Gene Symbol	Probe Title	Probe	WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643_M...
Aco1	acyl-CoA thioesterase 1	1386250_at	10.307	11.123		4.058
Aqp3	aquaporin 3	1387100_at	6.366	(absent)		(absent)
LOC100911217	adipogenin-like	1376296_at	8.15	(absent)		(absent)
		1384474_at	7.818	6.972		(absent)
Chrna2	cholinergic receptor - nicotinic - alpha 2 (neuronal)	1387574_at	7.573	2.529	6.721	(absent)
Hdc	histidine decarboxylase	1370491_a_at	7.257	5.121	7.385	(absent)
Fabp3	fatty acid binding protein 3 - muscle and heart	1367660_at	6.833	2.382	6.71	(absent)
RGD1305928	hypothetical LOC300207	1380536_at	6.615	3.228	6.8	(absent)
Aco1 Aco2	acyl-CoA thioesterase 1	1386211_s_at	6.489	5.952	6.167	2.2
Fbp2	fructose-1,6-bisphosphatase 2	1368622_at	6.078	3.901	5.799	(absent)
Abhd3	abhydrolase domain containing 3	1382137_at	5.922	1.266	4.042	(absent)
		1383757_at	5.757	(absent)	5.389	(absent)
Cpt1b	camitine palmitoyltransferase 1b - muscle	1367742_at	5.648	2.953	5.414	(absent)
Aqp7	aquaporin 7	1368317_at	5.638	1.64	4.607	(absent)
Spink3	serine peptidase inhibitor - Kazal type 3	1368447_x_at	5.097	1.687	4.123	0.076
LOC100912489 Sirt	acyl-CoA desaturase 2-like	1367668_a_at	-4.995	0.036	6.296	-0.322

① 239 probes in cluster 1 are shown

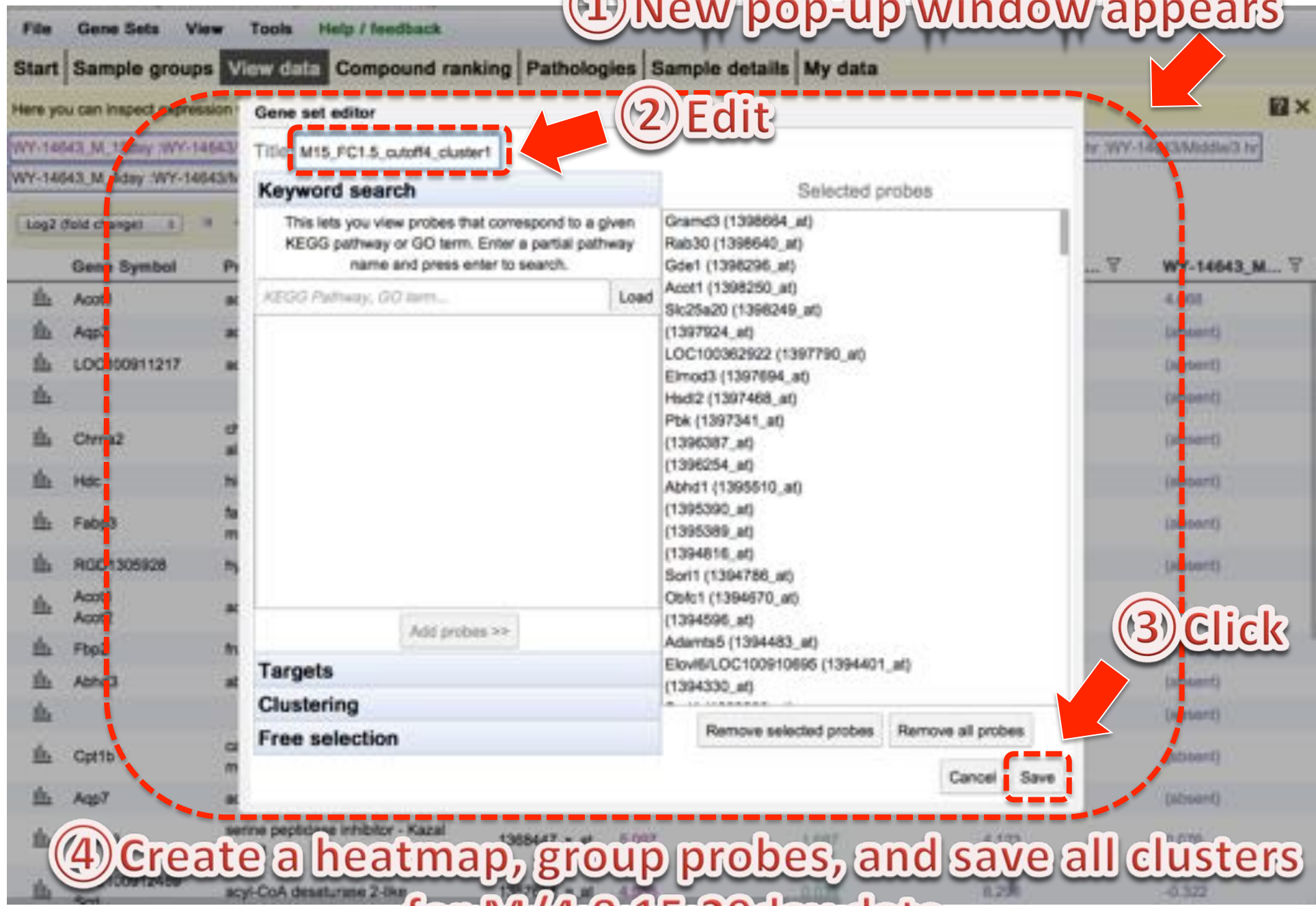
② Click

① New pop-up window appears

② Edit

③ Click

④ Create a heatmap, group probes, and save all clusters for M/4,8,15,29day data



Here you can inspect expression values for the sample groups you have defined. Click on column headers to sort data. 

[WY-14643_M_15day -WY-14643/Middle/15 day](#) |
 [WY-14643_M_24hr -WY-14643/Middle/24 hr](#) |
 [WY-14643_M_29day -WY-14643/Middle/29 day](#) |
 [WY-14643_M_3hr -WY-14643/Middle/3 hr](#)
[WY-14643_M_4day -WY-14643/Middle/4 day](#) | [Show all](#)

Log2 (fold change) | 1-25 of 239 | Show More | p-value columns | M15_FC1.5_cutoff4 / M15_FC1.5_cutoff4.1 | [New](#) | [Edit](#)

Gene Symbol	Probe Title	Probe	WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643_M...
 Aco1	acyl-CoA thioesterase 1	1388250_at	10.307	11.123	10.605	4.058
 Aqp3	aquaporin 3	1387100_at	6.366	(absent)	6.064	(absent)
 LOC100911217	adipogenin-like	1376296_at	8.15	(absent)	6.052	(absent)
		1384474_at	7.818	4.972	6.932	(absent)
 Chra2	cholinergic receptor - nicotinic - alpha 2 (neuronal)	1387574_at	7.573	2.529	6.721	(absent)
 Hdc	histidine decarboxylase	1370491_a_at	7.257	5.121	7.385	(absent)
 Fabp3	fatty acid binding protein 3 - muscle and heart	1367660_at	6.833	2.382	6.71	(absent)
 RGD1305928	hypothetical LOC300207	1380536_at	6.615	3.228	6.8	(absent)
 Aco1 Aco2	acyl-CoA thioesterase 1	1388211_s_at	6.489	5.952	6.167	2.2
 Fbp2	fructose-1 -6-bisphosphatase 2	1368622_at	6.078	3.901	5.799	(absent)
 Abhd3	abhydrolase domain containing 3	1382137_at	5.922	1.266	4.042	(absent)
		1383757_at	5.757	(absent)	5.389	(absent)
 Cpt1b	camitine palmitoyltransferase 1b - muscle	1367742_at	5.648	2.953	5.414	(absent)
 Aqp7	aquaporin 7	1368317_at	5.638	1.64	4.607	(absent)
 Spink3	serine peptidase inhibitor - Kazal type 3	1368447_x_at	5.097	1.687	4.123	0.076
 LOC100912489 Sert	acyl-CoA desaturase 2-like	1367668_a_at	-4.995	0.036	6.296	-0.322

File Gene Sets View Tools Help / feedback

Start Sample groups

TargetMine data
 Compare two sample groups
 Enrichment...
 Show heat map
 Go to TargetMine

Export gene sets to TargetMine... ← ① Click

WY-14643_M_15day :WY-14643/

WY-14643_M_4day :WY-14643/Middle/4 day Show all

log2 (fold change) 1-25 of 239 Show More p-value columns M15_FC1.5_cutoff4_cluster1 New Edit

