

# What's New in FlyBase. EDRC2019

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## **Finding Genetic Reagents**

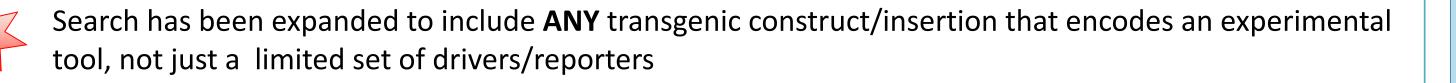
We have made changes to the Alleles, Insertions, and Transgenic Constructs section of our Gene Reports and to the QuickSearch "GAL4 etc" tab to make it easier for you to find alleles and transgenes which might be useful for your experiments. In both cases, we have added experimental tool information and have introduced "dynamic" tables which allow you to filter and sort these genetic reagents to find the ones with the particular characteristics that you need.

# **Gene Reports**

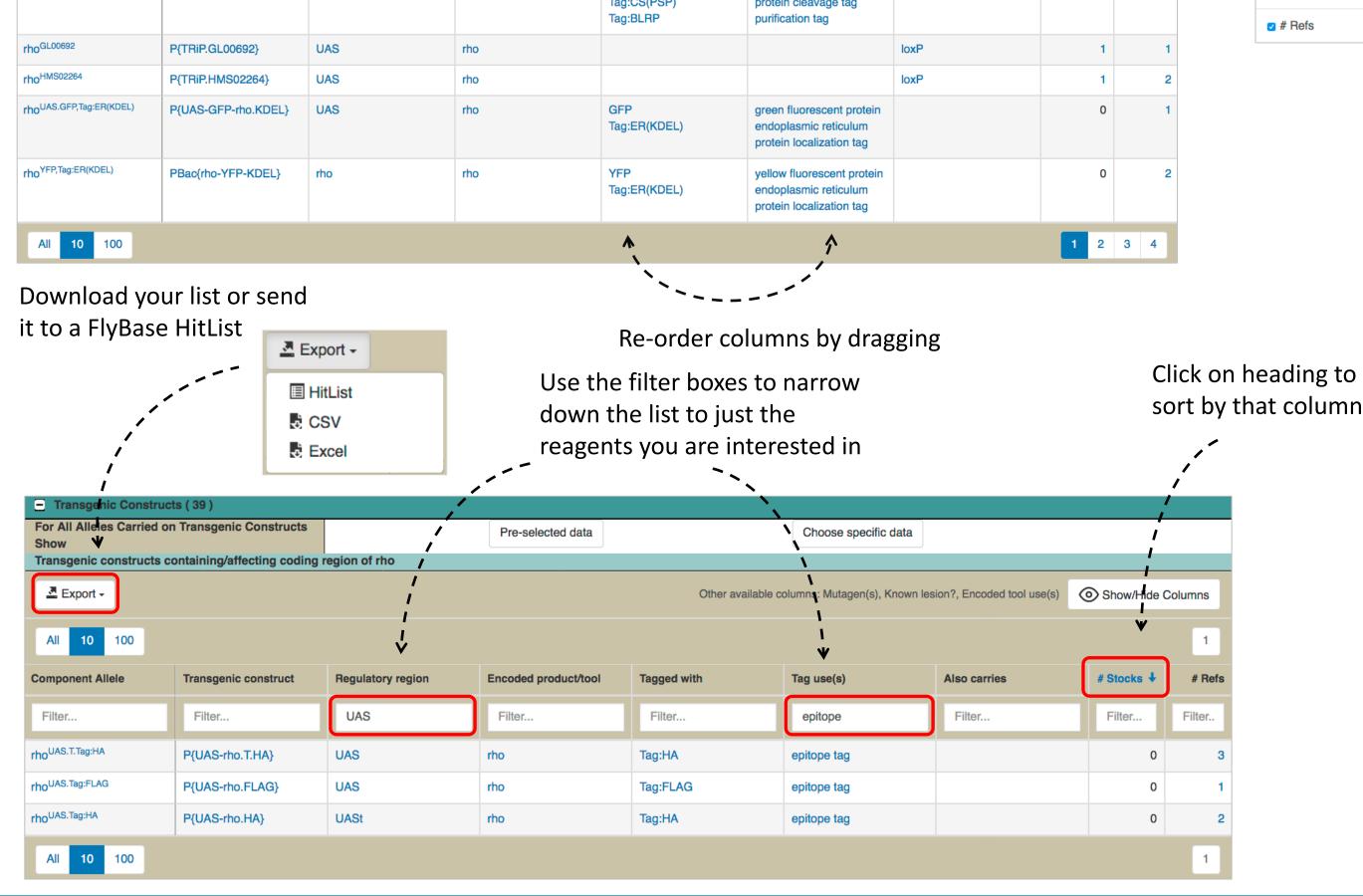
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N	New "dynamic"	' tables in <b>Alleles</b> ,	Insertions, and	Transgenic Constructs section

