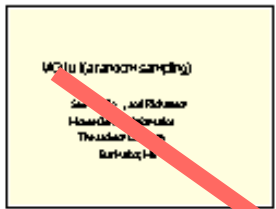


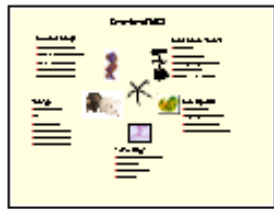
# MGI UI

(abridged)

Sue Bello, ~~Joel Richardson~~  
Mouse Genome Informatics  
The Jackson Laboratory  
Bar Harbor, ME



1



2



3



4



5



6



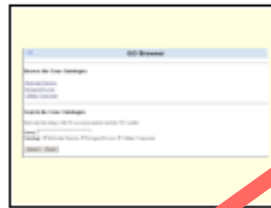
7



8



9



10



11



12



13



14



15



16



17



18



19



20



21



22



23



24



25



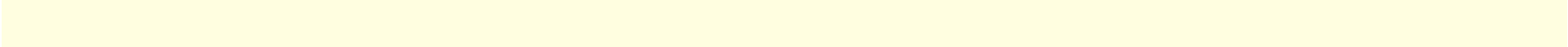
26



27



28



# What's the same?

- We have a quick search on the home page
  - can choose object type(s)
- Can get query results back in 'web' or 'tab' format
- Gene pages
  - multi-sectioned, highly organized
  - give 'teasers' (e.g., counts); click to get further details.
- Database reports
- Direct (read-only) database access

# What's Different?

- Quick search
  - Shows what matched (why did I get this record?)
  - Can enter multiple search terms
  - Search term semantics varies depending on 'section'
    - IDs == exact match
    - nomenclature == phrase containment
    - descriptions == word stemming, boolean combination
  - Search help tips, + full search help page
- Sidebar
- Don't yet have 'production' support for batch queries, but,
  - there's a prototype
  - we're experimenting with BioMart
- MGI User Support - custom queries
- Our very nice blue color!



**Search for**  
Enter term(s) or part of a term, use \* as a wildcard.  
  
in these sections  
All sections  
**Gene symbols/names**  
Accession IDs  
Phenotype/Human Disease  
Gene Expression

**Search for**  
Enter term(s) or part of a term, use \* as a wildcard.  
  
in these sections  
All sections  
**Gene symbols/names**  
Accession IDs  
Phenotype/Human Disease  
Gene Expression

## Search Menus

Click on a link to advanced search forms, database reports...

[Search Tools](#)

[Gene Symbols and Markers](#)

[Phenotypes and Alleles](#)

[Strains and Polymorphisms](#)

[Gene Expression](#)

[Sequences](#)

[Non-mammalian Orthology and Comparative Maps](#)

[Gene Maps and Mapping Data](#)

[Gene Tumor Biology](#)

[Probes and Clones](#)

[References](#)

[Vocabulary Browsers](#)

[MouseBLAST](#)

Search mouse, human, rat, and other sequence data

[Mouse GBrowse](#)

Interactive genome map browser

### NIH KOMP-Related Projects

Knock out Repatriation Project

[Nominate knock outs](#) for placement in public repositories

[Submit data on knock outs](#) for possible repatriation

Knock Out Mouse Project

KOMP [Data Coordination Center](#)

[Nominate genes](#) to be knocked out by the KOMP project

### What's New

MGI news and announcements

### Additional MGI Tools

Nomenclature, online

### Data Submission

Instructions and tools for submitting your data

### Help

User support/documentation, linking to MGI...

### About MGI

MGD, GXD, MTB, GO

### Other Resources

[International Mouse Strain Resource \(IMSR\)](#)

Searchable database of mouse strains and stocks available worldwide

[Mouse Phenome Database \(MPD\)](#)

Baseline measurements on inbred strain characteristics

[DeltaGen and Lexicon Knockout \(KO\) Mice](#)

Available knockouts and phenotypic data



Mouse Genome Informatics

[MGI Home](#) [Help](#)

Search for

in these sections

All sections  
**Gene symbols/names**  
Accession IDs  
Phenotype/Human Disease  
Gene Expression  
Gene Ontology  
Anatomical Dictionary  
Phenotype Ontology (MP)

Advanced search for...

### Search Categories

[All Search Tools](#)  
[Genes/Markers](#)  
[Phenotypes/Alleles](#)  
[Strains/Polymorphisms](#)  
[Expression](#)  
[Sequences](#)  
[Comparative Maps/Data](#)  
[Mouse Maps/Data](#)  
[Mouse Tumor Biology](#)  
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[Vocabulary Browsers](#)  
[Anatomical Dictionary](#)  
[Gene Ontology \(GO\)](#)  
[Human Disease \(OMIM\)](#)  
[Phenotype Ontology \(MP\)](#)  
[Protein Superfamily](#)



## Search Results

Search for: ahr

In these sections: Genes and Markers

### Genes and Markers(11)

Searched Nomenclature (symbols, names, synonyms, alleles, and orthologs)

[Advanced Genes and Markers Search.](#)

Chr	cM	Genome Coordinates	Symbol, Name	Matching Text
12	18.0	36083094-36119976 (-)	<a href="#">Ahr</a> , aryl-hydrocarbon receptor	current symbol: <b>Ahr</b>
13		74677120-74758311 (-)	<a href="#">Ahr</a> , aryl-hydrocarbon receptor repressor	current symbol: <b>Ahr</b>
6	13.0	34234092-34247647 (-)	<a href="#">Akr1b3</a> , aldo-keto reductase family 1, member B3 (aldose reductase)	old symbol: <b>Ahr-1</b>
Unknown			<a href="#">Aldr2</a> , aldehyde reductase 2	old symbol: <b>Ahr-2</b>
7	68.0		<a href="#">Aldr3</a> , aldehyde reductase 3	old symbol: <b>Ahr-3</b>
Unknown			<a href="#">Aldr4</a> , aldehyde reductase 4	old symbol: <b>Ahr-4</b>
3	71.2		<a href="#">Aldr5</a> , aldehyde reductase 5	synonym: <b>Ahr-1</b>
9	31.0	57449522-57501958 (+)	<a href="#">Cyp1a1</a> , cytochrome P450, family 1, subfamily a, polypeptide 1	human synonym: <b>AHRR</b>
Unknown			<a href="#">Tg(SV40-Ahr)1Poe</a> , transgene insertion 1, Lorenz Poellinger	current symbol: Tg(SV40- <b>Ahr</b> )1Poe
10	59.0	106887018-106890244 (-)	<a href="#">Myf5</a> , myogenic factor 5	allele name: targeted mutation 1, <b>Shahragim Tajbakhsh</b>
10	59.0	106896963-106898847 (-)	<a href="#">Myf6</a> , myogenic factor 6	allele name: targeted mutation 1, <b>Shahragim Tajbakhsh</b>