Gene Symbol	Probe Title	Probe	WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643_M...
Acot1	acyl-CoA thioesterase 1	1366250_at	10.307	11.123	10.505	4.068
Aqp3	aquaporin 3	1387100_at	8.366	(absent)	6.054	(absent)
LOC100911217	adipogenin-like	1376296_at	8.15	(absent)	6.052	(absent)
		1384474_at	7.818	4.972	6.932	(absent)
Chma2	cholinergic receptor - nicotinic - alpha 2 (neuronal)	1387574_at	7.573	2.529	6.721	(absent)
Hdc	histidine decarboxylase	1370491_x_at	7.257	5.121	7.385	(absent)
Fabp3	fatty acid binding protein 3 - muscle and heart	1367660_at	6.833	2.382	6.71	(absent)
RGD1305928	hypothetical LOC300207	1380536_at	6.615	3.226	6.9	(absent)
Acot1 Acot2	acyl-CoA thioesterase 1	1388211_s_at	6.489	5.952	6.167	2.2
Fbp2	fructose-1,6-bisphosphatase 2	1368622_at	6.078	3.991	5.799	(absent)
Abhd3	abhydrolase domain containing 3	1382137_at	5.922	1.266	4.042	(absent)
		1383757_at	5.757	(absent)	5.399	(absent)
Cpt1b	carbonyl palmitoyltransferase 1b - muscle	1367742_at	5.648	2.953	5.414	(absent)
Aqp7	aquaporin 7	1368317_at	5.638	1.64	4.667	(absent)
Spink3	serine peptidase inhibitor - Kazal type 3	1368447_x_at	5.097	1.687	4.123	0.076
LOC100912489 Scp	acyl-CoA desaturase 2-like	1367668_a_at	4.956	0.036	6.296	-0.322

File Gene Sets View Tools Help / feedback

Start | Sample groups | **View data** | Compound ranking | Pathologies | Sample details | My data

Here you can inspect expression values for the sample groups you have defined. Click on column headers to sort data.

WY-14643_M_15day :WY-14643/Middle/15 day | WY-14643_M_24hr :WY-14643/Middle/24 hr | WY-14643_M_29day :WY-14643/Middle/29 day | WY-14643_M_3hr :WY-14643/Middle/3 hr
 WY-14643_M_4day :WY-14643/Middle/4 day | Show all

log2 (fold change) | 1-25 of 239 | Show More | p-value columns | M15_FC1.5_outoff4_cluster1 | New | Edit

Gene Symbol	Probe Title	Probe	WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643_M...
Acof1	acyl-CoA thioesterase 1	1398250_at	10.307	11.123	10.505	4.038
Aqp3	aquaporin 3				6.064	(absent)
LOC100911217	adipogenin-like				6.052	(absent)
					6.932	(absent)
Chra2	cholinergic receptor - nicotinic alpha 2 (neuronal)				6.77	(absent)
Hdc	histidine decarboxylase				7.3	(absent)
Fabp3	fatty acid binding protein 3 muscle and heart				6.71	(absent)
RGD1305928	hypothetical LOC305928				6.9	(absent)
Acof1	acyl-CoA thioesterase 1	1398250_at	6.5	6.5	6.167	2.2
Acof2	acyl-CoA thioesterase 2	1398251_at	6.5	6.5	6.167	2.2
Fbp2	fructose-1,6-bisphosphatase 2	1368622_at	6.7	3.901	5.799	(absent)
Abhd3	abhydrolase domain containing 3	1382137_at	6.9	1.266	4.042	(absent)
		1383757_at	5.75	(absent)	5.389	(absent)
Cpt1b	carntine palmitoyl transferase 1b muscle					(absent)
Aqp7	aquaporin 7	1368317_at	6.638	6.04	4.867	(absent)
	serine peptidase inhibitor - Kazal type 3	1368447_x_at	6.097	1.037	4.123	0.076
LOC100912459	acyl-CoA dehydrogenase 2-like	1367905_at	4.995	0.034	6.726	-0.322

TargetMine export details

You must have a TargetMine account in order to use this function. If you do not have one, you may create one at <http://targetmine.mizuguchi-lab.org>.

Account name (e-mail address)

Password

Replace lists with identical names

① New pop-up window appears

② Input your account

③ Click

NOTE:

Users need to create TargetMine account in advance.

Here you can inspect expression values for the sample groups you have defined. Click on column headers to sort data.

WY-14643_M_15day :WY-14643/Middle/15 day | WY-14643_M_24day :WY-14643/Middle/24 day | WY-14643_M_29day :WY-14643/Middle/29 day | WY-14643_M_30r :WY-14643/Middle/30 r
WY-14643_M_4day :WY-14643/Middle/4 day | Show all

Log2 (fold change) | 1-25 of 239 | Show More | p-value column: M15_FC1.5_cutoff4_cluster1 | New | Edit

Gene Symbol	Probe Title	Probe	WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643_M...
Acat1	acyl-CoA thioesterase 1	1368250_at	10.307	11.123	10.505	-4.068
Acp3	aquaporin 3	1367100_at	6.366	(absent)	6.064	(absent)
LOC100911217	adipogenin-like	1376296_at	6.15	(absent)	6.052	(absent)
					6.932	(absent)
Chma2	cholinergic receptor - nicotinic alpha 2 (neuronal)				6.721	(absent)
Hdc	histidine decarboxylase				7.388	(absent)
Fatp3	fatty acid binding protein 3 muscle and heart	1367660_at	6.833	2.362	6.71	(absent)
RGD1306928	hypothetical LOC300207	1360536_at	6.616	3.238	6.9	(absent)
Acat1	acyl-CoA thioesterase 1	1368211_s_at	6.489	1.952	6.167	2.2
Acat2						
Fbp2	fructose-1,6-bisphosphatase 2	1368622_at	6.078			(absent)
Abhd3	abhydrolase domain containing 3	1362137_at	5.922		4.042	(absent)
		1363757_at	5.757	(absent)	3.388	(absent)
Cpt1b	camitine palmitoyltransferase 1b - muscle	1367742_at	5.648	2.853	5.414	(absent)
Acp7	aquaporin 7	1368317_at	5.638	1.4	4.667	(absent)
Spink3	serine peptidase inhibitor - Kazal type 3	1368447_x_at	5.097	1.667	4.123	0.076
LOC100912469	acyl-CoA desaturase 2-like	1367668_s_at	4.985	5.336	6.296	-0.322

The lists were successfully exported.

閉じる

① Click to close

① Open TargetMine (targetmine.mizuguchilab.org)



TargetMine

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TargetMine

Data warehouse for drug discovery

The use of TargetMine web-based tools and web services is free to **ALL** users, subject to [terms of use](#).

TargetMine Auxiliary Toolkit



Enrichment analysis[†]



Composite network

[More info...](#)

Start using TargetMine

① Click

What's new

- [TargetMine update](#) 2017/01/30
- [TargetMine update](#) 2016/12/19

Tutorial Movies

- Tutorial movies for TargetMine (English)
- [Keyword, Template Search](#)

Take a tour!

Have no idea what is TargetMine and what can be done with TargetMine? Start from



Search

Search TargetMine. Enter names, identifiers or keywords for genes, proteins, pathways, ontology terms, etc. (e.g. TNF, ADH1A_HUMAN, glucokinase, Alzheimer).

e.g. STAT1, TP53

SEARCH

List Upload

Enter a list of identifiers.

Gene

e.g. 1080, 125, 217, 2944, 2947, 2950, 2952, 3105, 3106, 3107, 3115, 3119, 3123, 3265, 3304, 3458, 3586, 3836, 4257, 5444, 54576, 54577, 54578, 54638,

ANALYSE

Welcome Back!

2015年4月1日より、ウェブ版のTargetMineは、アカデミック/非アカデミックを問わず、無料で利用可能になりました。

TargetMine integrates many types of data for human, rat and mouse. You can run flexible queries, export results and analyse lists of data.

TUTORIALS

TargetMine loads gene information from Entrez Gene. [Read more](#)

Query for genes:

- Gene → Pathway
- Gene(s) → Disease(s)
- Gene(s) → Compound(s)
- Gene(s) → Integrated Pathway clusters
- Disease Ontology (Name) → Genes
- Disease (DOI) → SNPs and Genes (GWAS)
- Gene list → Compounds that target hub or bottleneck genes
- Convert Gene → Orthologous Gene



Account

Login using username (email) and password

Username:

Password:

[Forgot password?](#)

Create account ...

