Curation of phenotypes induced or modified by chemical treatments or nutritional challenges

FCAG survey Questions October 2017

Curation of phenotypes induced or modified by chemical treatments or nutritional challenges

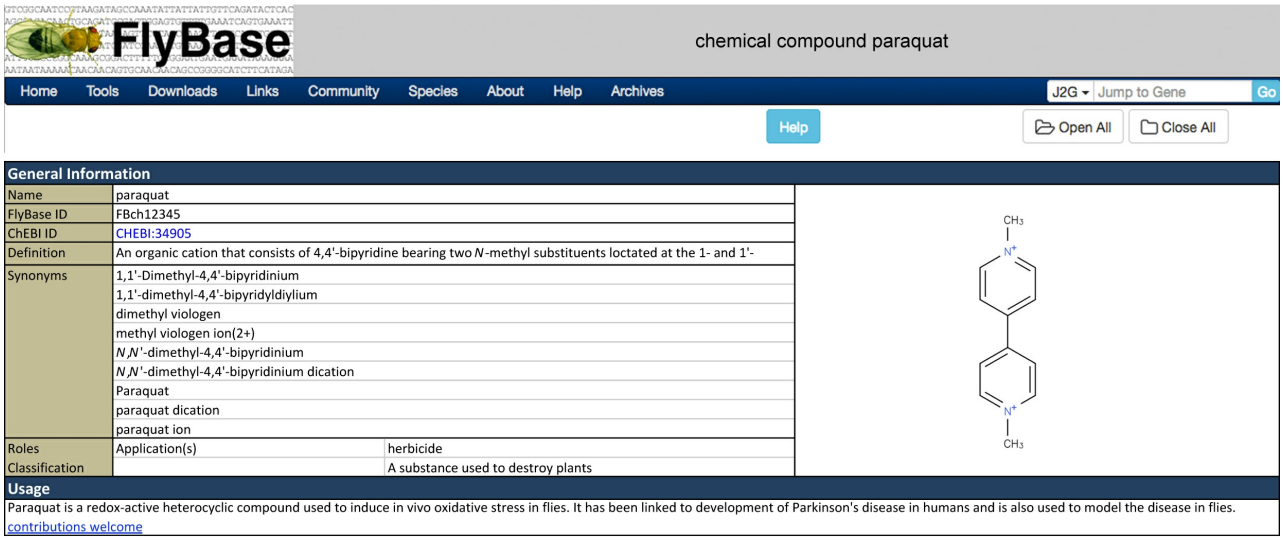
Introduction

FlyBase will start to formally curate phenotypic data induced or modified by chemical treatment (e.g. phenotypic effects caused by exposing flies to the herbicide paraquat or rotenone) and/or nutritional challenges (e.g. phenotypic effects caused by keeping flies on a diet low in iron). As part of this process new report pages for chemical compounds will be created. This survey is focused on the content and organization of these new pages.

Curation of phenotypes induced or modified by chemical treatments or nutritional challenges

General Information section

This is a mock-up of the General information section of the new chemical compound report. Most of this information will be pulled from the ChEBI website (ChEBI is a dictionary of small chemical compounds of biological interest).



1. Is there any other general information you would like to see displayed in this section?

- ◯ No, this is sufficient
- ◯ Yes – I'd like you to add the following information:
  Please specify:

2. We are considering including a Usage field (placed just under the General Information section as in the mock-up above), where notes on the usage within the Drosophila field would be summarized in a brief narrative for commonly employed compounds (please look at the mock-up above for an example summary). A link allowing users to send us updates and/or correction requests would be also included.
Do you think such a field should be present in the chemical compound report and would you contribute updates/corrections?

- ◯ Yes, I think such brief summaries would be very useful and I am likely to contribute updates or corrections to reports on compounds I use in my research
- ◯ Yes, I think such brief summaries would be very useful, although I am unlikely to contribute updates or corrections myself
- ◯ No, I think it is not worth the effort to produce these summaries

3. If you have any additional comments regarding the display, organization or content of this section, please write them below

Curation of phenotypes induced or modified by chemical treatments or nutritional challenges

Phenotype and Interactions Annotations sections.

The next 3 questions are to help us decide the format of the sections showing the phenotypes associated with chemical treatments. Note that we propose to divide the Phenotype Annotations section in two subsections – 'In wild-type background' and 'In mutant background'. The former would contain annotations for cases when a treatment was applied to wild-type or wild-type like flies (i.e. animals carrying mutations that are known or presumed to be phenotypically silent – e.g. driver-only controls etc.), inducing a phenotype. The latter would contain annotations for cases when a treatment was applied to genetically perturbed flies, inducing a phenotype, but no formal interaction relationship between the treatment and the genotype is described by the authors (e.g. 'Almost all Gabat^{f01602} flies raised on a sucrose-only diet die within 7 days').
The basic format for each sub-section is a tabular display with columns, which will allow users to sort the statements (alphabetically or reverse alphabetically) by clicking on the chevron symbol (^) in any given column heading.

4. Which is your preferred display style (please bear in mind that the number of columns in each section also changes the number of categories that can be used to sort the annotations by):

- ◯ Option A - side bar, all 'induced by' and 'modifier' columns are not subdivided into genotype vs. treatment columns
- ◯ Option B - no side bar, all 'induced by' and 'modifier' columns are not subdivided into genotype vs. treatment columns
- ◯ Option C - no side bar, all 'induced by' and 'modifier' columns are subdivided into genotype vs. treatment columns (> more sorting categories)

Option A

Phenotype Annotations

- In wild-type background

	phenotype ^	induced by (treatment) ^	reference	
Phenotypic class	locomotor behavior defective | adult stage	chemical treatment by diet: paraquat	(*Filograna et al., 2016*)	details
	short lived	chemical treatment by diet: paraquat	(*Filograna et al., 2016*)	details
Phenotype manifests in	*adult brain*	*chemical treatment by diet: paraquat*		

- In mutant background

	phenotype ^	induced by (genotype and/or treatment) ^	reference	
Phenotypic class	*lethal - all die before end of larval stage*	*xyz[12] AND chemical treatment by diet: paraquat*	*(hypothetical reference)*	details
Phenotype manifests in	*embryonic/larval brain | larval stage*	*xyz[12] AND chemical treatment by diet: paraquat*	*(hypothetical reference)*	details

+ Detailed Phenotypic Descriptions

Chemical Compound-Gene Interaction Annotations

- Phenotypic Data

- Modifier of (Outgoing Interactions)

	phenotype ^	induced by (genotype and/or treatment) ^	interaction ^	modifier (genotype and/or treatment) ^	reference	
Phenotypic class	*locomotor behavior defective | adult stage*	*park[25]/park[25]*	*is enhanced by*	*chemical treatment by diet: paraquat*	*(hypothetical reference)*	details
Phenotype manifests in	*indirect flight muscle | adult stage*	*park[25]/park[25]*	*is enhanced by*	*chemical treatment by diet: paraquat*	*(hypothetical reference)*	details

- Detailed Phenotypic Descriptions

- Modified by (Incoming Interactions)

	phenotype ^	induced by (genotype and/or treatment) ^	interaction ^	modifier (genotype and/or treatment) ^	reference	
Phenotypic class	locomotor behavior defective | adult stage	chemical treatment by diet: paraquat	is NOT suppressed by	Sod1[Scer\UAS.cWa]; Scer\GAL4[da.PU]	(*Filograna et al., 2016*)	details
	short lived	chemical treatment by diet: paraquat	is NOT suppressed by	Sod1[Scer\UAS.cWa]; Scer\GAL4[da.PU]	(*Filograna et al., 2016*)	details
	locomotor behavior defective | adult stage	chemical treatment by diet: paraquat	is suppressed | partially by	Sod2[Scer\UAS.cMa]; Scer\GAL4[da.PU]	(*Filograna et al., 2016*)	details
	short lived	chemical treatment by diet: paraquat	is suppressed | partially by	Sod2[Scer\UAS.cMa]; Scer\GAL4[da.PU]	(*Filograna et al., 2016*)	details
Phenotype manifests in	*indirect flight muscle | adult stage*	*park[25]/park[25] AND chemical treatment by diet: paraquat*	*is enhanced by*	*Sod2[dsRNA.Scer\UAS.cKa]; Scer\GAL4[elav-C155]*	*(hypothetical reference)*	details