# Gene Detail

Your Input Welcome

<b>Symbol Name ID</b>	<b>Ahr</b> aryl-hydrocarbon receptor MGI:105043	<a href="#">Nomenclature History</a>																								
<b>Synonyms</b>	Ah, Ahh, Ahre, dioxin receptor, In																									
<b>Genetic Map</b>	Chromosome 12 18.0 cM <a href="#">Detailed Genetic Map ± 1 cM</a>  Mapping data( <a href="#">36</a> )																									
<b>Sequence Map</b>	Chr12:36083094-36119976 bp, - strand (From NCBI annotation of NCBI Build 36) <a href="#">Ensembl ContigView</a>   <a href="#">UCSC Browser</a>   <a href="#">NCBI Map Viewer</a>																									
<b>Mammalian homology</b>	human; dog, domestic; rabbit, European; rat; hamster, golden ( <a href="#">Mammalian Orthology</a> ) Comparative Map ( <a href="#">Mouse/Human Ahr ± 2 cM</a> )																									
<b>Sequences</b>	<table border="0"> <thead> <tr> <th colspan="3">Representative Sequences</th> <th>Length</th> <th>Strain/Species</th> <th>Flank</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td>genomic</td> <td>11622</td> <td><a href="#">NCBI Gene Model</a>   <a href="#">MGI Sequence Detail</a></td> <td>36883</td> <td>C57BL/6J ± <input type="text" value="0"/> Kb</td> </tr> <tr> <td><input type="checkbox"/></td> <td>transcript</td> <td>NM_013464</td> <td><a href="#">RefSeq</a>   <a href="#">MGI Sequence Detail</a></td> <td>5495</td> <td>C57BL/6</td> </tr> <tr> <td><input type="checkbox"/></td> <td>polypeptide</td> <td>Q8R4S5</td> <td><a href="#">UniProt</a>   <a href="#">EBI</a>   <a href="#">MGI Sequence Detail</a></td> <td>883</td> <td>Not Applicable</td> </tr> </tbody> </table> <p><i>For the selected sequences</i> <input type="button" value="download in FASTA format"/> <input type="button" value="Go"/></p> <p>All sequences(<a href="#">71</a>)</p>	Representative Sequences			Length	Strain/Species	Flank	<input type="checkbox"/>	genomic	11622	<a href="#">NCBI Gene Model</a>   <a href="#">MGI Sequence Detail</a>	36883	C57BL/6J ± <input type="text" value="0"/> Kb	<input type="checkbox"/>	transcript	NM_013464	<a href="#">RefSeq</a>   <a href="#">MGI Sequence Detail</a>	5495	C57BL/6	<input type="checkbox"/>	polypeptide	Q8R4S5	<a href="#">UniProt</a>   <a href="#">EBI</a>   <a href="#">MGI Sequence Detail</a>	883	Not Applicable	
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<input type="checkbox"/>	polypeptide	Q8R4S5	<a href="#">UniProt</a>   <a href="#">EBI</a>   <a href="#">MGI Sequence Detail</a>	883	Not Applicable																					
<b>Phenotypes</b>	All phenotypic alleles( <a href="#">10</a> ) : Targeted, knock-out( <a href="#">2</a> ) Targeted, other( <a href="#">4</a> ) Other( <a href="#">4</a> )  Homozygotes for null or hypomorphic alleles do not respond to cyclic compounds (e.g., dioxin) and are resistant to their teratogenic effects. Depending on the allele, null mutants may also have liver defects, impaired female fertility, neonatal or postnatal lethality, and spleen abnormalities.																									
<b>Polymorphisms</b>	PCR( <a href="#">1</a> ) SNPs within 2kb( <a href="#">188</a> )																									
<b>Gene Ontology (GO) classifications</b>	Process <a href="#">apoptosis, cell cycle...</a> Component <a href="#">cytoplasm, nucleus...</a> Function <a href="#">DNA binding, ligand-dependent nuclear receptor activity...</a> All GO classifications( <a href="#">22</a> )																									
<b>Expression</b>	Theiler Stage <a href="#">2,3,16,17,20,21,22,28</a> Tissues( <a href="#">47</a> ) Assay Type Results( <a href="#">81</a> ) Assays( <a href="#">5</a> ) RT-PCR <a href="#">17</a> <a href="#">2</a> RNA in situ <a href="#">64</a> <a href="#">3</a> GXD literature index( <a href="#">10</a> ) cDNA source data( <a href="#">16</a> )																									
<b>Other database links</b>	DFCI/TIGR <a href="#">TC1602896</a> , <a href="#">TC1618782</a> , <a href="#">TC1740581</a> Entrez Gene <a href="#">11622</a>																									
<b>Protein domains</b>	InterPro ID Description <a href="#">IPR000014</a> PAS <a href="#">IPR000700</a> PAS-associated, C-terminal <a href="#">IPR01067</a> Nuclear translocator																									



## Mammalian Phenotype Browser

Term Detail

MP term:	<b>abnormal vascular regression</b>
Synonym:	<b>abnormal vascular remodeling</b>
MP id:	<b>MP:0000364</b>
Definition:	<b>premature regression or persistence of vessels programmed to regress and/or loss of vessels not programmed to regress</b>
Number of paths to term:	<b>2</b>

①denotes an 'is-a' relationship

Ⓜdenotes a 'part-of' relationship

### Phenotype Ontology

①[cardiovascular system phenotype](#)

①[abnormal cardiovascular system morphology](#)

①[abnormal cardiovascular development](#)

①[abnormal vascular development](#)

①[abnormal angiogenesis](#)

①[abnormal artery development](#) +

①[abnormal vascular branching morphogenesis](#) +

①[abnormal vascular regression \[MP:0000364\]](#) (*30 genotypes, 31 annotations*)

①[patent ductus arteriosus](#)

①[patent ductus venosus](#)

①[abnormal vein development](#)

①[decreased angiogenesis](#)

①[increased angiogenesis](#)




**Search for**  
 Enter term(s) or part of a term

in these sections

- All sections
- Gene symbols/names**
- Accession IDs
- Phenotype/Human Disease
- Gene Expression


Advanced search for...

**Search for** 

Enter term(s) or part of a term, use \* as a wildcard.

in these sections

- All sections
- Gene symbols/names**
- Accession IDs
- Phenotype/Human Disease
- Gene Expression

Advanced search for... 