- your  lists and  queries will be privately saved
- you can  favorite items
- you can share  lists with other users

[Create account now](#)



[Questions? Comments? Click here!](#)

TargetMine is developed by the  Mizuguchi Laboratory @
 国立研究開発法人 医薬基盤・健康・栄養研究所
National Institute of Biomedical Innovation, Health and Nutrition

Powered by  **InterMine** 1.6.8

Process to upgrade your lists has started. Go to MyMine->Lists page to verify the status of your lists. Hide

Logged in as user [redacted] Hide

Search

Search TargetMine. Enter names, identifiers or keywords for genes, proteins, pathways, ontology terms, etc. (e.g. TNF, ADH1A_HUMAN, glucokinase, Alzheimer).

e.g. STAT1, TP53

SEARCH

List Upload

Enter a list of identifiers.

Gene

e.g. 1080, 125, 217, 2944, 2947, 2950, 2952, 3105, 3106, 3107, 3115, 3116, 3123, 3265, 3304, 3458, 3586, 3856, 4257, 5444, 54576, 54577, 54578, 54658,

ANALYSE

Welcome Back!

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TUTORIALS

- GENES
- PROTEINS
- DOMAIN
- STRUCTURE
- INTERACTIONS
- PATHWAYS
- COMPOUNDS

TargetMine loads gene information from Entrez Gene. [Read more](#)

Query for genes:

- Convert Gene ⇄ Orthologus Gene
- Disease (DO) ⇄ SNPs and Genes (GWAS)
- Disease Ontology (Name) ⇄ Genes
- Disease Ontology ID(s) ⇄ Genes





Your Lists

<input type="checkbox"/>	LIST NAME	DESCRIPTION	TYPE	NUMBER OF OBJECTS	DATE CREATED
<input type="checkbox"/>					
<input type="checkbox"/>	M15_FC1.5_cluster1	Created with Java Webservice-Client	Gene	180 values	[Redacted]
<input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					



← ① Click



List Analysis for M15_FC1.5_cutoff4_cluster1 (180 Genes)

Manage Columns

Manage Filters

Manage Relationships

Generate Python code

Export

Save as List

Rows per page: 25

Navigation: < << >> >

page 1

Showing rows 1 to 25 of 180

Gene DB identifier	Gene Symbol	Gene Name	Gene Organism Name
100360507	LOC100360507	inducible carbonyl reductase-like	Rattus norvegicus
100362922	LOC100362922	rCG41077-like	Rattus norvegicus
100365047	LOC100365047	scavenger receptor class B, member 2-like	Rattus norvegicus
100910040	LOC100910040	liver carboxylesterase-like	Rattus norvegicus

Convert to a different type

Protein: 185

Orthologues

H. sapiens (144) M. musculus (149)

Auxiliary Toolkit

Enrichment+

Composite Interaction Network

① Scroll down

NOTE:

Since TargetMine updates monthly, the result can be slightly different from that in Supplementary Table 2

Click to select widgets you would like to display:

- Pathway Enrichment
- Integrated Pathway Cluster Enrichment
- Gene Ontology Enrichment
- COSim Enrichment
- Disease Enrichment
- Disease Ontology Enrichment
- InterPro domain Enrichment
- CATH classification Enrichment
- Compound Enrichment
- Tissue Enrichment

Pathway Enrichment

Pathways enriched for genes in this list - data from KEGG, Reactome and NCI

Number of Genes in this list not analysed in this widget: 61

Test Correction: Max p-value: DataSet:

Background population:

<input type="checkbox"/> Pathways	p-Value	Matches
<input type="checkbox"/> PPAR signaling pathway [ko03320]	9.52407e-22	22
<input type="checkbox"/> Metabolism of lipids and lipoproteins [R-FOO-556833]	2.648616e-16	36
<input type="checkbox"/> Fatty acid degradation [ko00071]	3.654209e-14	14
<input type="checkbox"/> Biosynthesis of unsaturated fatty acids [ko01040]	4.743065e-14	12
<input type="checkbox"/> Fatty acid metabolism [ko01212]	1.950866e-13	14
<input type="checkbox"/> Meta		
<input type="checkbox"/> Metabolic pathways [ko01100]	8.567e-10	48

Integrated Pathway Cluster Enrichment

Integrated Pathway Clusters(IPCs) enriched for genes in this list

Number of Genes in this list not analysed in this widget: 61

Test Correction: Max p-value: Background population:

<input type="checkbox"/> IPCs	p-Value	Matches
<input type="checkbox"/> Metabolism of lipids and lipoproteins [FOO5]	6.589558e-33	53
<input type="checkbox"/> Glycerophospholipid metabolism(Arachidonic acid metabolism [FO12]	1.120517e-9	18
<input type="checkbox"/> Biological oxidations(Chemical carcinogenesis [FOO6]	5.939390e-6	18
<input type="checkbox"/> Carbon metabolism [FOO9]	0.004272	10

Supplementary Table 2: summary of the result of M/4,8,15,29 day data.

Compound ranking

Tools [Help / feedback](#)

Start **Sample groups** View data Compound ranking Pathologies Sample details My data

Please define at least one sample group to proceed. Start by selecting compounds to the left. Then select doses and times.

Data... Rat in vivo Liver Repeat

Compound

Sample group definition - new group

Rat/in vivo/Liver/Repeat/

Low Middle High

All 4 day 8 day 15 day 29 day 4 day 8 day 15 day 29 day 4 day 8 day 15 day 29 day

WY-14643 3/3 3/3 3/3 3/3 All 3/3 3/3 3/3 3/3 All 3/3 3/3 3/3 3/3 All

Save group as Save Automatic groups

Active	Group	#Treated samples	#Control samples		
<input checked="" type="checkbox"/>	WY-14643_M_15day	3	3	Edit	Delete
<input type="checkbox"/>	WY-14643_M_3hr	3	3	Edit	Delete
<input checked="" type="checkbox"/>	WY-14643_M_29day	3	3	Edit	Delete
<input type="checkbox"/>	WY-14643_M_3hr	3	3	Edit	Delete
<input checked="" type="checkbox"/>	WY-14643_M_4day	3	3	Edit	Delete
<input type="checkbox"/>	WY-14643_M_9hr	3	3	Edit	Delete
<input checked="" type="checkbox"/>	WY-14643_M_8day	3	3	Edit	Delete
<input type="checkbox"/>	WY-14643_M_9hr	3	3	Edit	Delete

Sort by name Select all Unselect all

Delete all groups Next: View data

① Select repeat dose data

② Click

File Gene Sets View Tools Help / feedback

Start **Show all** ← ① Click

Here you have sample groups you have defined. Click on column headers to sort data.

WY-14643 NewGeneSet

Log2 (FC) M15_FC1.5_cutoff4

WY-14643_M_29day WY-14643/Middle29 day WY-14643_M_4day WY-14643/Middle4 day WY-14643_M_8day WY-14643/Middle8 day

0.042 Show More p-value columns All Probes New Edit

	Probe	WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643_M...
lipase 1	1398260_at	10.307	10.505	10.941	9.335
Aqp3 aquaporin 3	1387100_at	8.368	6.064	7.499	7.185
LOC100911217 adipogenin-like	1376298_at	6.15	6.062	5.391	5.681
	1384474_at	7.618	6.932	6.184	6.979
Chna2 cholinergic receptor - nicotinic - alpha 2 (neuronal)	1387574_at	7.573	6.721	3.357	4.693
Hdc histidine decarboxylase	1370491_a_at	7.257	7.385	7.247	7.373
Fatp3 fatty acid binding protein 3 - muscle and heart	1367660_at	6.833	6.71	6.627	6.918
RGD1305928 hypothetical LOC300207	1380536_at	6.615	6.9	5.616	5.754
Acot1 acyl-CoA thioesterase 1	1368211_x_at	6.489	6.167	6.76	6.733
Fbp2 fructose-1,6-bisphosphatase 2	1368622_at	6.078	5.799	4.471	6.139
Abhd3 abhydrolase domain containing 3	1362137_at	5.922	4.042	5.105	1.753
	1383757_at	5.757	5.589	(absent)	5.54
Cpt1b carnitine palmitoyltransferase 1b - muscle	1367742_at	5.648	5.414	5.372	5.456
Aqp7 aquaporin 7	1368317_at	5.638	4.667	4.652	4.205
Spink3 serine peptidase inhibitor - Kazal type 3	1368447_x_at	5.097	4.123	1.297	2.692
LOC100912469 Scd acyl-CoA desaturase 2-like	1367668_a_at	4.908	6.296	0.636	2.691

File Gene Sets View Tools Help / feedback

Start | Sample groups | **View data** | Compound ranking | Pathologies | Sample details | My data

Here you can inspect expression values for the sample groups you have defined. Click on column headers to sort data.