+ Detailed Phenotypic Descriptions

Chemical Compound-Chemical Compound Interaction Annotations

- Phenotypic Data

- Modifier of (Outgoing Interactions)

	phenotype ^	induced by (treatment) ^	interaction ^	modifier (treatment) ^	reference	
Phenotypic class	*long lived*	*nutrient decreased: triglyceride*	*is suppressed by*	*chemical treatment by diet: paraquat*	*(hypothetical reference)*	details
Phenotype manifests in						

- Modified by (Incoming Interactions)

	phenotype ^	induced by (treatment) ^	interaction ^	modifier (treatment) ^	reference	
Phenotypic class	*locomotor behavior defective | adult stage*	*chemical treatment by diet: paraquat*	*is enhanced by*	*chemical treatment by diet: rotenone*	*(hypothetical reference)*	details
Phenotype manifests in						

+ Detailed Phenotypic Descriptions

Option B

Phenotype Annotations

- In wild-type background

phenotype (class)	induced by (treatment)	reference	
locomotor behavior defective | adult stage	chemical treatment by diet: paraquat	(*Filograna et al., 2016*)	details
short lived	chemical treatment by diet: paraquat	(*Filograna et al., 2016*)	details

phenotype (manifests in)	induced by (treatment)	reference	
adult brain	*chemical treatment by diet: paraquat*	*(hypothetical reference)*	details

- In mutant background

phenotype (class)	induced by (genotype and/or treatment)	reference	
lethal - all die before end of larval stage	*xyz[12] AND chemical treatment by diet: paraquat*	*(hypothetical reference)*	details

phenotype (manifests in)	induced by (genotype and/or treatment)	reference	
embryonic/larval brain | larval stage	*xyz[12] AND chemical treatment by diet: paraquat*	*(hypothetical reference)*	details

+ Detailed Phenotype Descriptions

Chemical Compound-Gene Interaction Annotations

- Phenotypic Data

- Modifier of (Outgoing Interaction)

phenotype (class)	induced by (genotype and/or treatment)	interaction	modifier (genotype and/or treatment)	reference	
locomotor behavior defective | adult	*park[25]/park[25]*	*is enhanced by*	*chemical treatment by diet: paraquat*	*(hypothetical reference)*	details

phenotype (manifests in)	induced by (genotype and/or treatment)	interaction	modifier (genotype and/or treatment)	reference	
indirect flight muscle | adult stage	*park[25]/park[25]*	*is enhanced by*	*chemical treatment by diet: paraquat*	*(hypothetical reference)*	details

- Modified by (Incoming Interactions)

phenotype (class)	induced by (genotype and/or treatment)	interaction	modifier (genotype and/or treatment)	reference	
locomotor behavior defective | adult stage	chemical treatment by diet: paraquat	is NOT suppressed by	Sod1[Scer\UAS.cWa]; Scer\GAL4[da.PU]	(*Filograna et al., 2016*)	details
short lived	chemical treatment by diet: paraquat	is NOT suppressed by	Sod1[Scer\UAS.cWa]; Scer\GAL4[da.PU]	(*Filograna et al., 2016*)	details
locomotor behavior defective | adult stage	chemical treatment by diet: paraquat	is suppressed | partially by	Sod2[Scer\UAS.cMa]; Scer\GAL4[da.PU]	(*Filograna et al., 2016*)	details
short lived	chemical treatment by diet: paraquat	is suppressed | partially by	Sod2[Scer\UAS.cMa]; Scer\GAL4[da.PU]	(*Filograna et al., 2016*)	details

phenotype (manifests in)	induced by (genotype and/or treatment)	interaction	modifier (genotype and/or treatment)	reference	
indirect flight muscle | adult stage	*park[25]/park[25] AND chemical treatment by diet: paraquat*	*is enhanced by*	*Sod2[dsRNA.Scer\UAS.cKa]; Scer\GAL4[elav-C155]*	*(hypothetical reference)*	details

+ Detailed Phenotype Descriptions

Chemical Compound-Chemical Compound Interaction Annotations

- Phenotypic Data

- Modifier of (Outgoing Interaction)

phenotype (class)	induced by (treatment)	interaction	modifier (treatment)	reference	
long lived	*nutrient decreased: triglyceride*	*is suppressed by*	*chemical treatment by diet: paraquat*	*(hypothetical reference)*	details

phenotype (manifests in)	induced by (treatment)	interaction	modifier (treatment)	reference

- Modified by (Incoming Interactions)

phenotype (class)	induced by (treatment)	interaction	modifier (treatment)	reference	
short lived	*chemical treatment by diet: paraquat*	*is enhanced by*	*chemical treatment by diet: rotenone*	*(hypothetical reference)*	details

phenotype (manifests in)	induced by (treatment)	interaction	modifier (treatment)	reference

+ Detailed Phenotype Descriptions

Option C

Phenotype Annotations

- In wild-type background

phenotype (class)	induced by (treatment)	reference	
locomotor behavior defective | adult stage	chemical treatment by diet: paraquat	(*Filograna et al., 2016*)	details
short lived	chemical treatment by diet: paraquat	(*Filograna et al., 2016*)	details

phenotype (manifest in)	induced by (treatment)	reference	
adult brain	*chemical treatment by diet: paraquat*	*(hypothetical reference)*	details

- In mutant background

phenotype (class)	induced by genotype	induced by treatment	reference	
lethal - all die before end of larval stage	*xyz[12]*	*AND chemical treatment by diet: paraquat*	*(hypothetical reference)*	details

phenotype (manifest in)	induced by genotype	induced by treatment	reference	
embryonic/larval brain | larval stage	*xyz[12]*	*AND chemical treatment by diet: paraquat*	*(hypothetical reference)*	details

+ Detailed Phenotype Descriptions

Chemical Compound-Gene Interaction Annotations

- Phenotypic Data

- Modifier of (Outgoing Interaction)

phenotype (class)	induced by genotype	induced by treatment	interaction	modifier genotype	modifier treatment	reference	
locomotor behavior defective | adult stage	*park[25]/park[25]*		*is enhanced by*		*chemical treatment by diet: paraquat*	*(hypothetical reference)*	details

phenotype (manifests in)	induced by genotype	induced by treatment	interaction	modifier genotype	modifier treatment	reference	
indirect flight muscle | adult stage	*park[25]/park[25]*		*is enhanced by*		*chemical treatment by diet: paraquat*	*(hypothetical reference)*	details

- Modified by (Incoming Interactions)

phenotype (class)	induced by genotype	induced by treatment	interaction	modifier genotype	modifier treatment	reference	
locomotor behavior defective | adult stage		chemical treatment by diet: paraquat	is NOT suppressed by	Sod1[Scer\UAS.cWa]; Scer\GAL4[da.PU]		(*Filograna et al., 2016*)	details
short lived		chemical treatment by diet: paraquat	is NOT suppressed by	Sod1[Scer\UAS.cWa]; Scer\GAL4[da.PU]		(*Filograna et al., 2016*)	details
locomotor behavior defective | adult stage		chemical treatment by diet: paraquat	is suppressed | partially by	Sod2[Scer\UAS.cMa]; Scer\GAL4[da.PU]		(*Filograna et al., 2016*)	details
short lived		chemical treatment by diet: paraquat	is suppressed | partially by	Sod2[Scer\UAS.cMa]; Scer\GAL4[da.PU]		(*Filograna et al., 2016*)	details

phenotype (manifests in)	induced by genotype	induced by treatment	interaction	modifier genotype	modifier treatment	reference	
indirect flight muscle | adult stage	*park[25]/park[25]*	*AND chemical treatment by diet: paraquat*	*is enhanced by*	*Sod2[dsRNA.Scer\UAS.cKa]; Scer\GAL4[elav-C155]*		*(hypothetical reference)*	details