- Advanced search for...
- 
- Genes/Markers**
- Phenotypes/Alleles
- SNPs
- RFLP/PCR Polymorphisms
- Strains
- 
- Orthology
- Oxford Grid
- 
- Expression Data
- cdDNA Clones
- Expression Refs
- 
- Linkage Maps
- Cyto Maps
- Physical Maps
- Mapping Data
- Mapping Panels

- [What's New](#)  
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- [Data Submission](#)  
 Instructions and tools for subm
- [Help](#)  
 User support/documentation, li
- [About MGI](#)  
 MGD, GXD, MTB, GO
- Other Resources**
- [International Mouse Strain Resource](#)  
 Searchable database of mousi
- [Mouse Phenome Database \(MPD\)](#)  
 Baseline measurements on in
- [Deltagen and Lexicon Knockout](#)  
 Available knockouts and phen

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- [Help](#)
- [About MGI](#)
- [International Mouse Strain Resource](#)
- [Mouse Phenome Database \(MPD\)](#)
- [Deltagen and Lexicon Knockout](#)

laboratory mouse.

reports...

[Comparative Maps](#)

... lists, ftp server, prototypes...

... your data

... to MGI...

sequence data

... in public repositories  
 ... sible repatriation

... t by the KOMP project



**Mouse Genome Informatics**  
 Mouse Genome Informatics (MGI) provides integrated access to data on the genetics, genomics, and biology of the laboratory mouse.

Search for  
 Enter term(s) or part of a term, use \* as a wildcard

in these sections  
 Gene symbols/names  
 Accession IDs  
 Phenotype/Human Disease  
 Gene Expression  
 Gene Ontology

Search Menus  
 Links to advanced search forms, database reports...

All Search Tools  
 Genes and Markers  
 Phenotypes and Alleles  
 Strains and Polymorphisms  
 Gene Expression  
 Sequences  
 Mammalian Orthology and Comparative Maps  
 Mouse Maps and Mapping Data  
 Mouse Tumor Biology  
 Probes and Clones

What's New  
 MGI news and announcements

Additional MGI Tools and Links  
 Nomenclature, online books, E-mail lists, ftp, prototypes...

Data Submission  
 Instructions and tools for submission your data

An experimental prototype for batch querying.

## Additional MGI Tools and Links

### ◆ Downloads

- ◊ [Database Reports](#)  
*MGI Data and Statistical Reports*
- ◊ [FTP Server](#)
- ◊ [Gene Expression Notebook](#)  
*Organize and store your expression data and submit selected data to the Gene Expression Database*

### ◆ [Prototype Tools and Resources](#) ←

*Try new tools, check upcoming releases, send feedback*

### ◆ [Online Books](#)

*Electronic versions of Lee Silver's Mouse Genetics and other key out-of-print books*

### ◆ Nomenclature

- ◊ [Mouse Nomenclature Main Page](#)  
*MGI is the official site for mouse nomenclature & maintains official symbol & name designations for genes, alleles, strains*
- ◊ Nomenclature Guides (full):
  - [Genes/Markers/Alleles/Mutations](#)
  - [Mouse Strains](#)
  - [Chromosome Aberrations](#)
- ◊ Nomenclature Guides (abbreviated):
  - [Genes](#)
  - [Alleles and Mutations](#)
- ◊ [International Committee on Standardized Genetic Nomenclature for Mice](#)

### ◆ [Data and Nomenclature Submissions](#)

*How to contribute your data*

### ◆ [Help](#)

*Community and software resources, documentation, glossary, quick guide ...*

### ◆ [Research Community E-mail Lists](#)

*Moderated E-mail lists with archives, including mgi-list*

### ◆ [Gene Family Information](#)

*Curated gene families with members from mouse, human, and rat*

### ◆ [Contributed Data Sets and Tools](#)






*Contributed data not directly integrated into the MGI database and contributed tools for manipulating data*

### ◆ [Community Links](#)

- ◊ [Useful Links](#)  
*Mouse-related information, animal resources, and other mammal and model organism links*
- ◊ [Trans-NIH Mouse Initiative](#)
- ◊ [Phenotypes and Mutants Community Resources](#)
- ◊ [Sources for clones](#)  
*Where to get cDNA and genomic clones*
- ◊ [IMSR \(Find Mice\)](#)
- ◊ [Mouse Phenome Database \(MPD\)](#)
- ◊ [BLAST whole genome mouse](#)  
*Blast the mouse genome*

\*Dave Walton

## Prototypes

	<h3>Gene/Marker Batch Query</h3> <p>Prototype URL: <a href="http://proto.informatics.jax.org/batchwi/index.do">http://proto.informatics.jax.org/batchwi/index.do</a> ←</p> <p>Developed by: Dave Walton</p> <p>Obtain bulk data about genes in MGI, given a set of input IDs.</p>	<p>Posted:07/21/2006 Modified: 01/08/2007 Data: today</p>	<p><a href="#">Your</a> <a href="#">Input</a> <a href="#">Welcome</a></p>
	<h3>Vlad - Visual Annotation Display</h3> <p>Prototype URL: <a href="/prototypes/vlad-1.02">/prototypes/vlad-1.02</a></p> <p>Developed by: Joel Richardson</p> <p>Analysis and Graphical Display of GO Annotations</p>	<p>Posted:01/09/2004 Modified: 04/15/2005 Data: today</p>	<p><a href="#">Your</a> <a href="#">Input</a> <a href="#">Welcome</a></p>
	<h3>PLAD - Positional candidate Analysis Display</h3> <p>Prototype URL: <a href="/prototypes/plad">/prototypes/plad</a></p> <p>Developed by: Carol Bult, Ben King, Brad Witham</p> <p><i>In silico</i> positional candidate analysis tool</p>	<p>Posted:03/29/2004</p>	<p><a href="#">Your</a> <a href="#">Input</a> <a href="#">Welcome</a></p>
	<h3>GO Tools Page</h3> <p>Prototype URL: <a href="/prototypes/GOTools/web-docs">/prototypes/GOTools/web-docs</a></p> <p>Developed by: Mary Dolan</p> <p>MGI GO Term Finder, GO_Slim Chart Tool, and other stuff.</p>	<p>Posted:01/09/2004</p>	<p><a href="#">Your</a> <a href="#">Input</a> <a href="#">Welcome</a></p>
	<h3>GOgraphEX - GO Graphical Explorer</h3> <p>Prototype URL: <a href="/prototypes/GOgraphEX/">/prototypes/GOgraphEX/</a></p> <p>Developed by: Mary Dolan</p> <p>Visualization of GO and GO annotations in a graphical context.</p>	<p>Posted:10/11/2005</p>	<p><a href="#">Your</a> <a href="#">Input</a> <a href="#">Welcome</a></p>

# Lessons Learned

- Mostly, the same as everything being said today...
- Simple is good (but hard!)
  - quick search accounts for > 95% of all queries
  - by FAR, people access gene pages
- Google searching is of limited value
  - order of results is 'random' (to the biologist)
  - diabetes
- User testing is important
- Users LOVE the short gene descriptions
  - unless they disagree with it
- Going forward, bulk queries are critical
  - denormalization is inevitable

# MGI Staff

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NHGRI (HG000330, HG002273)  
NIH/NICHD (HD033745)  
NCI (CA089713)



Mouse Genome Informatics  
MGI Home Help

Search for  
 Go

in these sections

- All sections
- Gene symbols/names
- Accession IDs
- Phenotype/Human Disease
- Gene Expression
- Gene Ontology
- Anatomical Dictionary
- Phenotype Ontology (MP)

Advanced search for...