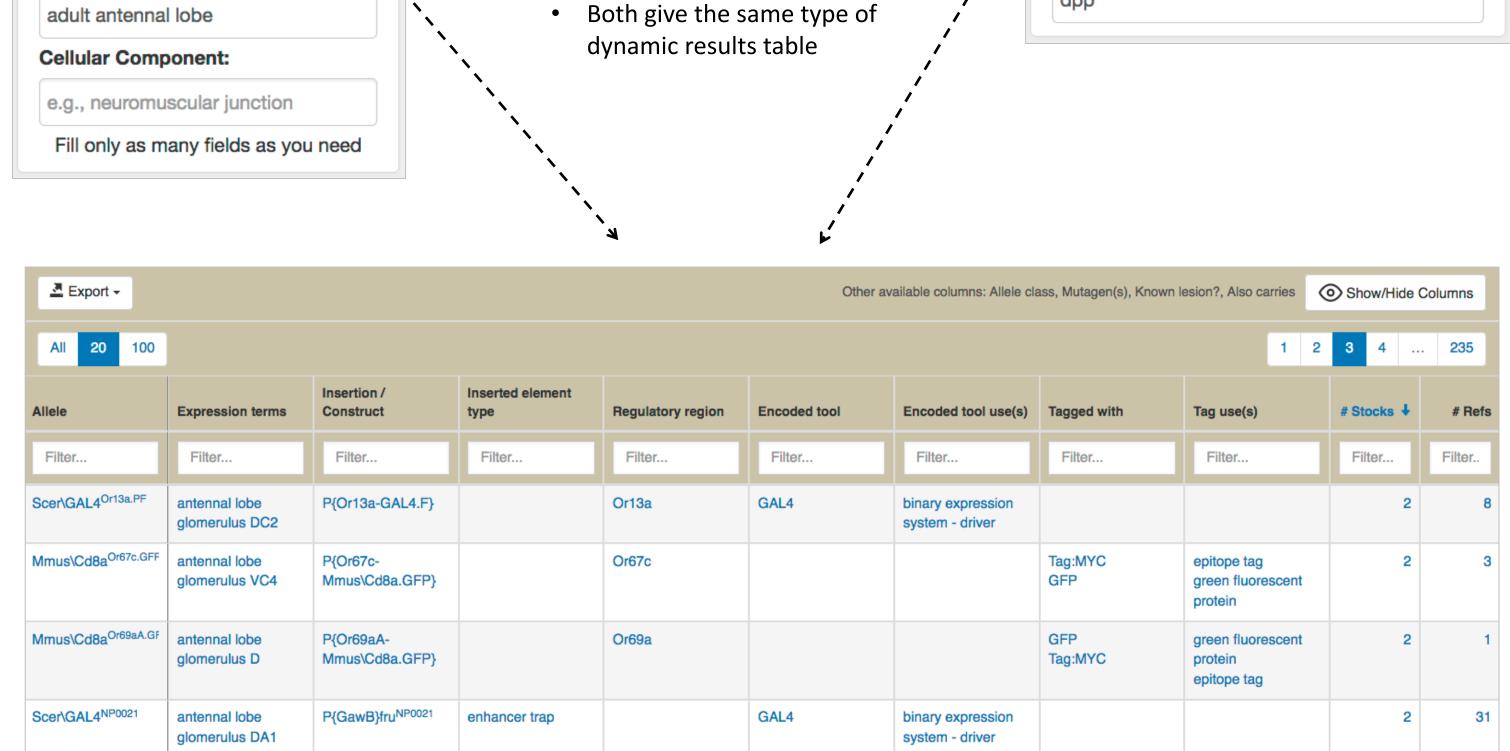
Transgenic Construct	cts ( 39 )							1	Choose which columns you
Show	n Transgenic Constructs		Pre-selected data		Choose specific data			<i>i</i>	want to see
	containing/affecting coding	region of rho						*	Show/Hide Columns
Export -				Other availab	ble columns: Mutagen(s), Known le	sion?, Encoded tool use(s)	Show/Hide	Columns	
All 10 100							1 2	3 4	Component Allele
Component Allele	Transgenic construct	Regulatory region	Encoded product/tool	Tagged with	Tag use(s)	Also carries	# Stocks ↓	# Refs	Mutagen(s)
	Tanagenic construct	negulatory region	_				_		□ Known lesion?
Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Transgenic construct
rho <sup>GD2243</sup>	P{GD2243}	UASt	rho				2	4	Regulatory region
rho <sup>WKO.3-A7</sup>	P{WKO.3-A7}		rho				1	1	
rho <sup>JF03106</sup>	P{TRiP.JF03106}	UAS	rho			loxP	1	2	Encoded product/tool
rho <sup>UAS.cdCa</sup>	P{UAS-ve.dC}	UASt	rho				1	20	Encoded tool use(s)
rho <sup>KK111378</sup>	P{KK111378}	UASt	rho				1	1	Tagged with
rho <sup>fTRG00488.sfGFP-TVPTBF</sup>	PBac{fTRG00488.sfGFP-	rho	rho	Tag:TY1	epitope tag	FRT	1	1	✓ Tag use(s)
	TVPTBF}			Tag:FLAG sfGFP	epitope tag green fluorescent protein				Also carries
				Tag:CS(TEVp) Tag:V5 Tag:CS(PSP)	protein cleavage tag epitope tag protein cleavage tag				✓ # Stocks
					protein cleavage tag				