+ Detailed Phenotype Descriptions

Chemical Compound-Chemical Compound Interaction Annotations

- Phenotypic Data

- Modifier of (Outgoing Interaction)

phenotype (class)	induced by (treatment)	interaction	modifier (treatment)	reference	
long lived	*nutrient decreased: triglyceride*	*is suppressed by*	*chemical treatment by diet: paraquat*	*(hypothetical reference)*	details

phenotype (manifests in)	induced by (treatment)	interaction	modifier (treatment)	reference

- Modified by (Incoming Interactions)

phenotype (class)	induced by (treatment)	interaction	modifier (treatment)	reference	
short lived	*chemical treatment by diet: paraquat*	*is enhanced by*	*chemical treatment by diet: rotenone*	*(hypothetical reference)*	details

phenotype (manifests in)	induced by (treatment)	interaction	modifier (treatment)	reference

+ Detailed Phenotype Descriptions

5. In the <u>Phenotype Annotations section</u>, do you like the division of annotations into 'In wild-type background' and 'In mutant background'?

- ○ Yes
- ○ Yes, but the 'In mutant background' section should be limited to annotations involving only 'simple' genotypes (single or double mutants), annotations with more complex genotypes should be displayed somewhere else
- ○ No, the Phenotype Annotation section should only contain statements describing phenotypic effects of chemical treatments/nutritional challenges in wild-type animals

6. In the Chemical compound - Gene Interaction Annotations section, do you prefer to have all interaction annotations – including those involving non-Dmel transgenes (so called 'xenogenetic' interactions) – displayed together in one Gene-Chemical Compound Interaction section or do you prefer to have a separate subsection for xenogenetic interactions?

- ◯ all together
- ◯ separate subsection for xenogenetic interactions

7. If you have any additional comments regarding the display, organization or content of the Interaction sections, please write them in the box below

Curation of phenotypes induced or modified by chemical treatments or nutritional challenges

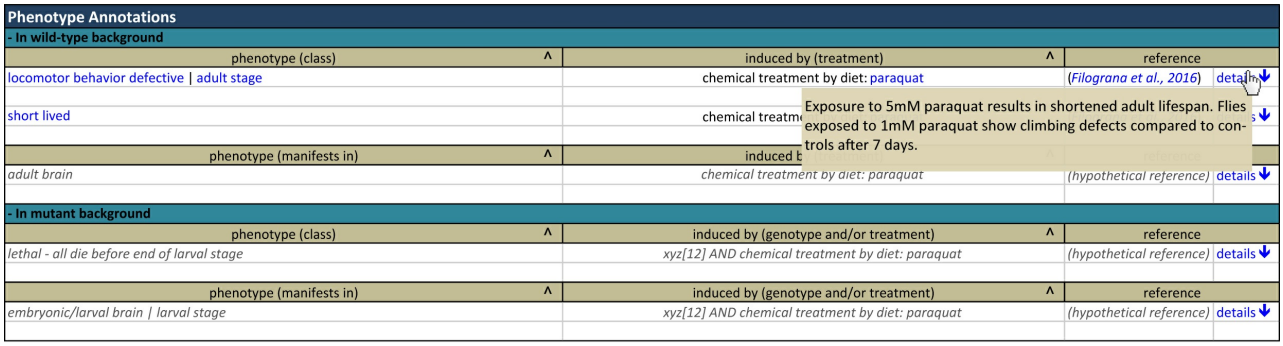
Free-text display

To improve the user experience, we propose to include a button next to each annotation statement which would link to the narrative summaries (free-text) of the observed phenotypes our curators produce during the curation process. (On the allele report pages, these summaries are currently displayed separately - in the Detailed Description or Additional Comments subsections of the Phenotypic Data or Interaction sections, respectively)

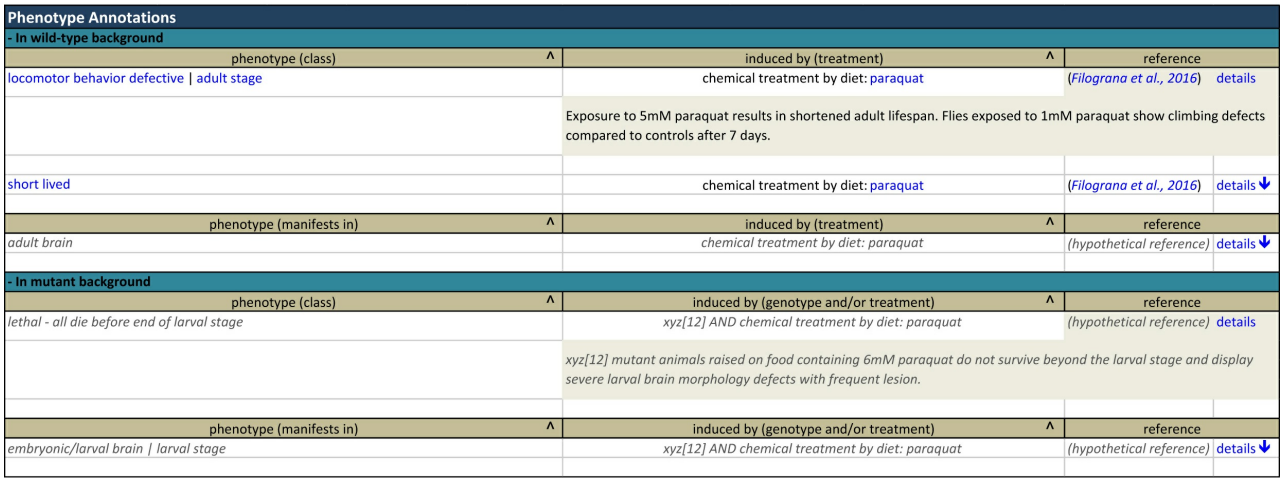
*** 8. How would you like the 'details' button to work**

- ◯ Option A: floating box with the text description appears upon mouse-over/click
- ◯ Option B: upon clicking the annotation area is enlarged to reveal the text
- ◯ I do not want the 'details' button at all, I would prefer to have all the phenotypic descriptions placed in a separate subsection
- ◯ I don't know.

Option A



Option B



Curation of phenotypes induced or modified by chemical treatments or nutritional challenges

Free-text display

9. How would you like to have the references and free-text summaries organized when the same annotation is referenced by multiple papers? Please choose your preferred display option from the ones below.

