

GTCGGCAATCC STAAGAT
 ACC... TGCAGAT
 ...TA
 ...AAT
 ATTTCCCGC CAAAGCG
 AATAATAAAA CAACAAC



Finding GAL4 Drivers in FlyBase

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Searching with the GAL4 etc QuickSearch tab

The **GAL4 etc** tab allows searches for binary drivers, and for non-binary reporters, by temporal-spatial expression pattern. This tab uses the same strategies as the Expression tab, and similarly searches expression statements curated from the literature.

QuickSearch

Human Disease GAL4 etc Expression Phenotype References

Search FlyBase Orthologs Protein Domains Gene Groups GO Data Class

Search for GAL4 and other drivers and reporters by expression pattern: Search

Driver/Reporter: GAL4 binary driver QF binary driver LexA binary driver lacZ reporter GFP reporter *qualifier terms*

Output format: list *refine search by adding qualifier terms*

Developmental Stage: e.g., third instar larval stage

Anatomy/Cell Type: e.g., neuron

Cellular Component: e.g., neuromuscular junction

Fill only as many fields as you need

[Frequently Used GAL4 Drivers table](#)

The Driver/Reporter menu currently supports five options: GAL4, QF, and LexA binary drivers, and lacZ and GFP reporters. You can search for one type of driver or reporter at a time.

Search for GAL4 and other drivers and reporters by expression pattern: Search

Driver/Reporter: GAL4 binary driver

Output format: list

refine search by adding qualifier terms

Developmental Stage: third instar larval stage

Anatomy/Cell Type: wing pl

Cellular Component: wing pouch pleural wing process presumptive anterior notal wing process presumptive posterior notal wing process *qualifier terms*

Fill only as many fields as you need

[Frequently Used GAL4 Drivers table](#)

Expression pattern searches use FlyBase stage and anatomy controlled vocabulary (CV) terms, and feature coordinated autocomplete. Terms are suggested as you type, and are constrained by terms in other boxes. You can change the stringency of search by using a broader or more specific term, or by not filling all boxes. You can also search with a synonym to an anatomy CV term, but autocomplete will not recognize it.

Search for GAL4 and other drivers and reporters by expression pattern: Search

Driver/Reporter: GAL4 binary driver

Output format: integrated table list *refine search by adding qualifier terms*

Developmental Stage: e.g., third instar larval stage

Anatomy/Cell Type: e.g., neuron

Cellular Component: e.g., neuromuscular junction

Fill only as many fields as you need

[Frequently Used GAL4 Drivers table](#)

The **GAL4 etc** tab has two output formats. **List** displays search results in a standard FlyBase 2.0 faceted hit-list consisting of alleles, insertions, transgenic constructs, and stocks. **Integrated Table** displays results in a customized table that highlights the relationships between these data types.

Results: List view

Convert Export Analyze

View As: List Table

Items 1-50 of 112

← Previous 1 2 3 Next →

112 selected

Allele (36) Insertion (27) Stock (38) Transgenic Construct (11)

[show empty](#)

Scer\GAL4^{bl-md653} (FBal0052382) *S. cerevisiae* **Allele**

Mutagen: P-element activity
 Associated insertion: P[GawB]b^{md653}
 20 Phenotype (Class) statements, 48 Phenotype (Anatomy) statements
 0 Stocks 32 References

P[GawB]b^{md653} (FBti0002786) *D. melanogaster* **Insertion**

Sequence location(s): X:4,411,374..4,411,374 [-]
 2 Stocks 2 Alleles Arm: X Cytological Location: 4C3

P[vgM-GAL4.Exel] (FBtp0018475) *synthetic construct* **Transgenic Construct**

Associated alleles: Scer\GAL4^{vg.M.Exel}, w^{mC}
 Uses: characterization
 2 Associated Insertions 2 Stocks 4 References

BDSC:25706 (FBst0025706) *D. melanogaster* **Stock**

Genotype: w¹¹¹⁸ P[GawB]Bx^{MS1096}; P[UAS-Dcr-2.D]2 Collection: Bloomington Drosophila Stock Center

The **List** view hit-list includes four data types: alleles, insertions, transgenic constructs, and stocks. Filtering the hit-list to a single data type allows you to further convert the results to another data type, export to a file or to another FlyBase tool, or analyze the results in a data type specific manner. The filtered list can also be viewed as a standard hit-list table; please note that this is not the same as the **Integrated Table** described below.