QuickSearch "GAL4 etc" tab



	QuickSearch	
	Human Disease Protein Domains Gene Groups Pathways GO Data Class	
	Search FlyBase       Homologs       GAL4 etc       Expression       Phenotype       References         Search for GAL4 and other drivers and reporters in       Image: Comparison of the search	
	Search for GAL4 and other drivers and reporters in curated data	
	by curated expression pattern	
K	reflecting expression of a particular gene	You can now search for
by curated expression pattern	Frequently Used GAL4 Drivers table	<ul> <li>constructs/insertions that reflect</li> <li>the expression of a particular gene</li> </ul>
Developmental Stage:		۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲
e.g., third instar larval stage		reflecting expression of a particular gene
Anatomy/Cell Type:	Choose one of the two	Gene:
	options to search	dop





By default the results show all types of experimental tool

• Use the **Filter** boxes to narrow down the results

#### Human Disease Associations on Gene Reports

#### **Potential Disease Models based on Orthology**

We have implemented a new automated pipeline to annotate *D. melanogaster* genes that may be relevant to human diseases based on their orthology to human "disease-related" genes.

#### **Disease Model Summary Ribbon**

We have added a graphical Summary Ribbon to the Human Disease Associations section of Gene Reports:

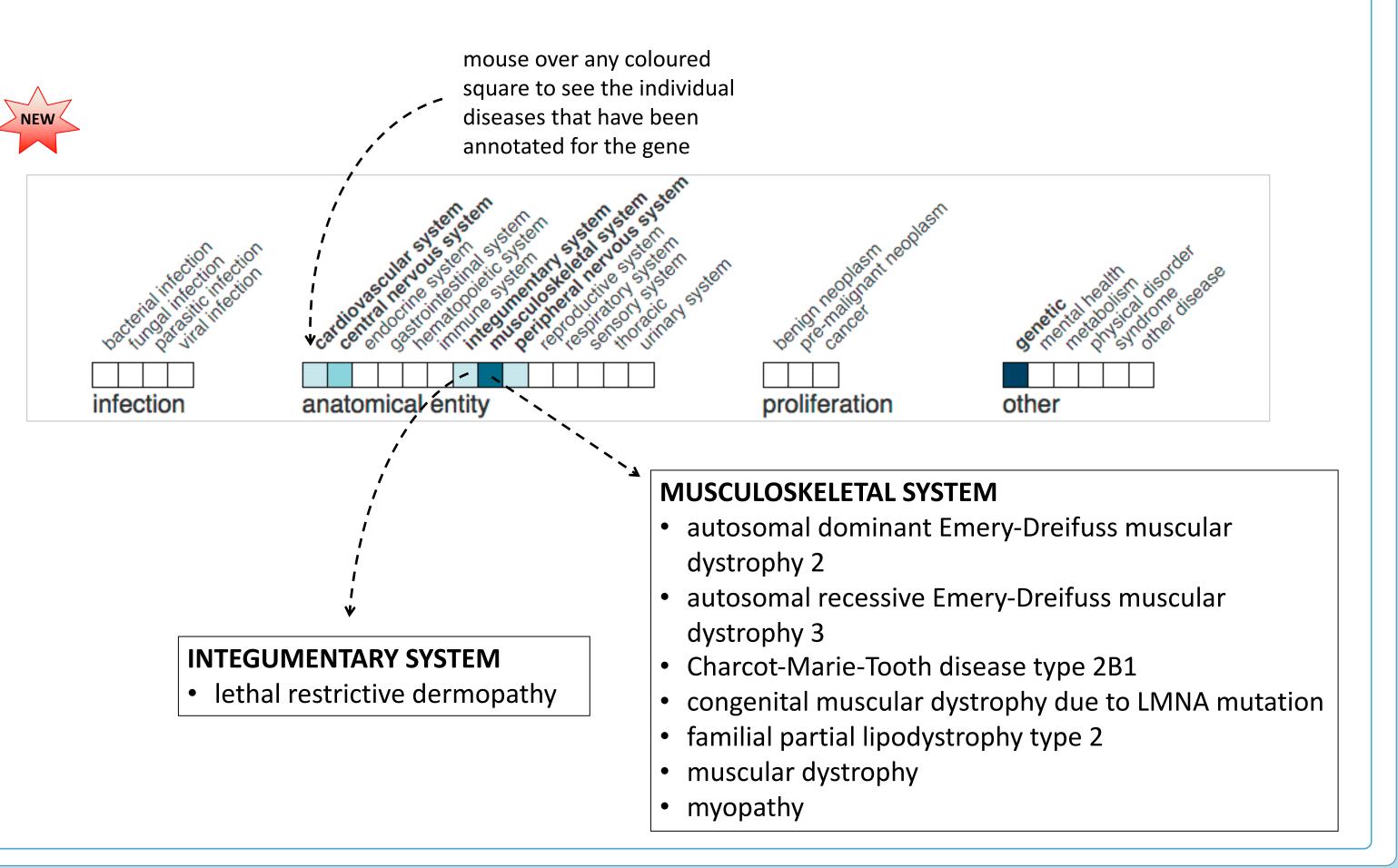
The pipeline uses three sets of data:

- **DIOPT** *D. melanogaster*-to-human orthology relationships
- human gene-to-phenotype relationships within OMIM
- **OMIM** phenotype cross-references within the **Disease Ontology (DO)**

The annotations are shown as **Potential Models Based on Orthology** in the **Human Disease Associations** section of **Gene Reports** 