WY-14643_M_15day :WY-14643/Middle/15 day | WY-14643_M_29day :WY-14643/Middle/29 day | WY-14643_M_4day :WY-14643/Middle/4 day | WY-14643_M_8day :WY-14643/Middle/8 day

Log2 (fold change) 1-25 of 31,042 Show More p-value columns All Probes New Edit

Gene Symbol	Probe Title	Probe	WY-14643_M_15day	WY-14643_M_29day	WY-14643_M_4day	WY-14643_M_8day
Acot1	acyl-CoA thioesterase 1	1388250_at	10.307	10.505	10.941	9.335
Aqp3	aquaporin 3	1387100_at	8.368	8.064	7.499	7.185
LOC100911217	adipogenin-like	1376296_at	8.15	6.052	5.391	5.881
	cholinergic receptor, nicotinic, gamma 5				6.184	5.979
	glutamate decarboxylase 1				3.357	4.693
	glutamate decarboxylase 2				7.247	7.373
Fabp3	fatty acid binding protein 3 - muscle and heart					6.754
RGD1306926	hypothetical LOC300207					
Acot1	acyl-CoA thioesterase 1	1388211_s_at	6.489	6.167	6.76	6.733
Acot2	acyl-CoA thioesterase 2					
Fbp2	fructose-1,6-bisphosphatase 2	1388622_at	6.078	5.799	4.471	8.139
Abhd3	abhydrolase domain containing 3	1382137_at	5.922	4.042	5.105	1.753
		1383757_at	5.757	5.389	(absent)	5.94
Cpt1b	carntine palmitoyltransferase 1b - muscle	1367742_at	5.648	5.414	5.372	5.456
Aqp7	aquaporin 7	1368317_at	5.638	4.667	4.852	4.205
Spink3	serine peptidase inhibitor - Kazal type 3	1368447_x_at	5.097	4.123	1.297	2.692
LOC100912469	acyl-CoA desaturase 2-like	1367668_s_at	4.995	6.290	0.636	2.891
	similar to Glutamyl-peptide					

Edit filter

Please choose a bound for 'WY-14643_M_15day'.
Examples: 2.1, 1E-3

OK Clear filter

① Change to "x <="

② Input -1 for all filters

Here you can inspect expression values for the sample groups you have defined. Click on column headers to sort data.

WY-14643_M_15day WY-14643/Middle/15 day WY-14643_M_29day WY-14643/Middle/29 day WY-14643_M_4day WY-14643/Middle/4 day WY-14643_M_8day WY-14643/Middle/8 day

Log2 (fold change) 1-25 of 73 Show More p-value columns All Probes New **Click**

Gene Symbol	Probe Title	Probe	WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643_M...
LOC100362769 Mt1a Tr	hypothetical protein LOC100362769			72		-2.655
St6galnac3	ST6 (alpha-N-acetyl-neuraminy-2-3-beta-galactosyl-1-3)-N-acetylgalactosaminide alpha-2-6-sialyltransferase 3	1368882_at	-1.103	-2.41	-1.582	-1.181
C6	complement component 6	1384580_at	-1.163	-1.817	-1.121	-1.527
Cyp29d	cytochrome P450 - family 2 - subfamily d - polypeptide 4	1387913_at	-1.168	-1.623	-1.735	-1.645
Wip1	WD repeat domain - phosphoinositide interacting 1	1373270_at	-1.233	-1.266	-1.364	-1.37
Sipi	secretory leukocyte peptidase inhibitor	1367998_at	-1.258	-1.503	-2.14	-1.332
Ass1	argininosuccinate synthase 1	1370964_at	-1.264	-1.226	-1.188	-1.506
		1392713_x_at	-1.275	-1.208	-1.056	-1.333
Edra	endothelin receptor type A	1383641_at	-1.301	-1.958	-1.522	-1.847
LOC100362572	Mpv17 transgene - kidney disease mutant-like (predicted)-like	1377051_at	-1.331	-1.106	-1.121	-1.579
Lrp3	low density lipoprotein receptor-related protein 3	1368239_at	-1.344	-1.151	-1.179	-1.295
Ptpnf	protein tyrosine phosphatase - receptor type - F	1368036_at	-1.39	-1.423	-1.22	-1.422
Pde4b	phosphodiesterase 4B - cAMP specific	1374157_at	-1.429	-1.914	-1.04	-1.674

73 probes are extracted

File Gene Sets View Tools Help / feedback

Start | Sample groups | **View data** | Compound ranking | Pathologies | Sample details | My data

Here you can inspect expression values for the sample groups you have defined. Click on column headers to sort data.

WY-14643_M_15day WY-14643_M_15day WY-14643_M_15day WY-14643_M_15day WY-14643_M_15day WY-14643_M_15day WY-14643_M_15day WY-14643_M_15day

Gene set editor

Title: **downregulated_Wy** ← ① Edit

Keyword search

This lets you view probes that correspond to a given KEGG pathway or GO term. Enter a partial pathway name and press enter to search.

KEGG Pathway, GO term... Load

Selected probes

- LOC100362769/Mt1a/Ttr (1371237_a_at)
- Slc6galnac3 (1368862_at)
- C6 (1384590_at)
- Cyp2d4 (1387913_at)
- Wpi1 (1373270_at)
- Slpi (1367996_at)
- Aas1 (1370964_at)
- (1392713_a_at)
- Edna (1383641_at)
- LOC100362572 (1377051_at)
- Lp3 (1368239_at)
- Pgrf (1368036_at)
- Pde4b (1374157_at)
- Cyp211 (1368265_at)
- Pgrf (1368035_a_at)
- Aboc9 (1374171_at)
- Bmf (1369902_at)
- Aboc8 (1369632_a_at)
- Slc22a8 (1385005_at)
- Slc9a3r1 (1387793_at)
- Nat8 (1387336_at)
- Cyp2c11/LOC100911626 (1387328_at)

Remove selected probes Remove all probes

Cancel **Save** ← ② Click

Targets

Clustering

Free selection

Gene Symbol	Pro	Log2 (fold change)	...	WY-14643_M_15day		
LOC100362769 Mt1a Ttr	tr			-2.886		
Slc6galnac3	ST -3- ace sial			-1.181		
C6	con			-1.827		
Cyp2d4	cyt sub			-1.646		
Wpi1	WD pho			-1.37		
Slpi	sec inhi			-1.332		
Aas1	arg			-1.508		
Edna	end			-1.333		
LOC100362572	Mp mul			-1.847		
Lp3	low rela			-1.879		
Pgrf	pro reo			-1.295		
Pde4b	pho specific	1374157_at	-1.429	-1.914	-1.04	-1.374
Cyp211	cytochrome P450 - family 2 - subfamily 1 - polypeptide 1	1368265_at	-1.471	-1.662	-1.127	-1.77
Pgrf	protein tyrosine phosphatase - receptor type - F	1368035_a_at	-1.502	-1.407	-1.037	-1.826

Here you can inspect expression values for the sample groups you have defined. Click on column headers to sort data.

WY-14643_M_15day : WY-14643/Middle/15 day | WY-14643_M_29day : WY-14643/Middle/29 day | WY-14643_M_4day : WY-14643/Middle/4 day | WY-14643_M_8day : WY-14643/Middle/8 day

Log2 (fold change) 1.25 of 73 Show More p-value columns downregulated_WY New Edit

Gene Symbol	Probe Title	Probe	WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643_M...
LOC100362769 Mtl1a Tr	transthyretin	1371237_at	-1.098	-2.126	-2.372	-2.886
Stlgalnac3	ST6 (alpha-N-acetyl-neuraminyl-2-3-beta-galactosyl-1-3)-N-acetylgalactosaminide alpha-2-6-sialyltransferase 3	1368662_at	-1.503	-2.41	-1.582	-1.181
C6	complement component 6	1384560_at	-1.163	-1.617	-1.121	-1.527
Cyp2d4	cytochrome P450 - family 2 - subfamily d - polypeptide 4	1387913_at	-1.166	-1.623	-1.735	-1.645
Wp1	WD repeat domain - phosphoinositide interacting 1	1373270_at	-1.233	-1.268	-1.364	-1.37
Slpi	secretory leukocyte peptidase inhibitor	1367998_at	-1.256	-1.503	-2.14	-1.332
Ass1	argininosuccinate synthase 1	1370964_at	-1.264	-1.226	-1.188	-1.506
		1392713_a_at	-1.275	-1.208	-1.056	-1.303
Ednra	endothelin receptor type A	1383641_at	-1.301	-1.569	-1.522	-1.847
LOC100362572	Mpv17 transgene - kidney disease mutant-like (predicted)-like	1377051_at	-1.331	-1.106	-1.121	-1.579
Lp3	low density lipoprotein receptor-related protein 3	1368239_at	-1.344	-1.151	-1.179	-1.286
Pgprf	protein tyrosine phosphatase - receptor type - F	1368036_at	-1.39	-1.423	-1.22	-1.422
Pde4b	phosphodiesterase 4B - cAMP specific	1374157_at	-1.429	-1.914	-1.04	-1.674

① Select rat/in vivo/Liver/Repeat

Tools [Help / feedback](#)

Start | [Sample groups](#) | [View data](#) | **Compound ranking** | [Pathologies](#) | [Sample details](#) | [My data](#)

Specify at least one gene symbol to rank compounds according to their effect.