Results: Integrated Table view

Query: GAL4 | wing pouch | third instar larval stage

Group #	Relevant Expression Statements	Allele	Construct	Insertion	Stock
1	wing pouch third instar larval stage wandering third instar larval stage	Scer\GAL4[32B]	P[GawB]	P[GawB]32B	FBst0001782 FBst0305171
2	wing pouch third instar larval stage wandering third instar larval stage late third instar larval stage	Scer\GAL4[C833]	P[GawB]	P[GawB]C833	FBst0006988
3	wing pouch third instar larval stage	Scer\GAL4[GMR11F02]	P[GMR11F02-GAL4]		FBst0049828
4	wing pouch third instar larval stage wandering third instar larval stage late third instar larval stage	Scer\GAL4[c784]	P[GawB]	P[GawB]c784	FBst0006985
5	wing pouch third instar larval stage late third instar larval stage	Scer\GAL4[T98]	P[GawB]	P[GawB]T98	FBst0006996 FBst0313637
6	wing pouch third instar larval stage	Scer\GAL4[Bx-MS1096]	P[GawB]	P[GawB]Bx[MS1096]	FBst0008860 FBst0025706 FBst0030806 FBst0067039

The **Integrated Table** view is designed to display the relationships between alleles, insertions, transgenic constructs, and stocks. For example, the allele **Scer\GAL4^{32B}** is caused by a specific insertion, **P[GawB]32B**, of the enhancer trap construct **P[GawB]**, and has two stocks. Hits that are associated with stocks available from a public stock center are automatically pre-sorted to the top of the table. The search used to generate the hit-list is displayed at the top. Each entry in the table includes the controlled vocabulary terms that resulted in that hit. These terms may not be the exact CV terms used in search; the term may have a part_of or is_a relationship to the search term; for example, wandering third instar larval stage is part_of third instar larval stage. Please note that the listed CV terms do not describe the full curated expression pattern. The full pattern is displayed in the Expression section of allele, insertion, and transgenic construct reports.

The Frequently Used GAL4 Drivers table

Search for GAL4 and other drivers and reporters by expression pattern: Search

Driver/Reporter: GAL4 binary driver

Output format: integrated table list *refine search by adding qualifier terms*

Developmental Stage: e.g., third instar larval stage

Anatomy/Cell Type: e.g., neuron

Cellular Component: e.g., neuromuscular junction

Fill only as many fields as you need

[Frequently Used GAL4 Drivers table](#)

FlyBase

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Frequently Used GAL4 Drivers

Please note: This table does not describe the entire expression pattern of each GAL4 driver. You can find the complete curated pattern on the allele, insertion or construct report of each driver.

Export TSV

Allele	Insertions / Constructs	Assoc. gene	Common terms	Major tissue	Major stage	Description	# Stocks	# Refs
Scer\GAL4 ^{elav-Gal4;PO}	P[elav-Switch-O]	elav	pan-neuronal	neuron	larval stage adult stage	Drives milliposture-inducible expression pan-neurality at larval and adult stages.	3	132
Scer\GAL4 ^{en-15E}	P[en2.4-GAL4]e15E P[en2.4-GAL4]	en	posterior compartments, segment polarity pattern	organism segment polarity expression pattern imaginal disc posterior compartment	embryonic stage larval stage	Drives expression throughout development in posterior compartments; marker for segment polarity expression pattern in embryos.	11	656
Scer\GAL4 ^{eng-NP5130}	P[GawB]NP5130 P[GawB]	eng		histoblast intestinal stem cell histoblast nest enteroblast	larval stage adult stage P-stage	Drives expression in histoblasts and histoblast nests, in enteroblasts, and in intestinal stem cells.	5	64
Scer\GAL4 ^{eve-RN2}	P[eve-GAL4-RN2]	eve	MN15N-ls	A1-7 dorsal motor neuron dCC neuron pCC neuron RN2 motor neuron	embryonic stage adult stage larval stage	Drives expression in a subset of motor neurons at all stages.	6	31

In the **Frequently Used GAL4 Drivers** table, we have compiled information for 200 GAL4 drivers, including the 150 stocks most ordered from the Bloomington Drosophila Stock Center and those drivers most frequently used in publications. This table can be accessed via a link on the **GAL4 etc** QuickSearch tab, and is also available as a downloadable file. The table can be sorted by column for most columns. Links to publications and stocks are included in this table.

The first two columns list the GAL4 drivers by allele, and by insertion or transgenic construct. We include allele designations to draw attention to relationship between the more user-familiar insertion/construct symbols and their associated alleles. FlyBase uses allele symbols in many contexts, including in text descriptions of expression patterns, phenotypes, and genetic interactions.

We display expression pattern information in several formats: FlyBase Anatomy CV terms, common terms often used in literature, short text descriptions, major developmental stage, and genes for those drivers that reflect a gene expression pattern. Term columns can be sorted, so drivers with similar expression patterns can be more easily compared. The expression data has been condensed to

emphasize how these drivers are used as experimental tools. Full curated expression patterns can be found on linked allele, insertion or construct reports.

We'd like to enhance this resource with user-contributed images of GAL4 expression patterns. If you'd like to contribute an image, please contact us at GAL4@morgan.harvard.edu, or talk to a curator.