### Search Categories

- All Search Tools
- Genes/Markers
- Phenotypes/Alleles
- Strains/Polymorphisms
- Expression
- Sequences
- Comparative Maps/Data
- Mouse Maps/Data
- Mouse Tumor Biology
- Probes/Clones
- References
- Vocabulary Browsers
- Anatomical Dictionary
- Gene Ontology (GO)
- Human Disease (OMIM)
- Phenotype Ontology (MP)
- Protein Superfamily

[MouseBLAST](#)

[Mouse GBrowse](#)

[IMSR \(Find Mice\)](#)

### Tools and Links

- [Citing These Resources](#)
- [Funding Information](#)
- [Warranty Disclaimer & Copyright Notice](#)
- Send questions and comments to [User Support](#).

## Genes and Markers Query Form

Search for genes and markers by name, location, GO terms, protein domains, etc.

*Specify sorting and output options below.*

<b>Gene/Marker</b>	<b>Gene/Marker Symbol/Name:</b> <input type="text"/> contains <input type="text"/> search in <input type="text" value="current &amp; old symbols/names, synonyms, alleles, orthologs"/> <b>Type:</b> <input type="text" value="Any"/>	
<b>Map position</b>	<b>Chromosome(s):</b> <input type="text" value="Any"/> 1 2 3 4 <b>Genome Coordinates:</b> <input type="text" value="between"/> <i>e.g., "125.618-125.622" Mbp</i> <b>Marker range:</b> use current symbols between <input type="text"/> and <input type="text"/> <i>e.g., between "D19Mit32" and "Tbx10"</i>	<b>Chromosome(s):</b> <input type="text" value="5"/> <input type="text" value="6"/> <input type="text" value="7"/> <input type="text" value="8"/> <input type="text" value="9"/> <b>cM Position:</b> <input type="text" value="between"/> <i>e.g., "A3.3"</i> <input type="text" value="between"/> <i>e.g., "10.0-40.0"</i>
<b>Gene Ontology classifications</b>	<b>Gene Ontology (GO) Classifications:</b> <input type="text" value="cor"/> contains <input type="text" value="nucleus"/> in <input type="text"/> Browse <a href="#">Gene Ontology (GO)</a>	
<b>Protein domains</b>	<b>InterPro Pr</b> <input type="text"/> Browse <a href="#">InterPro protein domains</a>	
<b>Mouse phenotypes &amp; mouse models of human disease</b>	<b>Phenotype/Human Dis</b> <input type="text" value="Enter any combi"/>	<b>Phenotype/Human Disease:</b> <input type="text" value="glucose"/> <i>Enter any combination of phenotype terms, disease terms, or IDs</i> Select <a href="#">Anatomical Sys</a> Browse <a href="#">Mammalian Pl</a> Browse <a href="#">Human Disease</a>
<b>Clone collection</b>	<b>Clone Collection:</b> Search for markers associated with clones in these collections <input type="text" value="Any"/> IMAGE MGC NIA NIA 15K <i>More information on <a href="#">clone collections</a>.</i>	
<b>Sorting and output format</b>	<b>Sorting and output format</b> <b>Sort by:</b> <input checked="" type="radio"/> Nomenclature <input type="radio"/> Genome Coordinates <input type="radio"/> cM Position <b>Maximum returned:</b> <input type="text" value="500"/> <input type="checkbox"/> no limit <b>Output:</b> <input type="text" value="Web"/> Web Tab-delimited Tab-delimited to ftp site	



## Genes and Markers

Query Results -- Summary

### You searched for...

**Chromosome:** equals **7**

**Gene Ontology Term(s):** contains **nucleus** searching Cellular Component

**Phenotypes/Diseases:** contains **glucose** searching MP terms, synonyms, IDs, and notes, disease terms, synonyms, and IDs

**Sort:** by **Nomenclature**

**Display Limit:** equals **500**

8 matching items displayed

Chr	cM	Genome Coordinates (strand) <i>NCBI Build 36</i>	Symbol, Name
7	12.0	34828063-34830688 (+)	<a href="#">Cebpa</a> , CCAAT/enhancer binding protein (C/EBP), alpha
7	42.6	84461344-84481937 (-)	<a href="#">Fah</a> , fumarylacetoacetate hydrolase
7	63.0	129953601-130057386 (-)	<a href="#">Fgfr2</a> , fibroblast growth factor receptor 2
7		101696482-101711897 (-)	<a href="#">Inpp1l1</a> , inositol polyphosphate phosphatase-like 1
7	69.1	142488051-142489098 (-)	<a href="#">Ins2</a> , insulin II
7	33.0	70226952-70240235 (-)	<a href="#">Nr2f2</a> , nuclear receptor subfamily 2, group F, member 2
7	50.0	101692311-101696550 (+)	<a href="#">Phox2a</a> , paired-like homeobox 2a
7	29.0	59862064-59884054 (-)	<a href="#">Snrpn</a> , small nuclear ribonucleoprotein N



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## GO Browser

### Browse the Gene Ontologies

[Molecular Function](#)

[Biological Process](#)

[Cellular Component](#)

### Search the Gene Ontologies

Enter any text string or full GO accession number (include 'GO:' prefix)

Query:

Ontology:  Molecular Function  Biological Process  Cellular Component



# Gene Ontology Browser

Term Detail

GO term: **ligand-dependent nuclear receptor activity**  
Synonym: **nuclear hormone receptor**  
GO id: **GO:0004879**  
Definition: **A ligand-dependent receptor found in the nucleus of the cell.**  
Comments: **Note that this term represents a function and not a gene product. Consider also annotating to the molecular function term 'transcription regulator activity ; GO:0030528'.**  
Number of paths to term: **1**