Data: **Rat** | **In vivo** | **Liver** | **Single**

Compound

<input type="checkbox"/>	2,4-dinitrophenol
<input type="checkbox"/>	2-nitrofluorene
<input type="checkbox"/>	3-methylcholanthrene
<input type="checkbox"/>	LPS
<input type="checkbox"/>	N-methyl-N-nitrosourea
<input type="checkbox"/>	N-nitrosomorpholine
<input type="checkbox"/>	TNFalpha
<input type="checkbox"/>	WY-14543
<input type="checkbox"/>	sarbose
<input type="checkbox"/>	acetamidofluorene
<input type="checkbox"/>	acetaminophen
<input type="checkbox"/>	acetazolamide
<input type="checkbox"/>	adapin
<input type="checkbox"/>	aflatoxin B1
<input type="checkbox"/>	ajmaline
<input type="checkbox"/>	allopurinol
<input type="checkbox"/>	allyl alcohol
<input type="checkbox"/>	amiodarone
<input type="checkbox"/>	amitriptyline
<input type="checkbox"/>	amphotericin B

Gene set: Save Delete Set all... Clear rules

Gene/probe: Match type:

Rank

② Select "Set:downregulated_WY"

Sort by name Select all Unselect all

Specify at least one gene symbol to rank compounds according to their effect.

Data... Rat In vivo Liver Repeat

Compound

Gene set: Setdownregulated_WY Save Delete **Set all...** Clear rules

- 1% cholesterol + 0.25% sodium cholate
- 2,4-dinitrophenol
- WY-14643
- acarbose
- acetamide
- acetamidofluorene
- acetaminophen
- acetazolamide
- adapin
- ajmaline
- allopurinol
- allyl alcohol
- amiodarone
- amitriptyline
- amphotericin B
- aspirin
- azathioprine
- bendazac
- benzbromarone
- benzydaron

Sort by name Select all Unselect all

Gene/probe	Match type
<input checked="" type="checkbox"/> 1385005_at	Total upregulation
<input checked="" type="checkbox"/> 1370779_x_at	Total upregulation
<input checked="" type="checkbox"/> 1384580_at	Total upregulation
<input checked="" type="checkbox"/> 1370964_at	Total upregulation
<input checked="" type="checkbox"/> 1369864_a_at	Total upregulation
<input checked="" type="checkbox"/> 1374251_at	Total upregulation
<input checked="" type="checkbox"/> 1389725_at	Total upregulation
<input checked="" type="checkbox"/> 1377048_at	Total upregulation
<input checked="" type="checkbox"/> 1392713_a_at	Total upregulation
<input checked="" type="checkbox"/> 1369044_a_at	Total upregulation
<input checked="" type="checkbox"/> 1390783_at	Total upregulation
<input checked="" type="checkbox"/> 1371237_a_at	Total upregulation
<input checked="" type="checkbox"/> 1398759_at	Total upregulation
<input checked="" type="checkbox"/> 1383165_at	Total upregulation

② Click

① Select "Total downregulation"

Specify at least one gene symbol to rank compounds according to their effect.

Data: [Rat](#) | [In vivo](#) | [Liver](#) | [Repeat](#)

Compound

Gene set: [Set downregulated_WY](#) | [Save](#) | [Delete](#) | [Set all...](#) | [Clear rules](#)

Compound	Gene/probe	Match type
<input type="checkbox"/> 1% cholesterol + 0.25% sodium cholate	<input checked="" type="checkbox"/> 1365005_at	Total downregulation ↓
<input type="checkbox"/> 2,4-dinitrophenol	<input checked="" type="checkbox"/> 1370775_x_at	Total upregulation ↓
<input type="checkbox"/> WY-14643	<input checked="" type="checkbox"/> 1364580_at	Total upregulation ↓
<input type="checkbox"/> acarbose	<input checked="" type="checkbox"/> 1362778_at	Total upregulation ↓
<input type="checkbox"/> acetamide		
<input type="checkbox"/> acetamidofluorene		
<input type="checkbox"/> acetaminophen		
<input type="checkbox"/> acetazolamide		
<input type="checkbox"/> adapin		
<input type="checkbox"/> ajmaline	<input checked="" type="checkbox"/> 1374251_at	Total upregulation ↓
<input type="checkbox"/> allopurinol	<input checked="" type="checkbox"/> 1369725_at	Total upregulation ↓
<input type="checkbox"/> allyl alcohol	<input checked="" type="checkbox"/> 1377048_at	Total upregulation ↓
<input type="checkbox"/> amiodarone		
<input type="checkbox"/> amitriptyline	<input checked="" type="checkbox"/> 1362713_a_at	Total upregulation ↓
<input type="checkbox"/> amphotericin B	<input checked="" type="checkbox"/> 1369044_a_at	Total upregulation ↓
<input type="checkbox"/> aspirin	<input checked="" type="checkbox"/> 1360783_at	Total upregulation ↓
<input type="checkbox"/> azathioprine	<input checked="" type="checkbox"/> 1371237_a_at	Total upregulation ↓
<input type="checkbox"/> bendazac	<input checked="" type="checkbox"/> 1368759_at	Total upregulation ↓
<input type="checkbox"/> benzbromarone		
<input type="checkbox"/> benzodolone	<input checked="" type="checkbox"/> 1363165_at	Total upregulation ↓

Override all rule parameters by copying the first rule?

[キャンセル](#) [OK](#)

① Click



Specify at least one gene symbol to rank compounds according to their effect.

Data... [Rat](#) | [in vivo](#) | [Liver](#) | [Repeat](#)

Compound

Gene set: [Set:downregulated_WY](#) | [Save](#) | [Delete](#) | [Set all...](#) | [Clear rules](#)

- 1% cholesterol + 0.25% sodium cholate
- 2,4-dinitrophenol
- WY-14643
- acarbose
- acetamide
- acetamidofluorene
- acetaminophen
- acetazolamide
- adapin
- ajmaline
- allopurinol
- allyl alcohol
- amiodarone
- amitriptyline
- amphotericin B
- aspirin
- azathioprine
- bendazac
- benzbromarone
- benzoclonone

[Sort by name](#) | [Select all](#) | [Unselect all](#)

Gene/probe

Match type

<input checked="" type="checkbox"/>	1385005_at	Total downregulation ↓
<input checked="" type="checkbox"/>	1370779_x_at	Total downregulation ↓
<input checked="" type="checkbox"/>	1384580_at	Total downregulation ↓
<input checked="" type="checkbox"/>	1382778_at	Total downregulation ↓
<input checked="" type="checkbox"/>	1370964_at	Total downregulation ↓
<input checked="" type="checkbox"/>	1369864_a_at	Total downregulation ↓
<input checked="" type="checkbox"/>	1374251_at	Total downregulation ↓
<input checked="" type="checkbox"/>	1389725_at	Total downregulation ↓
<input checked="" type="checkbox"/>	1377048_at	Total downregulation ↓
<input checked="" type="checkbox"/>	1392713_a_at	Total downregulation ↓
<input checked="" type="checkbox"/>	1369044_a_at	Total downregulation ↓
<input checked="" type="checkbox"/>	1390783_at	Total downregulation ↓
<input checked="" type="checkbox"/>	1371237_a_at	Total downregulation ↓
<input checked="" type="checkbox"/>	1398759_at	Total downregulation ↓
<input checked="" type="checkbox"/>	1383185_at	Total downregulation ↓

① Match type: "Total downregulation"

② Scroll down



Specify at least one gene symbol to rank compounds according to their effect.



Data...

Compound

- 1% cholesterol + 0.25% sodium cholate
- 2,4-dinitrophenol
- WY-14643
- acarbose
- acetamide
- acetamidofluorene
- acetaminophen
- acetazolamide
- adapin
- ajmaline
- allopurinol
- allyl alcohol
- amiodarone
- amitriptyline
- amphotericin B
- aspirin
- azathioprine
- bendazac
- benzbromarone
- benzdicarone

Sort by name

Select all

Unselect all

<input checked="" type="checkbox"/>	1390873_at	Total downregulation
<input checked="" type="checkbox"/>	1369491_at	Total downregulation
<input checked="" type="checkbox"/>	1385001_at	Total downregulation
<input checked="" type="checkbox"/>	1369632_a_at	Total downregulation
<input checked="" type="checkbox"/>	1369440_at	Total downregulation
<input checked="" type="checkbox"/>	1369953_at	Total downregulation
<input checked="" type="checkbox"/>	1383111_at	Total downregulation
<input checked="" type="checkbox"/>	1377472_at	Total downregulation
<input checked="" type="checkbox"/>	1383641_at	Total downregulation
<input checked="" type="checkbox"/>	1368239_at	Total downregulation
<input checked="" type="checkbox"/>	1369973_at	Total downregulation
<input checked="" type="checkbox"/>	1387913_at	Total downregulation
<input checked="" type="checkbox"/>	1368543_at	Total downregulation
<input checked="" type="checkbox"/>	1387053_at	Total downregulation
<input checked="" type="checkbox"/>	1367998_at	Total downregulation
<input type="checkbox"/>		Total downregulation

Rank



① Click

Tools [Help / feedback](#)

Start | **Sample groups** | **View data** | **Compound ranking** | Pathologies | Sample details | My data

Specify at least one gene symbol to rank compounds

Data...