- ( ) Option A: The 'details' text-box contains free-text summaries from all the references cited for each annotation
- ( ) Option B: Annotations are repeated for each cited reference (> one reference per row), the 'details' text-box only includes the free-text summary from that particular reference. Please note that choosing this option would also mean an additional sorting category (reference)
- ( ) Option C: An icon is displayed next to each reference and clicking on it reveals the free-text summary from that particular reference

Option A

Phenotype Annotations

- In wild-type background

phenotype (class) ^	induced by (treatment) ^	reference	
locomotor behavior defective | adult stage	chemical treatment by diet: paraquat	(*Filograna et al., 2016*) + 2 more	details
	Filograna et al., 2016 Exposure to 5mM paraquat results in shortened adult lifespan. Flies exposed to 1mM paraquat show climbing defects compared to controls after 7 days. *reference 2* text-text-text *reference 3* text-text-text		
short lived	chemical treatment by diet: paraquat	(*Filograna et al., 2016*)	details

Option B

Phenotype Annotations

- In wild-type background

phenotype (class) ^	induced by (treatment) ^	reference ^	
locomotor behavior defective | adult stage	chemical treatment by diet: paraquat	(*Filograna et al., 2016*)	details
	Exposure to 5mM paraquat results in shortened adult lifespan. Flies exposed to 1mM paraquat show climbing defects compared to controls after 7 days.		
locomotor behavior defective | adult stage	chemical treatment by diet: paraquat	(*reference 2*)	details
	text-text-text		
locomotor behavior defective | adult stage	chemical treatment by diet: paraquat	(*reference 3*)	details
	text-text-text		

Option C

Clicking on the icon by the reference Filograna et al reveals the free-text for this reference

Phenotype Annotations			
- In wild-type background			
phenotype (class)	induced by (treatment)	reference	
locomotor behavior defective | adult stage	chemical treatment by diet: paraquat	(*Filograna et al., 2016*), (*reference 2*), (*reference 4*)	
	Exposure to 5mM paraquat results in shortened adult lifespan. Flies exposed to 1mM paraquat show climbing defects compared to controls after 7 days.		
short lived	chemical treatment by diet: paraquat	(*Filograna et al., 2016*)	details

Clicking on the icon by the reference 2 reveals the free-text for that reference

Phenotype Annotations			
- In wild-type background			
phenotype (class)	induced by (treatment)	reference	
locomotor behavior defective | adult stage	chemical treatment by diet: paraquat	(*Filograna et al., 2016*), (*reference 2*), (*reference 3*), (*referenc*	
	text-text-text		
short lived	chemical treatment by diet: paraquat	(*Filograna et al., 2016*)	details

10. What would you like to have displayed in the Detailed Phenotype Descriptions:

- ○ Option A: Only free-text descriptions of phenotypes (or lack of a phenotype) that have no associated CV term annotations (and therefore would not be discoverable through the 'details' button)
- ○ Option B: All phenotype summaries, including those associated with CV terms (these would then be duplicated in the 'details' part of the annotation statements)

Option A

Phenotype Annotations			
- In wild-type background			
phenotype (class) ^	induced by (treatment) ^	reference	
locomotor behavior defective | adult stage	chemical treatment by diet: paraquat	(*Filograna et al., 2016*)	details
	Exposure to 5mM paraquat results in shortened adult lifespan. Flies exposed to 1mM paraquat show climbing defects compared to controls after 7 days.		
short lived	chemical treatment by diet: paraquat	(*Filograna et al., 2016*)	details
phenotype (manifests in) ^	induced by (treatment) ^	reference	
adult brain	*chemical treatment by diet: paraquat*	*(hypothetical reference)*	details
- In mutant background			
phenotype (class) ^	induced by (genotype and/or treatment) ^	reference	
lethal - all die before end of larval stage	*xyz[12] AND chemical treatment by diet: paraquat*	*(hypothetical reference)*	details
	xyz[12] mutant animals raised on food containing 6mM paraquat do not survive beyond the larval stage and display severe larval brain morphology defects with frequent lesion.		
phenotype (manifests in) ^	induced by (genotype and/or treatment) ^	reference	
embryonic/larval brain | larval stage	*xyz[12] AND chemical treatment by diet: paraquat*	*(hypothetical reference)*	details
- Detailed Phenotypic Descriptions			
text		reference	
Wild-type third instar larvae raised on diet containing paraquat do not display significant differences in food consumption compared to controls raised on food without paraquat.		*(hypothetical reference)*	

Option B

Phenotype Annotations

- In wild-type background

phenotype (class) ^	induced by (treatment) ^	reference	
locomotor behavior defective| adult stage	chemical treatment by diet: paraquat	(*Filograna et al., 2016*)	details
	Exposure to 5mM paraquat results in shortened adult lifespan. Flies exposed to 1mM paraquat show climbing defects compared to controls after 7 days.		
short lived	chemical treatment by diet: paraquat	(*Filograna et al., 2016*)	details

phenotype (manifests in) ^	induced by (treatment) ^	reference	
adult brain	*chemical treatment by diet: paraquat*	*(hypothetical reference)*	details

- In mutant background

phenotype (class) ^	induced by (genotype and/or treatment) ^	reference	
lethal - all die before end of larval stage	*xyz[12] AND chemical treatment by diet: paraquat*	*(hypothetical reference)*	details
	xyz[12] mutant animals raised on food containing 6mM paraquat do not survive beyond the larval stage and display severe larval brain morphology defects with frequent lesion.		

phenotype (manifests in) ^	induced by (genotype and/or treatment) ^	reference	
embryonic/larval brain | larval stage	*xyz[12] AND chemical treatment by diet: paraquat*	*(hypothetical reference)*	details

- Detailed Phenotypic Descriptions

text	reference
Exposure to 5mM paraquat results in shortened adult lifespan. Flies exposed to 1mM paraquat show climbing defects compared to controls after 7 days.	(*Filograna et al., 2016*)
xyz[12] mutant animals raised on food containing 6mM paraquat do not survive beyond the larval stage and display severe larval brain morphology defects with frequent lesion.	*(hypothetical reference)*
Wild-type third instar larvae raised on diet containing paraquat do not display significant differences in food consumption compared to controls raised on food without paraquat.	*(hypothetical reference)*

Curation of phenotypes induced or modified by chemical treatments or nutritional challenges

Free-text display

11. If you have any comments regarding the free-text display please write them in the box below

Curation of phenotypes induced or modified by chemical treatments or nutritional challenges

Propagation of data to allele reports

A Gene - Chemical Compound Interaction Annotations section will be added to the allele report - its format and content will follow that of its counterpart on the chemical compound report.
There are cases where annotations relate to phenotypes observed upon a treatment being applied to genetically perturbed flies, but where no formal interaction relationship between the treatment and the genotype is described by the authors e.g. '*Almost all Gabat^{f01602} flies raised on a sucrose-only diet die within 7 days.*'
In the chemical compound report these annotations would belong to the proposed 'In mutant background' subsection of the Phenotype Annotations part of the report.

12. What is your preferred location for the display of such annotations on the corresponding allele reports (i.e. Gaba^{f01602} allele report in the example below)?

- ◯ Option A: In a special 'In combination with treatments' subsection of the Phenotypes section on the respective allele report(s)
- ◯ Option B: In an 'Unspecified interactions' subsection of Gene – Chemical Compound Interaction Annotations
- ◯ Combination of Options A&B: Depending on the complexity of the mutant genetic background these should be divided between dedicated subsections within the Phenotype Annotations (single gene mutants only) and the Gene – Chemical Compound Interaction Annotations (all other cases)

General Information

Symbol	Dmel\Gabat^{f01602}	**Species**	*D. melanogaster*
Name		**FlyBase ID**	FBal0222673
Feature type	allele	**Associated gene**	Dmel\Gabat
Associated Insertion(s)	PBac{WH}Gabat^{f01602}	**Carried in Construct**	
Also Known As	gabat^{f}		
Genomic Maps GBrowse JBrowse			
Allele class			
Mutagen			