① denotes an 'is-a' relationship  
② denotes a 'part-of' relationship

## Gene\_Ontology

### ①molecular function

#### ①signal transducer activity

##### ①receptor activity

- ①advanced glycation end-product receptor activity
- ①alpha-2 macroglobulin receptor activity
- ①apolipoprotein receptor activity +
- ①aryl hydrocarbon receptor activity
- ①coreceptor activity +
- ①corticotropin-releasing hormone receptor activity
- ①diuretic hormone receptor activity
- ①high molecular weight B cell growth factor receptor activity
- ①inositol-1,4,5-triphosphate receptor activity
- ①leucokinin receptor activity
- ①ligand-dependent nuclear receptor activity [GO:0004879] (48 genes, 106 annotations) ←
- ①juvenile hormone receptor activity
- ①retinoic acid receptor activity +
- ①steroid hormone receptor activity +
- ①thyroid hormone receptor activity
- ①vitamin D3 receptor activity
- ①neurotransmitter receptor activity +
- ①neurotrophin receptor activity
- ①pattern recognition receptor activity +
- ①peptide receptor activity +
- ①phorbol ester receptor activity +
- ①photoreceptor activity +
- ①receptor porin activity
- ①transmembrane receptor activity +
- ①U-plasminogen activator receptor activity



## Gene Ontology Annotations

Query Results -- Summary

106 matching items displayed

Searched Term: [ligand-dependent nuclear receptor activity](#)

Symbol, Name	Chr	Annotated Term	Category	Evidence	Ref(s)
<a href="#">Ahr</a> , aryl-hydrocarbon receptor	12	<a href="#">ligand-dependent nuclear receptor activity</a>	F	IDA	<a href="#">J:477</a>
<a href="#">Ar</a> , androgen receptor	X	<a href="#">androgen receptor activity</a>	F	IDA	<a href="#">J:78409</a> , <a href="#">J:91599</a>
<a href="#">Ar</a> , androgen receptor	X	<a href="#">steroid hormone receptor activity</a>	F	IEA	<a href="#">J:72247</a>
<a href="#">Esr1</a> , estrogen receptor 1 (alpha)	10	<a href="#">estrogen receptor activity</a>	F	ISS	<a href="#">J:113710</a>
<a href="#">Esr1</a> , estrogen receptor 1 (alpha)	10	<a href="#">ligand-dependent nuclear receptor activity</a>	F	IDA	<a href="#">J:94471</a>
<a href="#">Esr1</a> , estrogen receptor 1 (alpha)	10	<a href="#">steroid hormone receptor activity</a>	F	IEA	<a href="#">J:72247</a>
<a href="#">Esr2</a> , estrogen receptor 2 (beta)	12	<a href="#">ligand-dependent nuclear receptor activity</a>	F	IEA	<a href="#">J:72247</a>
<a href="#">Esr2</a> , estrogen receptor 2 (beta)	12	<a href="#">steroid hormone receptor activity</a>	F	IEA	<a href="#">J:72247</a>
<a href="#">Esrra</a> , estrogen related receptor, alpha	19	<a href="#">ligand-dependent nuclear receptor activity</a>	F	IEA	<a href="#">J:72247</a>
<a href="#">Esrra</a> , estrogen related receptor, alpha	19	<a href="#">steroid hormone receptor activity</a>	F	IEA	<a href="#">J:72247</a>
<a href="#">Esrrb</a> , estrogen related receptor, beta	12	<a href="#">ligand-dependent nuclear receptor activity</a>	F	IEA	<a href="#">J:72247</a>
<a href="#">Esrrb</a> , estrogen related receptor, beta	12	<a href="#">steroid hormone receptor activity</a>	F	IEA	<a href="#">J:72247</a>
<a href="#">Esrrg</a> , estrogen-related receptor gamma	1	<a href="#">ligand-dependent nuclear receptor activity</a>	F	RCA	<a href="#">J:99680</a>
<a href="#">Esrrg</a> , estrogen-related receptor gamma	1	<a href="#">steroid hormone receptor activity</a>	F	RCA	<a href="#">J:99680</a>
<a href="#">Hnf4a</a> , hepatic nuclear factor 4, alpha	2	<a href="#">ligand-dependent nuclear receptor activity</a>	F	IEA	<a href="#">J:72247</a>
<a href="#">Hnf4a</a> , hepatic nuclear factor 4, alpha	2	<a href="#">steroid hormone receptor activity</a>	F	IEA	<a href="#">J:72247</a>
<a href="#">Hnf4g</a> , hepatocyte nuclear factor 4, gamma	3	<a href="#">ligand-dependent nuclear receptor activity</a>	F	IEA	<a href="#">J:72247</a>
<a href="#">Hnf4g</a> , hepatocyte nuclear factor 4, gamma	3	<a href="#">steroid hormone receptor activity</a>	F	IEA	<a href="#">J:72247</a>
<a href="#">Nr0b1</a> , nuclear receptor subfamily 0, group B, member 1	X	<a href="#">ligand-dependent nuclear receptor activity</a>	F	RCA	<a href="#">J:80000</a>
<a href="#">Nr0b1</a> , nuclear receptor subfamily 0, group B, member 1	X	<a href="#">steroid hormone receptor activity</a>	F	IEA	<a href="#">J:72247</a>
<a href="#">Nr0b2</a> , nuclear receptor subfamily 0, group B, member 2	4	<a href="#">ligand-dependent nuclear receptor activity</a>	F	RCA	<a href="#">J:80000</a>
<a href="#">Nr0b2</a> , nuclear receptor subfamily 0, group B, member 2	4	<a href="#">steroid hormone receptor activity</a>	F	IEA	<a href="#">J:72247</a>
<a href="#">Nr1d2</a> , nuclear receptor subfamily 1, group D, member 2	14	<a href="#">ligand-dependent nuclear receptor activity</a>	F	IEA	<a href="#">J:72247</a>
<a href="#">Nr1d2</a> , nuclear receptor subfamily 1, group D, member 2	14	<a href="#">steroid hormone receptor activity</a>	F	IEA	<a href="#">J:72247</a>
<a href="#">Nr1d2</a> , nuclear receptor subfamily 1, group D, member 2	14	<a href="#">thyroid hormone receptor activity</a>	F	IEA	<a href="#">J:72247</a>



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[Protein Superfamily](#)





Search:

Enter any t

Query:  **Search the Mammalian Phenotype Ontology**

①denotes:


②denotes: Enter any text string or full MP accession number (include 'MP:' prefix)

Phen Query:  Search Reset

①denotes an 'is-a' relationship

②denotes a 'part-of' relationship

Phenotype Ontology [MP:0000001] (19030 genotypes, 77962 annotations)

- ①adipose tissue phenotype +
- ①behavior/neurological phenotype +
- ①cardiovascular system phenotype + 
- ①cellular phenotype +
- ①craniofacial phenotype +
- ①digestive/alimentary phenotype +
- ①embryogenesis phenotype +
- ①endocrine/exocrine gland phenotype +