① Click for next analysis

Compound		
	Score	
<input type="checkbox"/> WY-14643	34.985 (1)	
<input type="checkbox"/> fenofibrate	25.208 (2)	
<input type="checkbox"/> methacyllene	19.388 (3)	
<input type="checkbox"/> nitrosodiethylamine	11.938 (4)	
<input type="checkbox"/> thioacetamide	9.803 (5)	
<input type="checkbox"/> ethambutol	9.78 (6)	
<input type="checkbox"/> methylene dianiline	9.588 (7)	
<input type="checkbox"/> ethionamide	9.428 (8)	
<input type="checkbox"/> acetamidofluorene	8.304 (9)	
<input type="checkbox"/> meloxicam	5.085 (10)	
<input type="checkbox"/> gemfibrozil	5.072 (11)	
<input type="checkbox"/> terbinafine	5.048 (12)	

Result of compound ranking

<input checked="" type="checkbox"/> 1390673_at	Total downregulation
<input checked="" type="checkbox"/> 1369491_at	Total downregulation
<input checked="" type="checkbox"/> 1385001_at	Total downregulation
<input checked="" type="checkbox"/> 1369632_a_at	Total downregulation
<input checked="" type="checkbox"/> 1369440_at	Total downregulation
<input checked="" type="checkbox"/> 1388053_at	Total downregulation
<input checked="" type="checkbox"/> 1383111_at	Total downregulation
<input checked="" type="checkbox"/> 1383641_at	Total downregulation
<input checked="" type="checkbox"/> 1368239_at	Total downregulation
<input checked="" type="checkbox"/> 1369973_at	Total downregulation
<input checked="" type="checkbox"/> 1387913_at	Total downregulation
<input checked="" type="checkbox"/> 1368543_at	Total downregulation
<input checked="" type="checkbox"/> 1387053_at	Total downregulation
<input checked="" type="checkbox"/> 1367068_at	Total downregulation
<input type="checkbox"/>	Total downregulation

Welch's t-test filtering

The screenshot shows a software interface with a menu bar (File, Gene Sets, View, Tools, Help / feedback) and a sidebar on the left. The main area displays a table of probe data. A red dashed box highlights the 'Show all' button in the top left, with a red arrow pointing to it and a circled '1' next to the text 'Click to show all probes'.

Start **Show all** ← ① Click to show all probes

Here you have defined. Click on column headers to sort data.

WY-14643_M_29day WY-14643/Middle/29 day WY-14643_M_4day WY-14643/Middle/4 day WY-14643_M_8day WY-14643/Middle/8 day

Show More p-value columns downregulated_WY New Edit

Probe	WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643_M...
1371237_at	-1.098	-2.128	-2.372	-2.855
1368882_at	-1.103	-2.41	-1.582	-1.181
1384560_at	-1.163	-1.617	-1.121	-1.527
1387913_at	-1.166	-1.623	-1.735	-1.645
1373270_at	-1.233	-1.265	-1.364	-1.37
1367998_at	-1.258	-1.503	-2.14	-1.332
1370964_at	-1.264	-1.225	-1.188	-1.505
1392713_at	-1.275	-1.208	-1.056	-1.333
1383641_at	-1.301	-1.959	-1.522	-1.847
1377051_at	-1.331	-1.105	-1.121	-1.579
1368239_at	-1.344	-1.151	-1.179	-1.295
1368036_at	-1.39	-1.423	-1.22	-1.422
1374157_at	-1.429	-1.914	-1.04	-1.874

File Gene Sets View **Tools** ① Click

Start Sample groups ② Select

Here you can inspect expression

WY-14643_M_15day : WY-14643 Show heat map

Log2 (fold change) 1-25 of 31,042 Show More p-value columns All Probes New Edit

Gene Symbol	Probe Title	Probe	WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643_M...
Acot1	acyl-CoA thioesterase 1	1398250_at	10.307	10.605	10.941	9.335
Acp3	aquaporin 3	1387100_at	6.366	6.064	7.499	7.185
LOC100911217	adipogenin-like	1376296_at	6.15	6.052	5.391	5.681
		1384474_at	7.818	6.932	6.184	6.079
Chma2	cholinergic receptor - nicotinic - alpha 2 (neuronal)	1387574_at	7.573	6.721	3.357	4.693
Hdc	histidine decarboxylase	1370491_a_at	7.257	7.385	7.247	7.373
Fabp3	fatty acid binding protein 3 - muscle and heart	1387660_at	6.633	6.71	6.627	6.918
RGD1305928	hypothetical LOC300207	1380536_at	6.615	6.9	5.616	5.754
Acot1 Acot2	acyl-CoA thioesterase 2	1388211_s_at	6.489	6.167	6.76	6.733
Fbp2	fructose-1 -6-bisphosphatase 2	1368622_at	6.078	5.799	4.471	6.139
Abhd3	abhydrolase domain containing 3	1382137_at	5.922	4.042	5.106	1.753
		1383757_at	5.757	5.389	(absent)	5.54
Cpt1b	carnitine palmitoyltransferase 1b - muscle	1367742_at	5.648	5.414	5.372	5.466
Acp7	aquaporin 7	1368317_at	5.638	4.667	4.852	4.205
Spink3	serine peptidase inhibitor - Kazal type 3	1368447_x_at	5.097	4.123	1.297	2.692
LOC100912469 Scd	stearoyl-CoA desaturase (delta-9-desaturase)	1367668_a_at	4.966	6.296	0.836	2.891
	similar to Glutamyl-peptide					

File Gene Sets View Tools Help / feedback

Start | Sample groups **View** | Sample details | My data

Here you can inspect expression values for the sample groups you have selected. Click on column headers to sort data.

WY-14643_M_15day WY-14643/Middle/15 day WY-14643_M_29day WY-14643/Middle/29 day WY-14643_M_4day WY-14643/Middle/4 day WY-14643_M_8day WY-14643/Middle/8 day

Log2 (fold change) 1.25 of 31,042 More p-value columns All Probes New Edit

WY-14643_M_29day WY-14643_M_4day **Add T-Test** **Add U-Test** Add fold-change difference Remove tests

Gene Symbol	Probe Title	Probe	WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643_M...
Acot1	acyl-CoA thioesterase 1	1398250_at	10.307	10.505	10.941	9.335
Aqp3	aquaporin 3	1388211_s_at	6.064	6.064	7.499	7.185
LOC10091121	adipogenin-like	1388211_s_at	6.052	6.052	5.391	5.881
		1384474_at	7.818	6.932	6.184	5.979
Chma2	cholinergic receptor - nicotinic - alpha 2 (neuronal)	1387574_at	7.573	6.721	3.357	4.690
		1387574_at	7.370	7.385	7.247	7.373
		1387574_at	6.633	6.71	6.627	6.918
RGD1		1387574_at	6.9	6.9	5.618	5.754
Acot1	acyl-CoA thioesterase 2	1388211_s_at	6.489	6.167	6.76	6.733
Acot2	acyl-CoA thioesterase 2	1388211_s_at	6.489	6.167	6.76	6.733
Fbp2	fructose-1,6-bisphosphatase 2	1368622_at	6.076	5.799	4.471	6.139
Abhd3	abhydrolase domain containing 3	1382137_at	5.922	4.042	5.105	1.753
		1383757_at	5.757	5.389	(absent)	5.54
Cpt1b	carnitine palmitoyltransferase 1b - muscle	1367742_at	5.648	5.414	5.372	5.458
Aqp7	aquaporin 7	1388317_at	5.638	4.667	4.852	4.205
Spink3	serine peptidase inhibitor - Kazal type 3	1368447_x_at	5.097	4.123	1.297	2.692
LOC100912489	stearoyl-CoA desaturase (delta-9-	1367668_s_at	4.998	6.305	6.636	7.991

① Newly appears

② Select "WY-14643_M_4day" and "WY-14643_M_8day"

③ Click

① Newly appears

② Click

File Gene Sets View Tools Help / feedback

Start Sample groups **View data** Compound ranking Pathologies Sample details My data

Here you can inspect expression values for the sample groups you have defined. Click on column headers to sort data.