Recent Updates

Nature of the Allele

Expression Data

Human Disease Model Data

Phenotypic Data

Phenotypic Class

Phenotype Manifest In

- In combination with treatment(s)

phenotype (class)	induced by (genotype and/or treatment)	reference	
short lived	Gabat[f01602]/Gabat[f01602] AND diet limited to: sucrose	(*Maguire et al., 2015*)	details

phenotype (manifests in)	induced by (genotype and/or treatment)	reference

Option A

+ Detailed Phenotype Descriptions

External Data

Interactions

Gene - Chemical Compound Interactions

- Phenotypic Data

- Modified by (Incoming Interactions)

phenotype (class)	induced by (genotype and/or treatment)	interaction	modifier (genotype and/or treatment)	reference	
short lived	Gabat[f01602]/Gabat[f01602] AND diet limited to: sucrose	is suppressed by	Gabat[Scer\UAS.T:SV5\V5,T:Zzzz\His6]; Scer\GAL4[elav.PU]	(*Maguire et al., 2015*)	details
short lived	Gabat[f01602]/Gabat[f01602] AND diet limited to: sucrose	is suppressed by	Gabat[Scer\UAS.T:SV5\V5,T:Zzzz\His6]; Scer\GAL4[repo.PU]	(*Maguire et al., 2015*)	details
short lived	Gabat[f01602]/Gabat[f01602] AND diet limited to: sucrose	is suppressed | partially by	nutrient added: L-glutamic acid	(*Maguire et al., 2015*)	details
short lived	Gabat[f01602]/Gabat[f01602] AND diet limited to: sucrose	is suppressed by	nutrient added: L-leucine	(*Maguire et al., 2015*)	details

phenotype (manifests in)	induced by (genotype and/or treatment)	interaction	modifier (genotype and/or treatment)	reference

- Modifier of (Outgoing Interaction)

phenotype (class)	induced by (genotype and/or treatment)	interaction	modifier (genotype and/or treatment)	reference

phenotype (manifests in)	induced by (genotype and/or treatment)	interaction	modifier (genotype and/or treatment)	reference

- Unspecified Interactions

phenotype (class)	induced by (genotype and/or treatment)	reference	
short lived	Gabat[f01602]/Gabat[f01602] AND diet limited to: sucrose	(*Maguire et al., 2015*)	details

phenotype (manifests in)	induced by (genotype and/or treatment)	reference

Option B

+ Detailed Phenotype Descriptions

Complementation and Rescue Data

Images (0)

Stocks (1)

Notes on Origin

External Crossreferences and Linkouts (0)

Synonyms and Secondary IDs (5)

References (3)

Curation of phenotypes induced or modified by chemical treatments or nutritional challenges

Priorities for future expansion

13. If we were to expand the amount of curated data involving chemical compounds, what order of priority would you suggest for the following possibilities:

	High priority	Medium priority	Low priority	no need to curate these data at all
chemical compound–protein physical interactions	◯	◯	◯	◯
effect of chemical treatments/nutritional challenges on gene expression levels	◯	◯	◯	◯
effect of naturally occurring regulatory compounds (e.g. hormones) on gene expression	◯	◯	◯	◯
metabolite level changes induced by genetic mutations	◯	◯	◯	◯
metabolite level changes induced by treatments	◯	◯	◯	◯
spatio-temporal pattern of expression of naturally occurring regulatory compounds (e.g. hormones)	◯	◯	◯	◯
usage of chemical compounds as markers of tissues, subcellular components and biological processes	◯	◯	◯	◯

other – please specify

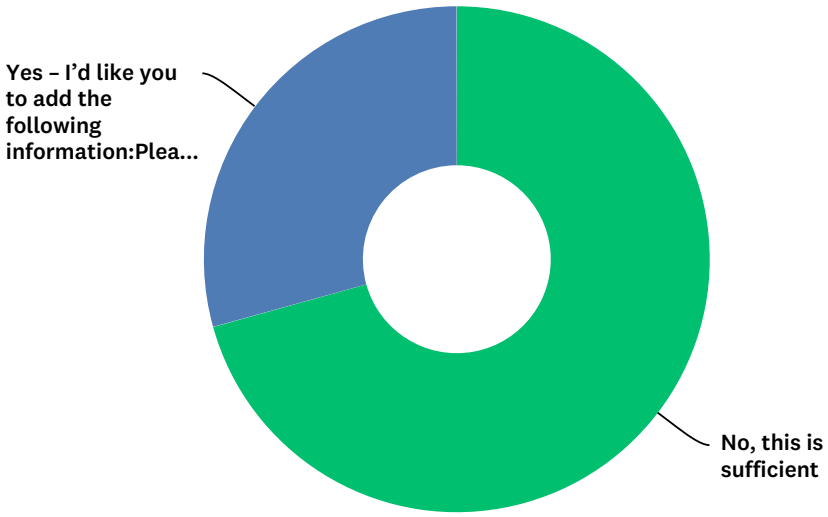
14. Thank you for taking the time to complete this survey. If you have any additional comments or suggestions regarding the curation of data involving chemical compounds, please write them below.

Curation of phenotypes induced or modified by chemical treatments or nutritional challenges

FCAG survey responses

Q1 Is there any other general information you would like to see displayed in this section?

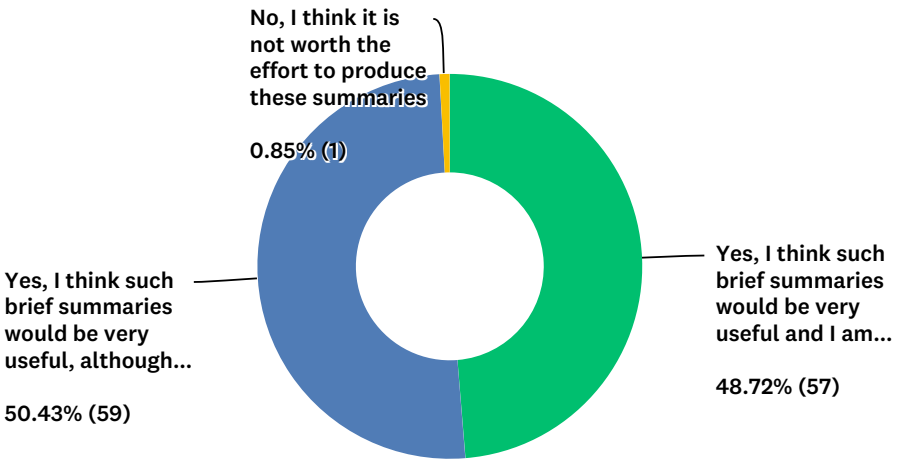
Answered: 116 Skipped: 2



ANSWER CHOICES	RESPONSES	
No, this is sufficient	70.69%	82
Yes – I'd like you to add the following information:Please specify:	29.31%	34
TOTAL		116

Q2 We are considering including a Usage field (placed just under the General Information section as in the mock-up above), where notes on the usage within the Drosophila field would be summarized in a brief narrative for commonly employed compounds (please look at the mock-up above for an example summary). A link allowing users to send us updates and/or correction requests would be also included.Do you think such a field should be present in the chemical compound report and would you contribute updates/corrections?

Answered: 117 Skipped: 1



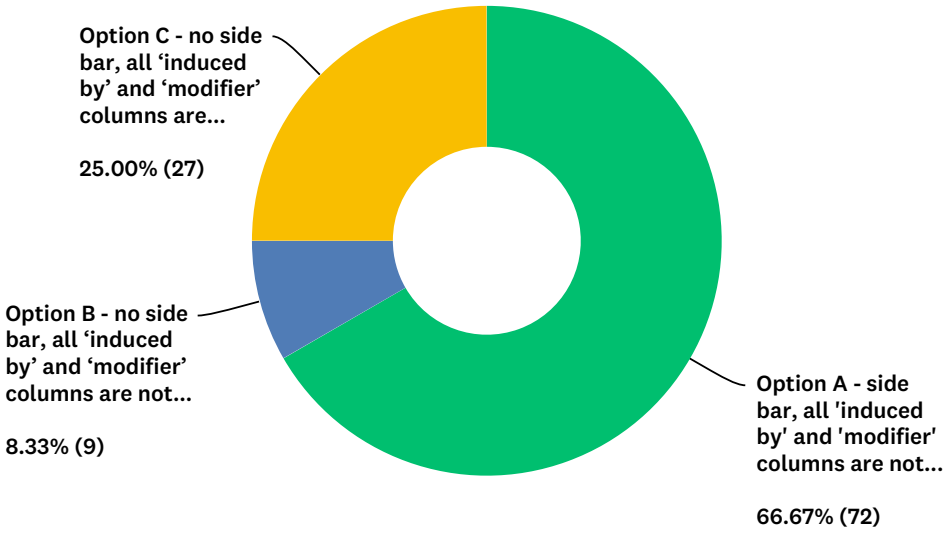
ANSWER CHOICES	RESPONSES	
Yes, I think such brief summaries would be very useful and I am likely to contribute updates or corrections to reports on compounds I use in my research	48.72%	57
Yes, I think such brief summaries would be very useful, although I am unlikely to contribute updates or corrections myself	50.43%	59
No, I think it is not worth the effort to produce these summaries	0.85%	1
TOTAL		117