- ①normal phenotype +
- ①other phenotype +
- ①pigmentation phenotype +
- ①renal/urinary system phenotype +
- ①reproductive system phenotype +
- ①respiratory system phenotype +
- ①skeleton phenotype +
- ①skin/coat/nails phenotype +
- ①taste/olfaction phenotype +
- ①touch/vibrissae phenotype +
- ①tumorigenesis +
- ①vision/eye phenotype +



## Mammalian Phenotype Ontology Annotations

Query Results -- Summary

30 genotypes with 31 annotations displayed

Searched Term: [abnormal vascular regression](#)

Allelic Composition (Genetic Background)	Annotated Term	Reference
<a href="#">Ahr<sup>tm1Bra</sup>/Ahr<sup>tm1Bra</sup></a> (involves: 129S1/Sv * 129X1/SvJ)	<a href="#">patent ductus venosus</a>	<a href="#">J:94465</a>
<a href="#">Ahr<sup>tm3.1Bra</sup>/Ahr<sup>tm3.1Bra</sup></a> <a href="#">Tg(Tek-cre)12Flv/0</a> (B6.Cg-Ahr <sup>tm3.1Bra</sup> Tg(Tek-cre)12Flv)	<a href="#">patent ductus venosus</a>	<a href="#">J:104388</a>
<a href="#">Ahr<sup>tm3Bra</sup>/Ahr<sup>tm3Bra</sup></a> (involves: 129/Sv * C57BL/6J * DBA/2)	<a href="#">patent ductus venosus</a>	<a href="#">J:94465</a>
<a href="#">Arid3b<sup>tm1Take</sup>/Arid3b<sup>tm1Take</sup></a> (B6.Cg-Arid3b <sup>tm1Take</sup> )	<a href="#">abnormal vascular regression</a>	<a href="#">J:108390</a>
<a href="#">Arnt<sup>tm1Bra</sup>/Arnt<sup>tm1Bra</sup></a> (involves: 129/Sv)	<a href="#">patent ductus venosus</a>	<a href="#">J:94465</a>
<a href="#">Ate1<sup>tm1Avar</sup>/Ate1<sup>tm1Avar</sup></a> (either: (involves: 129S1/Sv) or (involves: 129S1/Sv * C57BL/6J))	<a href="#">abnormal vascular regression</a>	<a href="#">J:77750</a>
<a href="#">Dll4<sup>tm1Grid</sup>/Dll4<sup>+</sup></a> (either: (involves: 129X1/SvJ * Black Swiss) or (involves: 129X1/SvJ * C57BL/6J))	<a href="#">abnormal vascular regression</a>	<a href="#">J:93125</a>
<a href="#">Dll4<sup>tm1Jrt</sup>/Dll4<sup>tm1Jrt</sup></a> (involves: 129S1/Sv * 129X1/SvJ * ICR)	<a href="#">abnormal vascular regression</a>	<a href="#">J:93157</a>
<a href="#">Dll4<sup>tm1Nwg</sup>/Dll4<sup>+</sup></a> (involves: 129 * C57BL/6)	<a href="#">abnormal vascular regression</a>	<a href="#">J:94740</a>
<a href="#">Flt4<sup>tm1Ali</sup>/Flt4<sup>tm1Ali</sup></a> (Not Specified)	<a href="#">abnormal vascular regression</a>	<a href="#">J:50761</a>
<a href="#">Foxc1<sup>tm1Blh</sup>/Foxc1<sup>tm1Blh</sup></a> (involves: 129S6/SvEvTac * Black Swiss)	<a href="#">patent ductus arteriosus</a>	<a href="#">J:57677</a>



## Phenotypic Allele Detail

Your Input Welcome

<b>Allele</b>	<b>Symbol:</b> $Ahr^{tm1Bra}$ <b>Name:</b> targeted mutation 1, Chris Bradfield <b>ID:</b> MGI:1857427												
<b>Synonyms</b>	Ahr <sup>-</sup> , AhrKO												
<b>Allele details</b>	<b>Allele Type:</b> Targeted (knock-out) <b>Strain of Origin:</b> (129X1/SvJ x 129S1/Sv)F1-Kitl <sup>+</sup> <b>ES Cell Line:</b> R1 <b>ES Cell Line Strain:</b> (129X1/SvJ x 129S1/Sv)F1-Kitl <sup>+</sup> <b>Mutation:</b> Disruption caused by insertion of vector A neomycin selection cassette replaced a genomic fragment containing exon 2, which encodes the basic-HLH domain essential for dimerization and DNA binding. Western blot analysis on liver cytosol demonstrated that the protein was not detectable in homozygous mice. ( <a href="#">J:33827</a> ) <b>International Mouse Strain Resource:</b> ( <a href="#">Search for IMSR strains</a> with Ahr mutations) <b>References and Additional Notes:</b> ( <a href="#">See Below</a> )												
<b>Gene information</b>	<b>Symbol:</b> <a href="#">Ahr</a> <b>Name:</b> aryl-hydrocarbon receptor <b>Chromosome:</b> 12 <b>Genetic Position:</b> 18.0 cM <b>Genome Coordinates:</b> Chr12:36083094-36119976 bp, - strand (From NCBI annotation of NCBI Build 36) <b>Human Ortholog:</b> <a href="#">AHR</a>												
<b>Phenotypes</b>	<b>Phenotypic details for all genotypes that include at least one <math>Ahr^{tm1Bra}</math> allele</b>												
	<table border="1"> <thead> <tr> <th rowspan="2">Phenotype</th> <th colspan="2">Genotype</th> </tr> <tr> <th>Allelic Composition</th> <th>Genetic Background</th> </tr> </thead> <tbody> <tr> <td><a href="#">Go To</a></td> <td><a href="#">Ahr<sup>tm1Bra</sup>/Ahr<sup>tm1Bra</sup></a></td> <td>involves: 129S1/Sv * 129X1/SvJ</td> </tr> <tr> <td><a href="#">Go To</a></td> <td><a href="#">Ahr<sup>tm1Bra</sup>/Ahr<sup>tm1Bra</sup></a></td> <td>involves: 129S1/Sv * 129X1/SvJ * C57BL/6</td> </tr> </tbody> </table>		Phenotype	Genotype		Allelic Composition	Genetic Background	<a href="#">Go To</a>	<a href="#">Ahr<sup>tm1Bra</sup>/Ahr<sup>tm1Bra</sup></a>	involves: 129S1/Sv * 129X1/SvJ	<a href="#">Go To</a>	<a href="#">Ahr<sup>tm1Bra</sup>/Ahr<sup>tm1Bra</sup></a>	involves: 129S1/Sv * 129X1/SvJ * C57BL/6
Phenotype	Genotype												
	Allelic Composition	Genetic Background											
<a href="#">Go To</a>	<a href="#">Ahr<sup>tm1Bra</sup>/Ahr<sup>tm1Bra</sup></a>	involves: 129S1/Sv * 129X1/SvJ											
<a href="#">Go To</a>	<a href="#">Ahr<sup>tm1Bra</sup>/Ahr<sup>tm1Bra</sup></a>	involves: 129S1/Sv * 129X1/SvJ * C57BL/6											
	<table border="1"> <thead> <tr> <th>Allelic Composition</th> <th>Genetic Background</th> </tr> </thead> <tbody> <tr> <td><a href="#">Ahr<sup>tm1Bra</sup>/Ahr<sup>tm1Bra</sup></a></td> <td>involves: 129S1/Sv * 129X1/SvJ</td> </tr> </tbody> </table>		Allelic Composition	Genetic Background	<a href="#">Ahr<sup>tm1Bra</sup>/Ahr<sup>tm1Bra</sup></a>	involves: 129S1/Sv * 129X1/SvJ							
Allelic Composition	Genetic Background												
<a href="#">Ahr<sup>tm1Bra</sup>/Ahr<sup>tm1Bra</sup></a>	involves: 129S1/Sv * 129X1/SvJ												
	<b>cardiovascular system</b> <a href="#">patent ductus venosus (<a href="#">J:94465</a>)</a> <ul style="list-style-type: none"> <li>a patent ductus venosus (shunting blood around the liver) was seen in all mutants</li> <li>exposure to non-teratogenic concentration of dioxin on E18.5 did not result in closure of the ductus venosus in any mutants unlike in <math>Ahr^{tm3Bra}</math> homozygotes</li> </ul>												
	<b>endocrine/exocrine glands</b> <a href="#">abnormal ovarian folliculogenesis (<a href="#">J:82983</a>, <a href="#">J:83527</a>)</a> <ul style="list-style-type: none"> <li>reduced numbers preantral and antral follicles (<a href="#">J:82983</a>)</li> <li>no increase in atresia relative to wild type (<a href="#">J:82983</a>)</li> <li>increased number of primordial follicles relative to wild type at 2 to 3 days of age, similar numbers were observed in both mutant and wild type ovaries between 8 and 53 days of age (<a href="#">J:83527</a>)</li> <li>reduced numbers preantral and antral follicles at 53 days of age (<a href="#">J:83527</a>)</li> </ul> <a href="#">decreased number of corpora lutea (<a href="#">J:83527</a>)</a> <ul style="list-style-type: none"> <li>fewer corpora lutea by 45 days of age</li> </ul> <a href="#">small ovary (<a href="#">J:82983</a>)</a>												

