Annotation Guidelines for Grouping Experimental Methods and

Endpoints Identification

GROUP ANNOTATION INSTRUCTIONS

This guideline describes how specific mentions from the first phase of annotation should be grouped together. Grouping a document consists of labeling select text with a group tag that indicates the type of group the specific mention belongs to (test article group 0 as in the example below).



Phase II grouping will group related information together (Test Article, Endpoint, Animal).

If a mention was not tagged in Phase 1, do not go back and add a mention tag in Phase 2. Group together existing mention tags. This may result in some groups missing a mention component (e.g. Animal Group may have species, sex but no strain tag).

ANNOTATING GROUPS

Table 2. Types of Groups

Groups	Annotation Tag	Description		
TestArticleGroup	TestArticle	Test article or exposure evaluated		
	Vehicle	The solution the test article is in		
	TestArticlePurity	Purity of test article		
	TestArticleVerification	Verification of purity of test article		
AnimalGroup	Species	The species names		
	Strain	The strain names		
	Sex	Sex of the animal group(s)		
	Group name (if needed)	Animal group name if multi-generational		

ANNOTATION FEATURES FOR GROUPS WITHIN BRAT

BRAT tool group tagging instructions:

- 1. Click any of the group type buttons at the bottom of the page to create a new group
- 2. Select the active group by clicking the group name in the top row of buttons
- 3. Alt-click labels to toggle membership to the current group
- 4. Group interface is always present at the bottom of the page
- 5. Alt-click a group name to delete that group (must be empty)
- 6. Spans in the currently selected group are highlighted in purple

To create a new group - click one of the Create New Group Buttons

Select Active Group									
Create New	Group								
Equiv	TestArticleGroup	Dose	DoseDuration	Endpoint	Animal				

New created group will automatically be selected:

Select Active Group		
Create New Group		
Equiv TestArticleGroup	Dose DoseDuration End	point Animal

Alt+ click: To create a new Group Tag, hold down the alt key and click the tag that you would like to assign as the group.

In this case, ROFA (which was tagged as Test Article) was assigned to the TestArticleGroup-0 via an alt +click.

TestArticle [TestArticleGroup-0]	
ROFA	was collected from a precipitator at Boston Edison Co., Mystic Power Plant number 4 (Everett, MA).

To un-assign the group just alt + click again. Multiple groups also may be assigned to one tag.

Note: Group numbering begins with 0, 1, 2....

GUIDELINES FOR ANNOTATION OF GROUPS

1. Equivalence Groups Tag

Equivalence Groups should be grouped first. These tags equate similar words/ concepts into one group.

• Equivalence Groups should only be included if the two terms are interchangeable, abbreviations, or symbols (BPA and bisphenol A; hours and hr). If you can "replace" the term within the sentence without changing the meaning then it would be an equivalent term; otherwise it is not considered equivalent.

For example if a study provided the chemical description Bisphenol A, but also referenced the chemical as BPA later on in the text, these two "test articles" would be grouped as an Equivalence Group. Only tag one instance of "BPA" and "bisphenol A" in the equivalence group, even if it is mentioned multiple times throughout the study. If a study were to only mention BPA throughout the paper, then no equivalence group is necessary.

Mentions may be double tagged for equivalence group.

Different words to describe the same Dose Route should also be tagged in an equivalence group (e.g. "inject", "injected", "injection"). Abbreviations like "GD" and "gestational day" should be tagged into an Equivalence Group.

Equivalence groups can be tagged for any of the tags. Tags that typically may have equivalence groups are Test Articles, Species, Sex (female, maternal, dams, etc.), Time Units, and Dose Route.

Notes:

- Equivalence Groups should be created any time there is different text that expresses the same concept (ex. Rat, rats, and rat should be all tagged to the same Equivalence Group).
- Capitalization does NOT matters, so Mice and mice do NOT need to be tagged to an Equivalence Group.
- DO NOT tag Endpoints and Endpoint Unit of Measure into Equivalence Groups.
- Do not tag "oral" and "gavage" Dose Routes into Equivalent Groups. Similarly, "injection" or other general terms should not be tagged to more specific Dose Route mentions as an Equivalent Group.
- Do not add Test Article mentions that are general names that encompass multiple Test Articles into an Equivalent Group with specific test articles. (e.g non-steroidal anti-inflammatory drugs (NSAIDs) is a general term that encompasses multiple drugs).