WY-14643_M_15day :WY-14643/Middle/15 day WY-14643_M_29day :WY-14643/Middle/29 day WY-14643_M_4day :WY-14643/Middle/4 day WY-14643_M_8day :WY-14643/Middle/8 day

Log2 (fold change) 1 1-25 of 31,042 Show More p-value columns All Probes New Edit

WY-14643_M_4day WY-14643_M_8day Add T-Test Add U-Test Add fold-change difference Remove tests

I	Probe Title	Probe	WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643_M...	(T) p(WY-1...
	acyl-CoA thioesterase 1	1386250_at	10.307	10.505	10.941	9.335	0.001
	aquaporin 3	1387100_at	8.368	8.064	7.499	7.185	0.997
7	adipogenin-like	1376296_at	8.15	6.052	5.391	5.881	0.434
		1384474_at	7.818	6.932	6.184	5.979	0.703
	cholinergic receptor - nicotinic - alpha 2 (neuronal)	1387574_at	7.573	6.721	3.357	4.603	0.027
	histidine decarboxylase	1370491_x_at	7.257	7.385	7.247	7.373	0.693
	fatty acid binding protein 3 - muscle and heart	1367660_at	6.833	6.71	6.627	6.916	0.37
	hypothetical LOC300207	1380536_at	6.815	6.9	5.616	5.754	0.682
	acyl-CoA thioesterase 2	1388211_x_at	6.489	6.167	6.76	6.733	0.879
	fructose-1-6-bisphosphatase 2	1368622_at	6.078	5.799	4.471	6.139	0.007
	abhydrolase domain containing 3	1382137_at	5.922	4.042	5.105	1.753	0.069
		1383757_at	5.757	5.389	(absent)	5.54	(absent)
	camitine palmitoyltransferase 1b - muscle	1367742_at	5.648	5.414	5.372	5.456	0.755
	aquaporin 7	1368317_at	5.638	4.667	4.852	4.205	0.134
	serine peptidase inhibitor - Kazal type 3	1368447_x_at	5.097	4.123	1.297	2.692	0.07
8	stearoyl-CoA desaturase (delta-5)	1367668_x_at	4.885	5.296	5.816	5.891	0.001

Here you can inspect expression values for the sample groups you have defined. Click on column headers to sort data.

WY-14643_M_15day : WY-14643/Middle/15 day WY-14643_M_29day : WY-14643/Middle/29 day WY-14643_M_4day : WY-14643/Middle/4 day WY-14643_M_8day : WY-14643/Middle/8 day

Log2 (fold change) 1-25 of 31,042 Show More p-value columns All Probes New Edit

WY-14643_M_4day fold-change difference Remove tests

	Probe Title	Probe	WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643_M...	(T) p(WY-1...
	acyl-CoA thioesterase 1	13962	10.307	10.505	10.941	8.305	0.001
	aquaporin 3	138710	8.22	8.22	8.22	7.185	0.997
7	adipogenin-like	1376296_at	15	15	15	5.681	0.434
		1384474_at	81	81	81	5.979	0.703
	cholinergic receptor - nicotinic - alpha 2 (neuronal)	1387574_at	57	57	57	1.993	0.027
	histidine decarboxylase	1370491_s_at	25	25	25	6.918	0.37
	fatty acid binding protein 3 - muscle and heart	1387660_at	83	83	83	5.754	0.682
	hypothetical LOC300207	1380536_at	6.615	6.615	6.615	6.731	0.879
	acyl-CoA thioesterase 2	1388211_s_at	6.489	167	6.76	6.139	0.007
	fructose-1-6-bisphosphatase 2	1388622_at	6.078	5.709	4.471	1.753	0.069
	abhydrolase domain containing 3	1382137_at	5.923	5.923	5.106	5.54	(absent)
		1383757_at	5.757	5.389	(absent)	5.54	(absent)
	carnitine palmitoyltransferase 1b - muscle	1387742_at	5.648	5.414	5.372	5.455	0.755
	aquaporin 7	1388317_at	5.638	4.667	4.852	4.205	0.134
	serine peptidase inhibitor - Kazal type 3	1388447_x_at	5.097	4.123	1.297	2.692	0.07
9	stearoyl-CoA desaturase (delta-9-	1387968_s_at	4.955	6.705	6.935	7.891	0.001

① Newly appears



Edit filter

Please choose a bound for '(T) p(WY-14643_M_4day, WY-14643_M_8day)'. Examples: 2.1, 1E-3

OK Clear filter

② Input 0.01



③ Click



① 618 probes are extracted

The screenshot shows a web-based interface for analyzing gene expression data. At the top, there are navigation tabs: "Start", "Sample groups", "My data", "Compound ranking", "Pathologies", "Sample details", and "My data". Below the tabs, a text box explains that users can inspect expression values for sample groups. A list of sample groups is shown, including "WY-14643_M_15day" and "WY-14643_M_29day". A filter bar indicates "Log2 (fold change)" and "1-25 of 618" probes are currently displayed. A "New" button is highlighted with a red dashed box. Below the filter bar, there are buttons for "Add T-Test", "Add U-Test", "Add fold-change difference", and "Remove". The main area is a table of probe data with columns for Gene Symbol, Probe Title, Probe ID, and expression values for different sample groups. A red arrow points to the "New" button, and another red arrow points to the "Add T-Test" button. A large text overlay with a red border and shadow reads "② Save these probes as 'M4vsM8_p0.01'".

Gene Symbol	Probe Title	Probe	WY-14643_M_...	WY-14643_M_...	WY-14643_M_...	WY-14643_M_...
Acot1	acyl-CoA thioesterase 1	1308250_at				9.335
Fbp2	fructose-1,6-bisphosphatase 2	1308622_at				6.139
LOC100912469 Scd	stearoyl-CoA desaturase (delta-9-desaturase)	1367666_a_at	4.566			2.891
Hpgd	hydroxyprostaglandin dehydrogenase 15 (NAD)	1367631_at	4.505	3.303	1.831	4.195
Asns	asparagine synthetase (glutamine-hydrolyzing)	1367925_at	4.090	4.068	1.995	3.204
Aldh1a1	aldehyde dehydrogenase 1 family - member A1	1367022_at	3.688	3.437	3.251	3.654
Ech1	enoyl CoA hydratase 1 - peroxisomal	1366885_at	3.364	3.451	3.212	3.611
Ethadh	enoyl-CoA - hydratase/3-hydroxyacyl CoA dehydrogenase	1368283_at	3.044	3.139	3.129	3.057
Acaa1a Acaa1b	acetyl-Coenzyme A acyltransferase 1B	1367783_a_at	2.744	3.016	2.894	3.253
Sort1	sortilin-related receptor - LDLR class A repeats-containing	1394786_at	2.489	2.036	1.326	1.744
Ten1	TEN1 telomerase capping complex subunit	1363230_at	2.456	3.131	0.812	1.949
Miox	myo-inositol oxygenase	1367937_at	2.306	2.581	2.701	2.02
Lamc2	laminin - gamma 2	1379340_at	1.869	(absent)	1.031	2.952
...

② Save these probes as "M4vsM8_p0.01"

Uploading user data to aid the investigation

File Gene Sets View Tools Help / feedback

Start | Sample groups | **View data** | Compound ranking | Pathologies | Sample details | **My data**


Here you can inspect expression values for the sample groups you have defined. Click on column headers to sort data.