Models Based on Experime	. ,		
Allele	Disease	Evidence	References
LamC <sup>G489V.UAS</sup>	model of myopathy	CEA	(Dialynas et al., 2012)
	model of muscular dystrophy	CEA	(Dialynas et al., 2015)
LamC <sup>N496I.UAS</sup>	model of myopathy	CEA	(Dialynas et al., 2012)
	model of muscular dystrophy	CEA	(Dialynas et al., 2015)
LamC <sup>V528P.UAS</sup>	model of myopathy	CEA	(Dialynas et al., 2012)
	model of muscular dystrophy	CEA	(Dialynas et al., 2015)
LamC <sup>M553R.UAS</sup>	model of myopathy	CEA	(Dialynas et al., 2012)
	model of muscular dystrophy	CEA	(Dialynas et al., 2015)
_amC <sup>∆N.UAS.cSa</sup>	model of muscular dystrophy	CEA	(Dialynas et al., 2015, Zwerger et al.
			2013)
LamC <sup>E174K.UAS</sup>	model of progeria	CEA with LamC <sup>unspecified</sup>	(Li et al., 2016)
_amC <sup>unspecified</sup>	model of progeria	CEA with LamC <sup>E174K.UAS</sup>	(Li et al., 2016)
E Potential Models Based on	Orthology (9)		
Human Ortholog	Disease	Evidence	References
LMNA; lamin A/C	model of dilated cardiomyopathy 1A	inferred from electronic annotation	(FlyBase, 2019-)
-	model of progeria	inferred from electronic annotation	( <i>FlyBase, 2019-</i> )
	model of lethal restrictive dermopathy	inferred from electronic annotation	( <i>FlyBase, 2019-</i> )
	model of autosomal dominant Emery- Dreifuss muscular dystrophy 2	inferred from electronic annotation	( <i>FlyBase, 2019-</i> )
	model of familial partial lipodystrophy type 2	inferred from electronic annotation	(FlyBase, 2019-)
	model of autosomal recessive Emery- Dreifuss muscular dystrophy 3	inferred from electronic annotation	(FlyBase, 2019-)
	model of congenital muscular dystrophy due to LMNA mutation	inferred from electronic annotation	( <i>FlyBase, 2019-</i> )
	model of Charcot-Marie-Tooth disease type 2B1	inferred from electronic annotation	(FlyBase, 2019-)
LMNB1; lamin B1	model of adult-onset autosomal dominant demyelinating leukodystrophy	inferred from electronic annotation	(FlyBase, 2019-)

- it summarises Disease Ontology data into broad categories
- the same categories are used on all gene pages, so it easy to compare between genes
- both experimentally determined models and *potential* models identified by our new automated pipeline are included in the ribbon



### Finding out about new features

This poster highlights just two recent improvements to FlyBase. There are a number of ways you can keep up-to-date with the latest improvements and new features.

From the Navigation Bar at the top of each page:

Sign up for our **Newsletter** 

Follow us on twitter **@FlyBaseDotOrg** 

Check out the **New in This Release** and **Release Notes** pages

From the Home Page:

Check out the Commentaries

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Find A Person				FlyBase	Consor	tium	
Newsletter	]			FlyBase	Publica	tions	
FlySlack Community				FlyBase	Present	ations	
FlyGene Wiki				FlyBase	Suppor	t	

# **Got Questions ?**

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									Conta	act FlyBase			

The FlyBase Consortium comprises: Nick Brown, Giulia Antonazzo, Helen Attrill, Phani Garapati, Aoife Larkin, Steven Marygold, Gillian Millburn, Clare Pilgrim, Vitor Trovisco, Jose-Maria Urbano (FlyBase-Cambridge), Norbert Perrimon, Julie Agapite, Kris Broll, Lynn Crosby, Gil dos Santos, Kathleen Falls, Susan Russo Gelbart, L. Sian Gramates, Victoria Jenkins, Ian Longden, Beverley Matthews, Carol Sutherland, Christopher Tabone, Pinglei Zhou, Mark Zytkovicz (FlyBase-Harvard), Brian Calvi, Thomas Kaufman, Josh Goodman, Victor Strelets, Jim Thurmond (FlyBase-Indiana), Richard Cripps, Maggie Werner-Washburne, Phillip Baker (FlyBase-NewMexico).

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