2. <u>Test Article Groups Tag</u>

Test Article Groups group together the Test Articles, Vehicle, Test Article Purity and Test Article Verification of different exposure scenarios.

For example:

- TestArticleGroup-0 captures chemical X exposure
- TestArticleGroup-1 captures chemical Y exposure

A Vehicle only exposure will be tagged as a separate Test Article Group.

TestArticle	[TestArticleGroup-0] ROFA	TestArticle and	TiO2	samples (susper	nded in 300	Vehicle [Tes	steril	e saline)	were sonicated for 1	min before IT instilla	ite ation.
				_							
		Rats in the	GroupNa vehicle cont	rol group were	DoseRoute IT	dosed with	Dose D	useUnits] (Vehic) μL	sterile saline.	1	

Note:

- If there is a Vehicle only exposure group, and there are no other information (Test Article Purity, Test Article Verification) it should STILL be tagged in its own Test Article Group.
- Combination exposures should not be tagged as a Test Article Group.
- If there is no Vehicle or Test Article Purity or Test Article Verification tags for a particular Test Article, still tag the Test Article by itself to a Test Article Group.

• If the study describes components of a Test Article, do not include the components in the Test Article Group, only the main Test Article.

TestArticle						28 - AN											
The collected ASD wa	is stored	at -30	°C in a gern	n-free cas	e with a desic	cant unti	il use.										
				TestArt	cle												
The concentration of each	element	(SI, N	a, Mg, Al, P,	Ca, Ti, Cr	Mn, Fe, Cu, I	Ba, and S	Sr) was detern	nined by i	nductively-co	oupled plas	sma atomic e	emission sp	pectroscopy (ICP-AES,	61E T	race and ICP	-750, Thermo
Jarrell-Ash Co., Midland, G	DN, Cana	da) aft	er acid diges	tion with	mixed acids (6	58% nitri	ic, 38% hydrol	fluoric, an	id 70% perch	loric = $5:1$	L:1) was perf	formed on	a sample at	180 °C for	3 h.		
	TestArticle	1	TestArticlePurity	TestArticle	TestArticlePurity	TestArticle	TestArticlePurity	TestArticle	TestArticlePurity	TestArticle	TestArticlePurit	TestArticle	TestArticlePurit	TestArticle		TestArticlePurity	TestArticle
The chemical elements in	ASD	were	71.0%	SiO2,	13.0%	Al203,	5.4%	Fe2O3,	2.5%	CaO,	3.5%	CaCO3,	3.0%	MgO,	and	0.6%	TIO2.

3. Animal Groups

Animal Groups group together the Species, Strain, Sex, and Group Name (for multi-generational studies) of different exposure populations.

	Sex [Animal-0]	Strain [Animal-0]	Species [Animal-0]
4 Adult	female	Sprague-Dawley	rats

Only tag one mention of each species, Strain, Sex into an Animal Group. Cell lines should not be tagged in Animal Groups.

NOTE:

- Different generations (pregnant dams, and then offspring) are considered different Animal Groups and should be tagged as separate Animal Groups. This may require you to include Group Name as part of the Animal Group.
- For studies that crossbred strains, include only the final Strain used in the experiment in the Animal Group.

INSTRUCTIONS FOR QA

When performing the QA review, open the QA version of the study in one browser window. Then open Annotator 1's version of the study in another browser window.

Move your mouse to the top of the browser window until the ribbon appears. Select "Groups".



A group pop-up window will appear

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	Groups ×	
disc	Group Type	
	[4] Equiv [1] TestArticleGroup [0] Dose [0] DoseDuration [0] Endpoint [2] Animal	
ign	Select Group	
Che		absorpt
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of		15 to
nt	TimeEndpointAssessed) (TimeUnits) TestArticle	Sex

Select a group type (e.g. Equiv or TestArticleGroup).