WY-14643_M_15day_WY-14643/Middle/15 day | WY-14643_M_29day_WY-14643/Middle/29 day | WY-14643_M_4day_WY-14643/M... | WY-14643_M_8day_WY-14643/Middle/8 day

Log2 (fold change) 1-25 of 618 Show More p-value columns M4vsM8_p0.01 New Edit

WY-14643_M_4day WY-14643_M_8day Add T-Test Add U-Test Add fold-change difference Remove tests

Gene Symbol	Probe Title	Probe	WY-14643_M...	WY-14643_M...	WY-14643_M...	WY-14643_M...
Acot1	acyl-CoA thioesterase 1	1368250_at	10.307	10.505	10.941	9.335
Fbp2	fructose-1,6-bisphosphatase 2	1368622_at	6.078	5.799	4.471	6.139
LOC100912489 Scd	stearoyl-CoA desaturase (delta-9-desaturase)	1367668_a_at	4.985	6.295	0.636	2.891
Hpgd	hydroxyprostaglandin dehydrogenase 15 (NAD)	1367631_at	4.595	3.303	1.831	4.185
Asns	asparagine synthetase (glutamine-hydrolyzing)	1367925_at	4.096	4.068	1.995	3.204
Ald1a1	aldehyde dehydrogenase 1 family - member A1	1367022_at	3.688	3.437	3.251	3.654
Ech1	enoyl CoA hydratase 1 - peroxisomal	1368885_at	3.354	3.451	3.212	3.611
Ehhadh	enoyl-CoA - hydratase/3-hydroxyacyl CoA dehydrogenase	1368283_at	3.044	3.139	3.129	3.557
Acaa1a Acaa1b	acetyl-Coenzyme A acyltransferase 1B	1367783_a_at	2.744	3.016	2.894	3.253
Sor1	sortilin-related receptor - LDLR class A repeats-containing	1394786_at	2.499	2.036	1.326	1.744
Ten1	TEN1 telomerase capping complex subunit	1363230_at	2.456	3.131	0.812	1.949
Miox	myo-inositol oxygenase	1367937_at	2.308	2.581	2.701	2.03
Lamc2	laminin - gamma 2	1379340_at	1.889	(absent)	1.031	2.952
Inr5	invariant 5	1368742_at	1.411	1.368	0.888	1.491





② Click

① Create files to be uploaded, by following the format of example files

Edit batch

ID: Amlodipine **1 Edit**

Private comments

Visibility: Private

Metadata file (TSV): Choose Files no files selected Please upload a file

Normalized data file (CSV): Choose Files no files selected Please upload a file **2 Upload the files**

Affymatrix calls file (CSV) (optional): Choose Files no files selected Please upload a file

OK Cancel **3 Click**

Sample details My data

Dataset

Note: If the uploaded data doesn't appear, click here and check the box of "My data"

Please define at one sample group per treatment group

Data... Rat In vivo Liver Repeat

① Newly appears in "Sample groups" page

cholesterol + 0.25% sodium

2,4-dinitrophenol

Amlodipine [user]

GW3965 [user]

PF-04923503

WY-14643

acarbose

acetamide

acetamidofluorene

acetaminophen

acetazolamide

adapin

alpraline

allopurinol

allyl alcohol

amiodarone

Sort by name Select all Unselect all

② Save WY-14643 single dose data and Amlodipine data as introduced above

Active	Group	#Treated samples	#Control samples	Edit	Delete
<input checked="" type="checkbox"/>	Amlodipin_L_24hr	3	14	Edit	Delete
<input checked="" type="checkbox"/>	Amlodipin_L_6hr	3	20	Edit	Delete
<input checked="" type="checkbox"/>	Amlodipin_M_3day	3	12	Edit	Delete
<input checked="" type="checkbox"/>	WY-14643_M_15day	3	3	Edit	Delete
<input checked="" type="checkbox"/>	WY-14643_M_24hr	3	3	Edit	Delete
<input checked="" type="checkbox"/>	WY-14643_M_29day	3	3	Edit	Delete
<input checked="" type="checkbox"/>	WY-14643_M_3hr	3	3	Edit	Delete
<input checked="" type="checkbox"/>	WY-14643_M_4day	3	3	Edit	Delete
<input checked="" type="checkbox"/>	WY-14643_M_6hr	3	3	Edit	Delete

Delete all groups Next: View data

③ Click

② Click

③ Select

① If M4vsM8_p0.01 (n=618) is not displayed, click "Gene Sets" and select M4vsM8_p0.01

Gene Symbol	Probe Title	Probe	Amlodipin_...	Amlodipin_...	Amlodipin_...	WY-14643_M_...
Cttnbp2	cortactin binding protein 2	1382913_at	0.906	0.138	0.233	-0.418
		1382236_at	0.797	0.446	-0.119	0.084
						-2.618
						0.678
						0.235
						0.411
Ald1a1	aldehyde dehydrogenase 1 family - member A1	1387022_at	0.642	0.223	-0.073	3.688
Adh7	alcohol dehydrogenase 7 (class IV) - mu or sigma polypeptide	1386072_at	0.63	0.011	-0.544	0.96
Sv2b	synaptic vesicle glycoprotein 2b	1389628_at	0.572	0.444	-0.164	0.221
Plekhb2	pleckstrin homology domain containing - family B (evectins) member 2	1376137_at	0.548	-0.902	0.318	0.56
ipo5	importin 5	1396742_at	0.516	-0.664	0.567	1.411
		1379544_at	0.516	0.547	-0.162	0.154
		1386600_at	0.5	-0.061	0.499	0.319
Dst	dystonin	1395274_at	0.454	-0.142	0.43	0.163
Igaf6	integrin - alpha 6	1393558_at	0.438	-0.156	0.498	0.154

Heatmap

Value: Log2 fold change

1.87e4

Settings

Dendrogram

Log-axis

Row

Method: ward.D2

Distance: pearson

Column

Method: ward.D2

Distance: pearson

Update

Enrichment... Close Save as gene set...

③ Save the image file

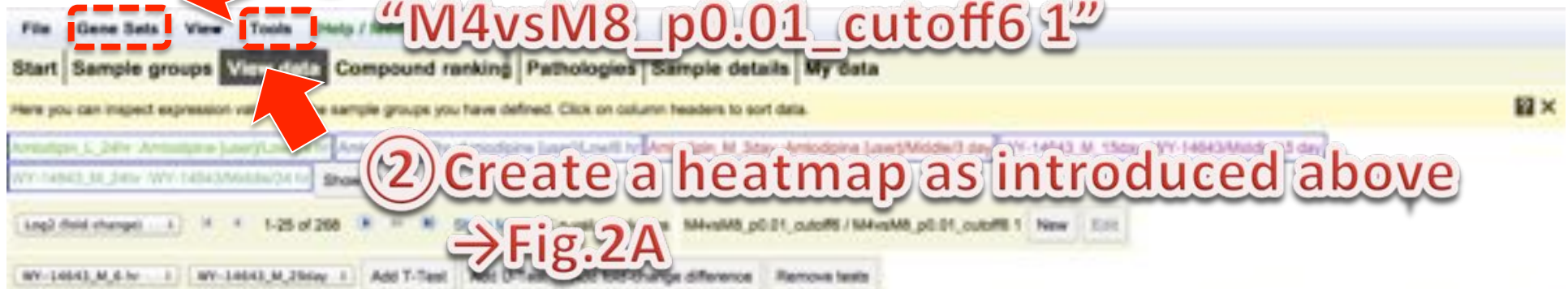
① Select "ward.D2", "pearson" and click "Update"

② Select cut-off=6 by pointing and click

④ Save the gene lists as "M4vsM8_p0.01_cutoff6"

The screenshot shows a heatmap visualization with a dendrogram on the left. A vertical red dashed box highlights a column of data. A red arrow points from the 'Settings' panel to the 'Update' button. Another red arrow points from the 'Settings' panel to the 'Save as gene set...' button. A third red arrow points from the 'Settings' panel to the 'ward.D2' method dropdown. A fourth red arrow points from the 'Settings' panel to the 'pearson' distance dropdown. A fifth red arrow points from the 'Settings' panel to the 'Update' button. A sixth red arrow points from the 'Settings' panel to the 'Save as gene set...' button. A seventh red arrow points from the 'Settings' panel to the 'Update' button. A eighth red arrow points from the 'Settings' panel to the 'Save as gene set...' button.

① Click "Gene Sets" and select "M4vsM8_p0.01_cutoff6 1"



The screenshot shows a software interface with a menu bar at the top containing 'File', 'Gene Sets', 'View', and 'Tools'. The 'Gene Sets' menu is highlighted with a red dashed box, and a red arrow points to it. Below the menu bar, there are several tabs: 'Start', 'Sample groups', 'View', 'Compound ranking', 'Pathologies', 'Sample details', and 'My data'. The 'View' tab is active. Below the tabs, there is a text area with instructions: 'Here you can inspect expression values for the sample groups you have defined. Click on column headers to sort data.' Below this, there is a table with columns for 'Log2 fold change' and '1-25 of 266'. A red arrow points to the 'View' tab. Below the table, there are several buttons: 'Add T-Test', 'Add D-ratio', 'Add log2 fold change difference', and 'Remove tests'. The text 'M4vsM8_p0.01_cutoff6 1' is visible in the interface.

② Create a heatmap as introduced above
→ Fig.2A

Fig.2B: Select M4vsM8_p0.01_cutoff6 2 and create a heatmap

Fig.2C: Select M4vsM8_p0.01_cutoff6 3 and create a heatmap

② export gene lists to TargetMine
as introduced above

Supplementary Table 4: summary of pathway enrichment analysis by TargetMine
(M4vsM8_p0.01_cutoff6 1,2,3)

Supplementary Table 5: gene list of M4vsM8_p0.01_cutoff6 1

Supplementary Table 6: gene list of M4vsM8_p0.01_cutoff6 2

Supplementary Table 7: gene list of M4vsM8_p0.01_cutoff6 3