Q3 If you have any additional comments regarding the display, organization or content of this section, please write them below

Answered: 15 Skipped: 103

Q4 Which is your preferred display style (please bear in mind that the number of columns in each section also changes the number of categories that can be used to sort the annotations by):

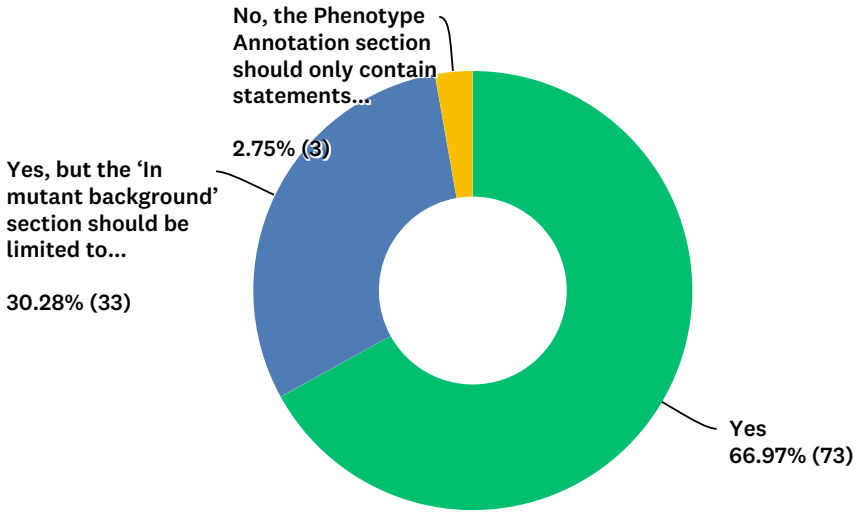
Answered: 108 Skipped: 10



ANSWER CHOICES	RESPONSES	
Option A - side bar, all 'induced by' and 'modifier' columns are not subdivided into genotype vs. treatment columns	66.67%	72
Option B - no side bar, all 'induced by' and 'modifier' columns are not subdivided into genotype vs. treatment columns	8.33%	9
Option C - no side bar, all 'induced by' and 'modifier' columns are subdivided into genotype vs. treatment columns (> more sorting categories)	25.00%	27
TOTAL		108

Q5 In the Phenotype Annotations section, do you like the division of annotations into ‘In wild-type background’ and ‘In mutant background’?

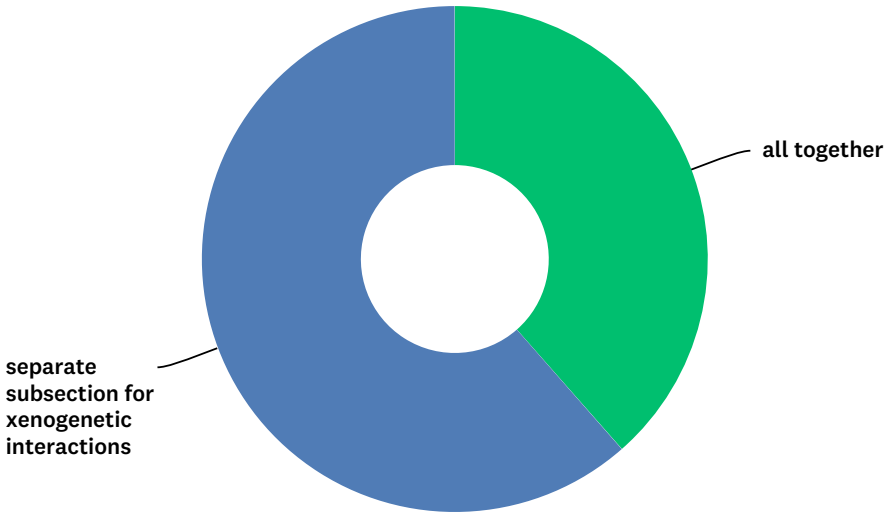
Answered: 109 Skipped: 9



ANSWER CHOICES	RESPONSES	
Yes	66.97%	73
Yes, but the ‘In mutant background’ section should be limited to annotations involving only ‘simple’ genotypes (single or double mutants), annotations with more complex genotypes should be displayed somewhere else	30.28%	33
No, the Phenotype Annotation section should only contain statements describing phenotypic effects of chemical treatments/nutritional challenges in wild-type animals	2.75%	3
TOTAL		109

Q6 In the Chemical compound - Gene Interaction Annotations section, do you prefer to have all interaction annotations – including those involving non-Dmel transgenes (so called 'xenogenetic' interactions) – displayed together in one Gene-Chemical Compound Interaction section or do you prefer to have a separate subsection for xenogenetic interactions?

Answered: 109 Skipped: 9



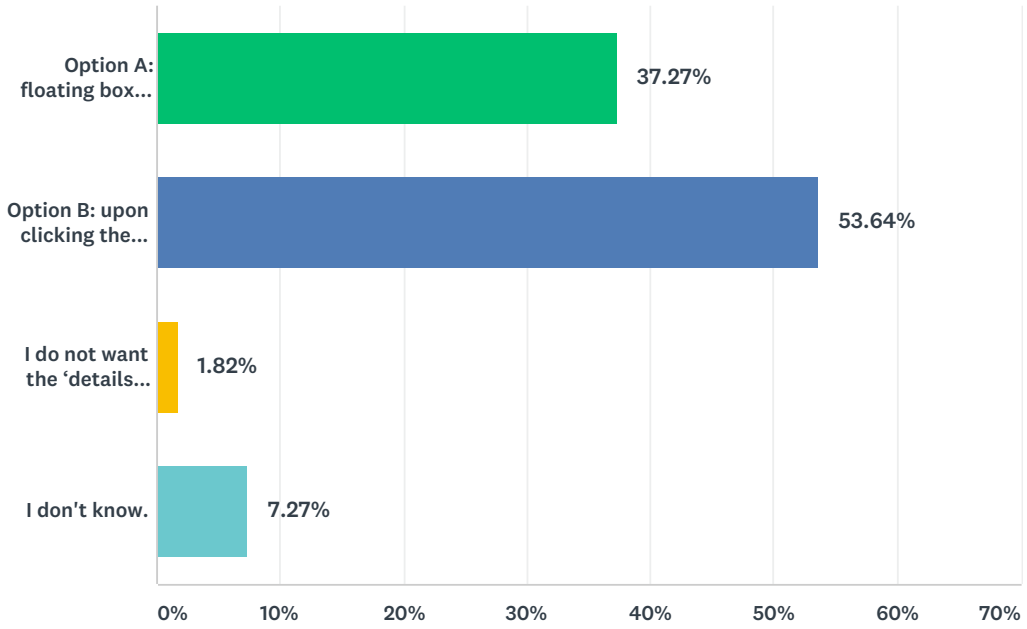
ANSWER CHOICES	RESPONSES	
all together	38.53%	42
separate subsection for xenogenetic interactions	61.47%	67
TOTAL		109

Q7 If you have any additional comments regarding the display, organization or content of the Interaction sections, please write them in the box below