01	ING VARINAL DURI DEL DE	
	Groups	
50	Group Type	
	[4] Equiv [1] TestArticleGroup [0] Dose [0] DoseDuration [0] Endpoint [2] Animal	
n	Select Group	
	Equiv-2 Equiv-1 Equiv-0 Equiv-3	
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Then select a specific group within the type. It will show all the mentions that have been tagged to that particular group (Highlighted below). Compare the mentions associated with the groups between Annotator1 and the QA version. NOTE: the group name may not be the same , as in this example the equivalence group with 'male' mentions is Equiv-2 in the QA version and Equiv-1 in Annotator 1's version. This does not matter, as long as the QA version has the correct mentions within the group.

QA's version

of_	the vaginal plug (GD 0)	
	Groups	×
C	Group Type	
	[4] Equiv [1] TestArticleGroup [0] Dose [0] DoseDuration [0] Endpoint [2] Animal	
n	Select Group	
	Equiv-2 Equiv-1 Equiv-0 Equiv-3	
I ¢		i
C	<pre>ecree 116/92). <<male>> and female mic birth to five <<males> and five femal</males></male></pre>	0
	F; CPF, n = 14 <>, 14 F). All ob	
	ug (GD 0). The < <stud>> was removed 10</stud>	
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l		1

Annotator 1's version

Group Type						
[5] Equiv [1] TestArtic	leGroup [0] Dose	[0] DoseDuration	[0] Endpoint	[2] Animal	
Select Group						
ecree 116/92).	le>> and fe	male mic.				
<pre> birth to five <<ma (one="" (veh="" <<m="" <<ma="" behavior="" n="18" up=""> up (CD 0) The <<ma (cd="" 0)<="" pre="" up=""></ma></ma></pre>	les>> and f le>> and on >, 18 F; CP	ive femal e female. F n =				
ug (ub 0). The ((st	uuzz was re	moved 10.				
						ĸ

In this example, the only difference is annotator 1 included a lowercase "male" that was not included in the QA version. Since capitalization does not matter, the QA version does not need to add the "male" mention.

For the next group, the two versions are the same, so no action is needed.

QA version

0	the vacinal blue (GD 0)		
	Groups	×	
50	Group Type		
L	[4] Equiv [1] TestArticleGroup [0] Dose [0] DoseDuration [0] Endpoint [2] Animal		
r	Select Group		
	Equiv-2 Equiv-0 Equiv-3		
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ſ	/92). Male and < <female>> mice of a Swis</female>		:5
	, n = 14 M, 14 < <f>>). All observat</f>		
	t experiment. < <dams>>' behavior A s</dams>		
	Thuministered to expregnances from diff		L
h			9
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SSO	ociated with any sign of systemic toxicity and/or weight loss in pregnant females	or	al

Annotator 1 version

Groups					×
Group Type [5] Equiv [1] TestArticleGroup	[0] Dose	[0] DoseDuration	[0] Endpoint	[2] Animal	
Select Group Equiv-1 Equiv-0 Equiv-2 Eq	uiv-3 Eq	uiv-4	(1)		
<pre>/92). Male and <<female>> mi ood and water. <<females>> w h n = 18 M, 18 <<f>>; CPF n t experiment. <<dams>>' beha</dams></f></females></female></pre>	ce of a Sw ere inspec = 16 M, vior A s	ris ted			
dministered to < <pregnant>> *</pregnant>	temales tr	om G		O	<

However in this example, there is a missing mention that needs to be added to this group in the QA version, "PNDs".

QA's version

)f the vaginal plug (GD 0)	
Groups	×
Group Type [4] Equiv [1] TestArticleGroup [0] Dose [0] DoseDuration [0] Endpoint [2] A	nimal
Select Group Equiv-2 Equiv-1 Equiv-0 Equiv-3	
n	
<pre>as recorded on <<post-partum day="">> 4. All observaor behavior on <<pnd>> 12 (Veh, n = 1</pnd></post-partum></pre>	
1	ОК

Annotator 1's version

	Groups	×	
	Group Type [5] Equiv [1] TestArticleGroup [0] Dose [0] DoseDuration [0] Endpoint [2] Animal		
	Select Group Equiv-1 Equiv-2 Equiv-3 Equiv-4		0
_	l Development (< <pnd>>> 3, 6, 9, 12 an 12 and 15) On <<pnd>> 3, 6, 9, 12, a</pnd></pnd>		
	OK		

Continue comparing all groups to ensure:

- 1. Add any mentions that are missing to the correct existing groups, and
- 2. Add any missing groups.