## Gene/Marker Batch Query Prototype

Upload a batch of IDs to get back associated gene data from MGI. Results may be in web or tab-delimited format. [Help](#)

Input  
IDs

Enter list of IDs:

NM\_178632  
NM\_009423  
NM\_009866  
NM\_178757  
NM\_011443  
NM\_008453  
NM\_008453  
NM\_010686  
NM\_027320  
NM\_011903

or Upload a file of IDs:

Choose File no file selected

File Type:

tab-delimited  comma separated

Column Containing IDs:

Input ID type:

Output

Gene/Marker data to return:

Gene Attributes:

Nomenclature

Genome Location

Ensembl ID

Entrez Gene ID

VEGA ID

Additional Information:

Gene Ontology (GO)

Mammalian Phenotype (MP)

MGI Allele ID

GenBank ID

RefSNP ID

UniProt ID

None

Format:

Search

Reset



NM_025860	<a href="#">MGI:1914192</a>	Ddx18	DEAD (Asp-Glu-Ala-Asp) box polypeptide 18	Gene	1	-	123381385	123395480	ENSMUSG00000001674	66942	
NM_016749	<a href="#">MGI:1858196</a>	Mybph	myosin binding protein H	Gene	1	+	136009859	136017643	ENSMUSG000000042451	53311	
NM_178632	<a href="#">MGI:1924315</a>	Ints7	integrator complex subunit 7	Gene	1	+	193276377	193323361	ENSMUSG000000037461	77065	
NM_007389	<a href="#">MGI:87885</a>	Chrna1	cholinergic receptor, nicotinic, alpha polypeptide 1 (muscle)	Gene	2	-	73364054	73381177	ENSMUSG000000027107	11435	OTTMUSG0000000134
NM_008652	<a href="#">MGI:101785</a>	Mybl2	myeloblastosis oncogene-like 2	Gene	2	+	162746128	162776129	ENSMUSG000000017861	17865	OTTMUSG0000000011
NM_011443	<a href="#">MGI:98364</a>	Sox2	SRY-box containing gene 2	Gene	3	+	34841604	34844008	ENSMUSG000000074637	20674	
NM_008727	<a href="#">MGI:97371</a>	Npr1	natriuretic peptide receptor 1	Gene	3	-	90536519	90552265	ENSMUSG000000027931	18160	
NM_008636	<a href="#">MGI:101786</a>	Mtf1	metal response element binding transcription factor 1	Gene	4	+	124304408	124351683	ENSMUSG000000028890	17764	OTTMUSG0000000091

## Gene/Marker Batch Query Prototype


Upload a batch of IDs to get back associated gene data from MGI. Results may be in web or tab-delimited format. [Help](#)

Input  
IDs

Enter list of IDs:

or Upload a file of IDs:

Choose File

 dnaRepairGenes.mgi

File Type:

tab-delimited  comma separated

Column Containing IDs:

Input ID type:

Output

Gene/Marker data to return:

Gene Attributes:

Nomenclature  Genome Location  Ensembl ID  Entrez Gene ID  VEGA ID

Additional Information:

Gene Ontology (GO)  Mammalian Phenotype (MP)  MGI Allele ID  GenBank ID  
 RefSNP ID  UniProt ID  None

Format:


Search

Reset

Input ID	MGI	Marker ID	Symbol Name	Marker Type	
Chr	Strand	Start	End	Build	Ensembl ID
MGI:97900	MGI:97900	Rep1	repair of chromatin damage 1		
Gene	1	null	null	null	null
MGI:103582	MGI:103582	Ercc5	excision repair cross-complementing rodent		
Gene	1	+	44092393	44125806	NCBI Build 36
ENSMUSG00000026048					
MGI:1197010	MGI:1197010	Sumo1	SMT3 suppressor of mif two 3 homolog		
Gene	1	-	59583983	59615355	NCBI Build 36
ENSMUSG00000026021					
MGI:104517	MGI:104517	Xrcc5	X-ray repair complementing defective repair		
Gene	1	+	72240728	72328156	NCBI Build 36
ENSMUSG00000026187					
MGI:1340806	MGI:1340806	Parp1	poly (ADP-ribose) polymerase family,		
Gene	1	+	182405648	182437928	NCBI Build 36
ENSMUSG00000026496					
MGI:97890	MGI:97890	Rad51	RAD51 homolog (S. cerevisiae)		
Gene	2	+	118804234	118838886	NCBI Build 36
ENSMUSG00000027323					
MGI:97901	MGI:97901	Rep2	repair of chromatin damage 2		
Gene	4	null	null	null	null
MGI:99135	MGI:99135	Xpa	xeroderma pigmentosum, complementation group A		
Gene	4	-	46176447	46217411	NCBI Build 36
ENSMUSG00000028329					
MGI:105128	MGI:105128	Rad23b	RAD23b homolog (S. cerevisiae)		
Gene	4	+	55371143	55413337	NCBI Build 36
ENSMUSG00000028426					
MGI:894697	MGI:894697	Rad54l	RAD54 like (S. cerevisiae)		
Gene	4	-	115592196	115621622	NCBI Build 36
ENSMUSG00000028702					
MGI:1917853	MGI:1917853	Mutyh	mutY homolog (E. coli)		
Gene	4	+	116305655	116317370	NCBI Build 36
ENSMUSG00000028687					
MGI:1194912	MGI:1194912	Rbbp4	retinoblastoma binding protein 4		
Gene	4	-	128809404	128837674	NCBI Build 36
ENSMUSG00000057226					

## Gene/Marker Batch Query Prototype

Upload a batch of IDs to get back associated gene data from MGI. Results may be in web or tab-delimited format. [Help](#)

<b>Input IDs</b>	<b>Enter list of IDs:</b>	<b>or Upload a file of IDs:</b>
	<input type="text"/>	<input type="button" value="Choose File"/>  dnaRepairGenes.mgi File Type: <input checked="" type="radio"/> tab-delimited <input type="radio"/> comma separated Column Containing IDs: <input type="text" value="1"/>
	Input ID type: <input type="text" value="MGIMarker"/>	
<b>Output</b>	Gene/Marker data to return: Gene Attributes: <input checked="" type="checkbox"/> Nomenclature <input type="checkbox"/> Genome Location <input type="checkbox"/> Ensembl ID <input type="checkbox"/> Entrez Gene ID <input type="checkbox"/> VEGA ID Additional Information: <input checked="" type="radio"/> Gene Ontology (GO) <input type="radio"/> Mammalian Phenotype (MP) <input type="radio"/> MGI Allele ID <input type="radio"/> GenBank ID <input type="radio"/> RefSNP ID <input type="radio"/> UniProt ID <input type="radio"/> None Format: <input type="text" value="Web"/>	
<input type="button" value="Search"/> <input type="button" value="Reset"/>		

## Gene/Marker Batch Query Results

**You Searched for...**

**Number of IDs entered:** 81

**ID Type:** MGIMarker

**File Name:** dnaRepairGenes.mgi

**File Type:** Tab Delimited

**ID Column:** 1

**Return Data sets:** Nomenclature, GO

886 matching items displayed.

Input ID	MGI Marker ID	Nomenclature			Gene Ontology (GO)	
		Symbol	Name	Marker Type	ID	Term
MGI:101789	<a href="#">MGI:101789</a>	Lig1	ligase I, DNA, ATP-dependent	Gene	GO:0005524	ATP binding
MGI:101789	<a href="#">MGI:101789</a>	Lig1	ligase I, DNA, ATP-dependent	Gene	GO:0007049	cell cycle
MGI:101789	<a href="#">MGI:101789</a>	Lig1	ligase I, DNA, ATP-dependent	Gene	GO:0051301	cell division
MGI:101789	<a href="#">MGI:101789</a>	Lig1	ligase I, DNA, ATP-dependent	Gene	GO:0003677	DNA binding
MGI:101789	<a href="#">MGI:101789</a>	Lig1	ligase I, DNA, ATP-dependent	Gene	GO:0003910	DNA ligase (ATP) activity
MGI:101789	<a href="#">MGI:101789</a>	Lig1	ligase I, DNA, ATP-dependent	Gene	GO:0006310	DNA recombination
MGI:101789	<a href="#">MGI:101789</a>	Lig1	ligase I, DNA, ATP-dependent	Gene	GO:0006281	DNA repair
MGI:101789	<a href="#">MGI:101789</a>	Lig1	ligase I, DNA, ATP-dependent	Gene	GO:0006260	DNA replication
MGI:101789	<a href="#">MGI:101789</a>	Lig1	ligase I, DNA, ATP-dependent	Gene	GO:0016874	ligase activity
MGI:101789	<a href="#">MGI:101789</a>	Lig1	ligase I, DNA, ATP-dependent	Gene	GO:0000166	nucleotide binding

## Gene/Marker Batch Query Prototype

Upload a batch of IDs to get back associated gene data from MGI. Results may be in web or tab-delimited format. [Help](#)

**Input  
IDs**

Enter list of IDs:

GO:0030902

or Upload a file of IDs:

no file selected

File Type:

tab-delimited  comma separated

Column Containing IDs:

Input ID type:

**Output**

Gene/Marker data to return:

Gene Attributes:

Nomenclature

Genome Location

Ensembl ID

Entrez Gene ID

VEGA ID

Additional Information:

Gene Ontology (GO)

Mammalian Phenotype (MP)

MGI Allele ID

GenBank ID

RefSNP ID

UniProt ID

None

Format:

## Gene/Marker Batch Query Results

*You Searched for...*

Number of IDs entered: 1

ID Type: GO

Return Data sets: Nomenclature, Location

28 matching items displayed.

Input ID	MGI Marker ID	Nomenclature			Genome Location - NCBI Build 36			
		Symbol	Name	Marker Type	Chr	Strand	Start	End
GO:0030902	<a href="#">MGI:95668</a>	Gbx2	gastrulation brain homeobox 2	Gene	1	-	91759133	91762347
GO:0030902	<a href="#">MGI:95728</a>	Gli2	GLI-Kruppel family member GLI2	Gene	1	-	120661607	120881165
GO:0030902	<a href="#">MGI:95389</a>	En1	engrailed 1	Gene	1	+	122430227	122435517
GO:0030902	<a href="#">MGI:1328312</a>	Ptf1a	pancreas specific transcription factor, 1a	Gene	2	+	19363417	19365255
GO:0030902	<a href="#">MGI:107404</a>	Tbr1	T-box brain gene 1	Gene	2	+	61603769	61614953
GO:0030902	<a href="#">MGI:1339708</a>	Neurod1	neurogenic differentiation 1	Gene	2	-	79253360	79257590
GO:0030902	<a href="#">MGI:95516</a>	Fgf2	fibroblast growth factor 2	Gene	3	+	37504068	37596926
GO:0030902	<a href="#">MGI:1859993</a>	Smad9	MAD homolog 9 (Drosophila)	Gene	3	+	54843511	54889186