Answered: 11 Skipped: 107

Q8 How would you like the ‘details’ button to work

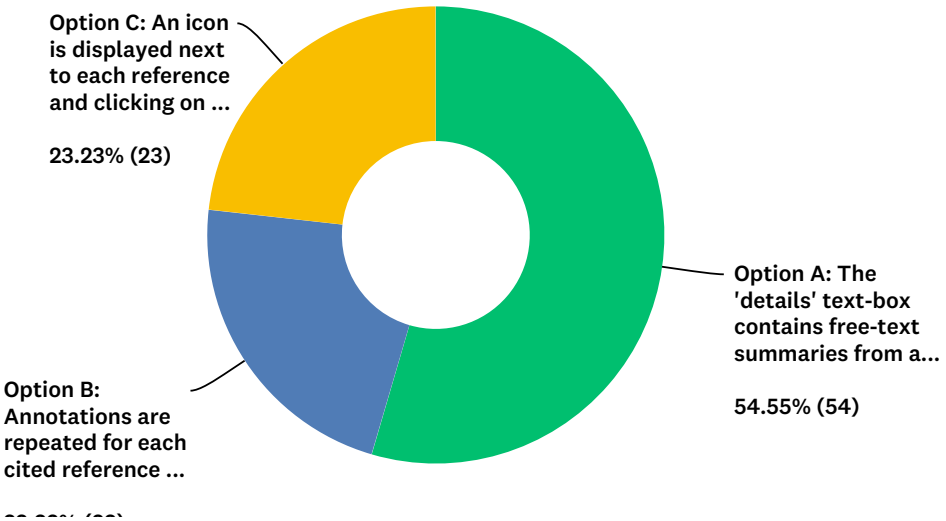
Answered: 110 Skipped: 8



ANSWER CHOICES	RESPONSES	
Option A: floating box with the text description appears upon mouse-over/click	37.27%	41
Option B: upon clicking the annotation area is enlarged to reveal the text	53.64%	59
I do not want the ‘details’ button at all, I would prefer to have all the phenotypic descriptions placed in a separate subsection	1.82%	2
I don't know.	7.27%	8
TOTAL		110

Q9 How would you like to have the references and free-text summaries organized when the same annotation is referenced by multiple papers? Please choose your preferred display option from the ones below.

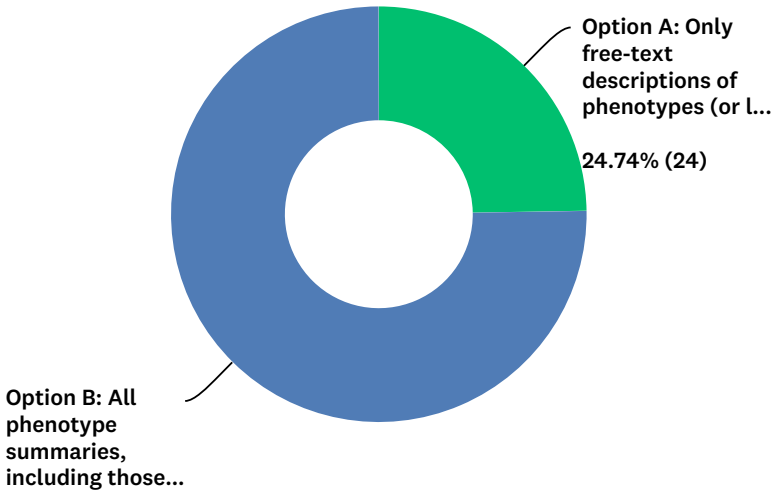
Answered: 99 Skipped: 19



ANSWER CHOICES	RESPONSES	
Option A: The 'details' text-box contains free-text summaries from all the references cited for each annotation	54.55%	54
Option B: Annotations are repeated for each cited reference (> one reference per row), the 'details' text-box only includes the free-text summary from that particular reference. Please note that choosing this option would also mean an additional sorting category (reference)	22.22%	22
Option C: An icon is displayed next to each reference and clicking on it reveals the free-text summary from that particular reference	23.23%	23
TOTAL		99

Q10 What would you like to have displayed in the Detailed Phenotype Descriptions:

Answered: 97 Skipped: 21



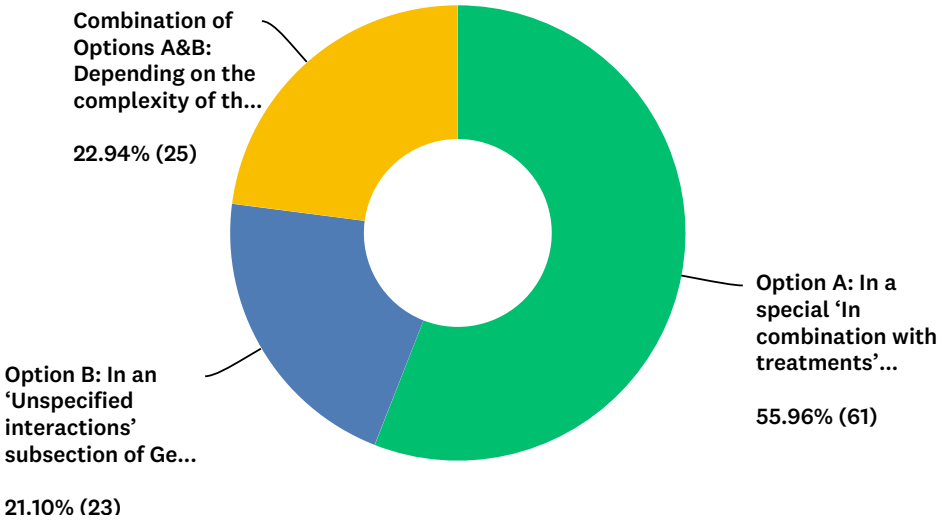
ANSWER CHOICES	RESPONSES	
Option A: Only free-text descriptions of phenotypes (or lack of a phenotype) that have no associated CV term annotations (and therefore would not be discoverable through the ‘details’ button)	24.74%	24
Option B: All phenotype summaries, including those associated with CV terms (these would then be duplicated in the ‘details’ part of the annotation statements)	75.26%	73
TOTAL		97

Q11 If you have any comments regarding the free-text display please write them in the box below

Answered: 6 Skipped: 112

Q12 What is your preferred location for the display of such annotations on the corresponding allele reports (i.e. Gabaf01602 allele report in the example below)?

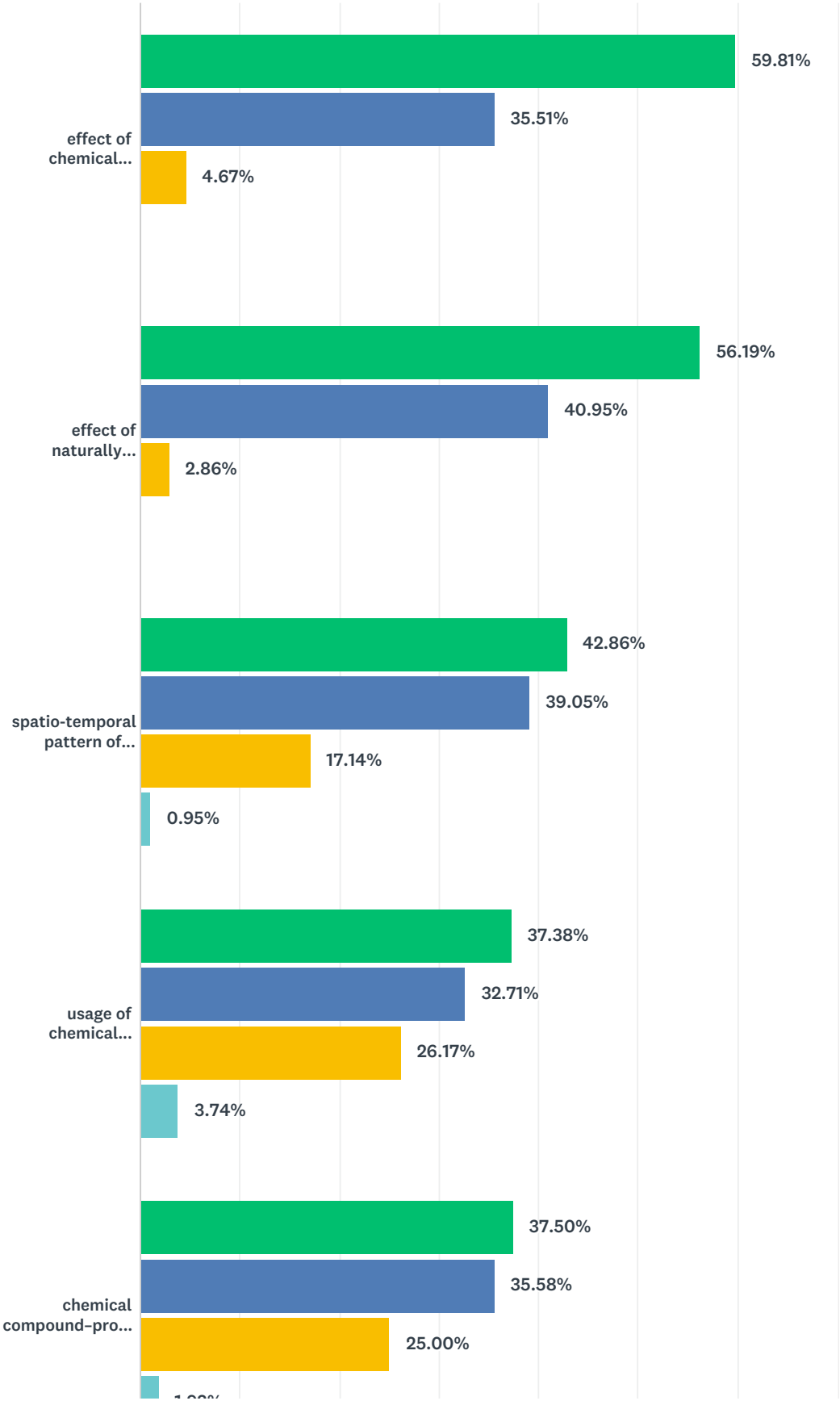
Answered: 109 Skipped: 9



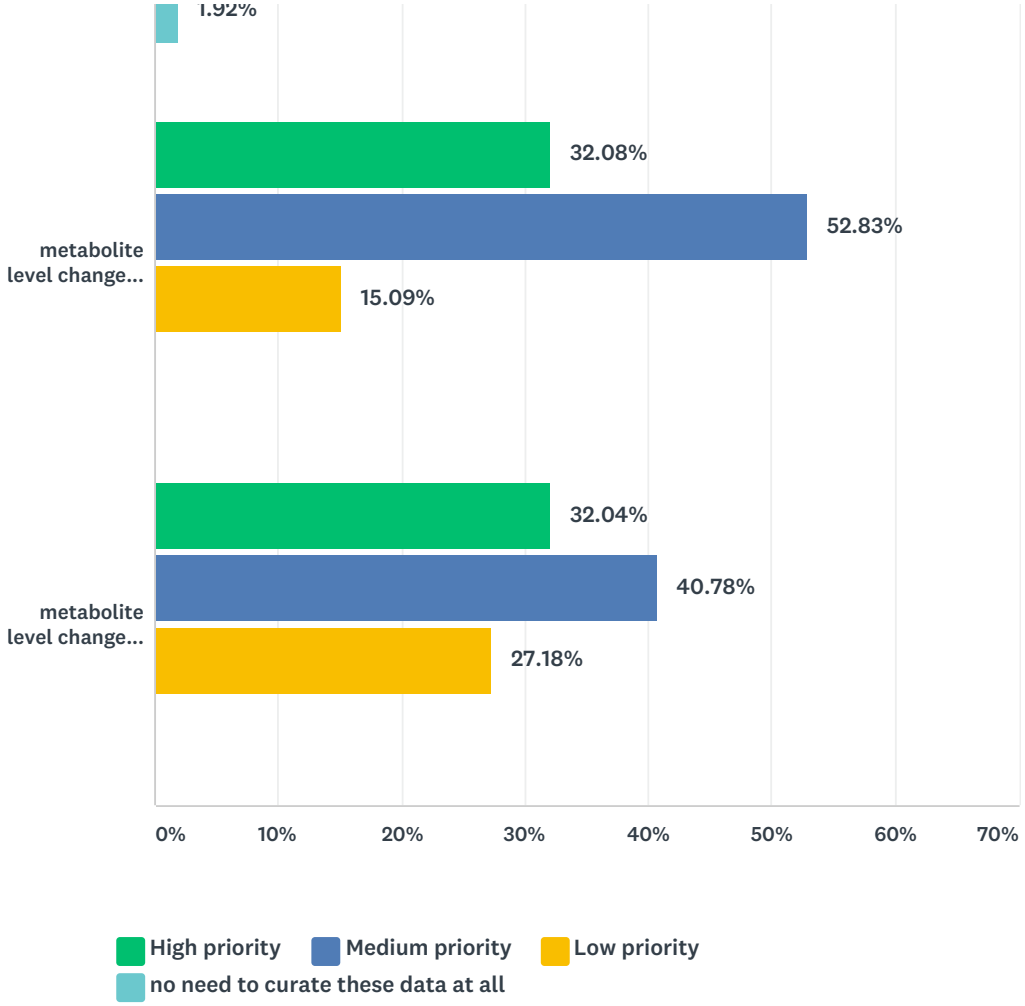
ANSWER CHOICES	RESPONSES	
Option A: In a special 'In combination with treatments' subsection of the Phenotypes section on the respective allele report(s)	55.96%	61
Option B: In an 'Unspecified interactions' subsection of Gene – Chemical Compound Interaction Annotations	21.10%	23
Combination of Options A&B: Depending on the complexity of the mutant genetic background these should be divided between dedicated subsections within the Phenotype Annotations (single gene mutants only) and the Gene – Chemical Compound Interaction Annotations (all other cases)	22.94%	25
TOTAL		109

Q13 If we were to expand the amount of curated data involving chemical compounds, what order of priority would you suggest for the following possibilities:

Answered: 107 Skipped: 11



Curation of phenotypes induced or modified by chemical treatments or nutritional challenges



	HIGH PRIORITY	MEDIUM PRIORITY	LOW PRIORITY	NO NEED TO CURATE THESE DATA AT ALL	TOTAL	WEIGHTED AVERAGE
effect of chemical treatments/nutritional challenges on gene expression levels	59.81% 64	35.51% 38	4.67% 5	0.00% 0	107	3.55
effect of naturally occurring regulatory compounds (e.g. hormones) on gene expression	56.19% 59	40.95% 43	2.86% 3	0.00% 0	105	3.53
spatio-temporal pattern of expression of naturally occurring regulatory compounds (e.g. hormones)	42.86% 45	39.05% 41	17.14% 18	0.95% 1	105	3.24
usage of chemical compounds as markers of tissues, subcellular components and biological processes	37.38% 40	32.71% 35	26.17% 28	3.74% 4	107	3.04
chemical compound–protein physical interactions	37.50% 39	35.58% 37	25.00% 26	1.92% 2	104	3.09
metabolite level changes induced by genetic mutations	32.08% 34	52.83% 56	15.09% 16	0.00% 0	106	3.17
metabolite level changes induced by treatments	32.04% 33	40.78% 42	27.18% 28	0.00% 0	103	3.05

Q14 Thank you for taking the time to complete this survey. If you have any additional comments or suggestions regarding the curation of data involving chemical compounds, please write them below.

Answered: 5 Skipped: 113