

www.alliancegenome.org



Navigate the Alliance of Genome Resources (aka Alliance) for Obesity Models

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10/4/2024



GLOBAL
CORE
BIODATA
RESOURCE



The Alliance: a Comparative Genomics Knowledgebase

Mouse, Rat, Zebrafish, *Drosophila*, *C. elegans*, Yeast, Frog, and Human

ALLIANCE
of GENOME RESOURCES

Version: 6.0.0
Date: Thu Sep 28 2023

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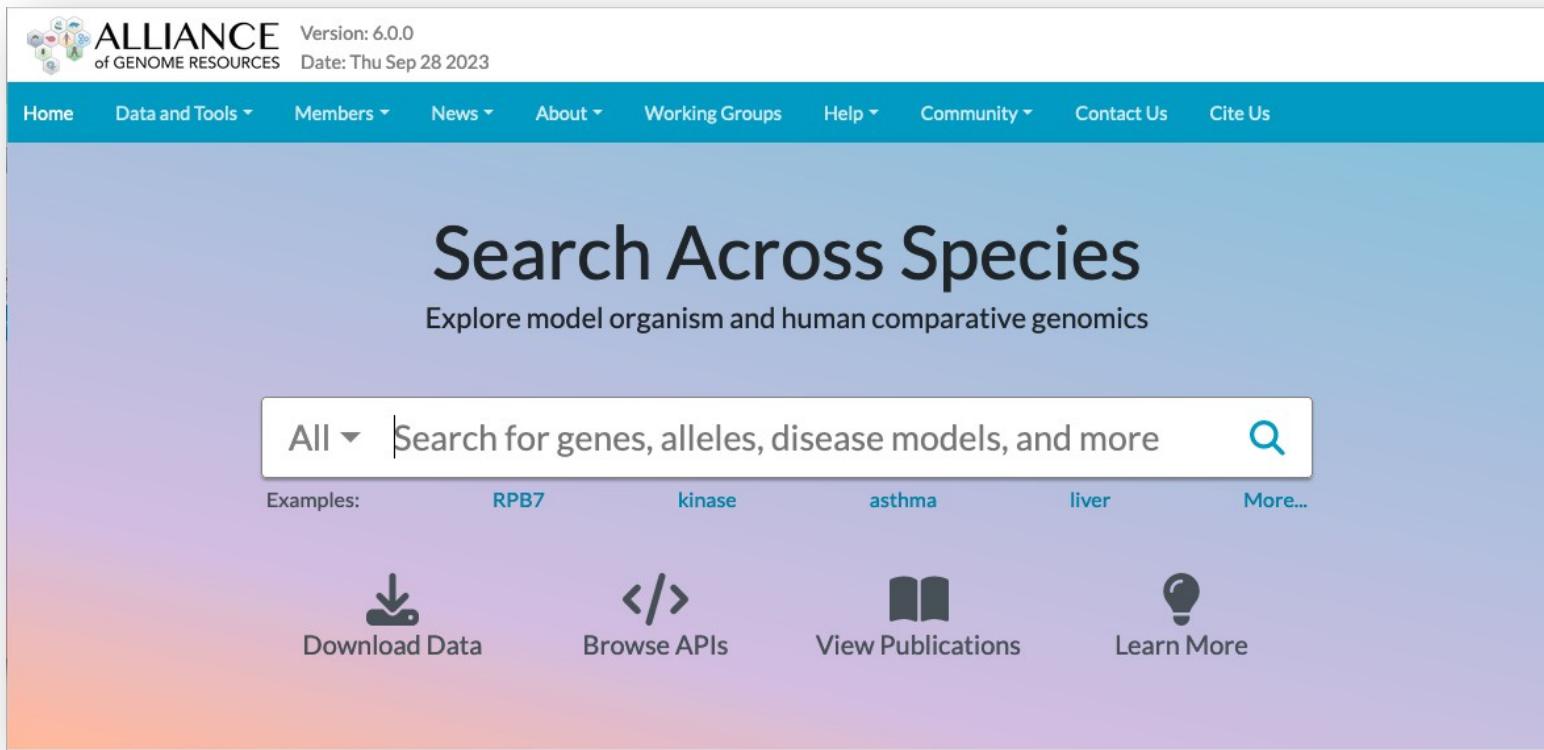
Search Across Species

Explore model organism and human comparative genomics

All ▾ Search for genes, alleles, disease models, and more 

Examples: RPB7 kinase asthma liver More...

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The Alliance links genes from **seven model organism databases and the Gene Ontology Consortium** to harmonized knowledge about:

- Alleles and Variants
- Function
- Phenotype
- Human Disease Associations
- Expression
- Molecular Interactions
- Genetic Interactions

Alliance Data and Access

A lot of information across species

Category	
◆ Allele/Variant	406,266,443
◆ Gene	355,039
◆ Model	148,462
◆ Gene Ontology	42,095
◆ HTP Dataset Index	16,022
◆ Disease	11,612

A lot of ways to access the information

- Website (individual pages)
 - Genes, Alleles, Variants, etc.
- Downloads
 - Bulk files
- Alliance API
- Releases every 4-6 weeks

Can the Alliance Help Me Find an Obesity Model?

www.alliancegenome.org

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What is the Alliance of Genome Resources?

A consortium of 7 model organism databases (MODs) and the Gene Ontology (GO) Consortium whose goal is to provide an integrated view of their data to all biologists, clinicians and other interested parties.

The primary mission of the Alliance of Genome Resources (the Alliance) is to develop and maintain sustainable genome information resources that facilitate the use of diverse model organisms in understanding the genetic and genomic basis of human biology, health and disease. This understanding is fundamental for advancing genome biology research and for translating human genome data into clinical utility.

Join the Alliance User Community

Click here to access official announcements, ask questions, and view discussions with other members of the Alliance Community.

Join today to stay up-to-date.

Members



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Search Across Species

Explore model organism and human comparative genomics

All ▾ **obesity**

Examples:

RPB7

kinase

asthma

liver

More...

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Category

Allele/Variant	108,481
Gene	4,087
Model	491
HTP Dataset Index	154
Disease	26



Facets to refine search

113,239 results for obesity

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obesity

Disease

Source: DOID:9970

Definition: An overnutrition that is characterized by excess body fat, traditionally defined as an elevated ratio of weight to height (specifically 30 kilograms per meter squared), has_material_basis_in a multifactorial etiology related to excess nutrition intake, decreased caloric utilization, and genetic susceptibility, and possibly medications and certain disorders of metabolism, endocrine function, and mental illness.

Symbol: *obesity***Name:** *obesity*...*obesity*...*obesity*

Gene (3450) Allele/Variant (123) Model (102)

***Obesity* during preclinical Alzheimer's disease development exacerbates brain metabolic decline** (*Rattus norvegicus*)

HTP Dataset Index

High-Throughput (HTP) Dataset Index metadata provided by RGD
ID: GEO:GSE254650

Tags: unclassified

Summary: Alzheimer's disease (AD) is the most common form of dementia.

Obesity in middle age increases AD risk and severity, which is alarming given that obesity prevalence peaks at middle age and obesity rates are accelerating worldwide. Midlife, but not late-life obesity increases AD risk, suggesting that this interaction is specific to preclinical AD. AD pathology begins in middle age,

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All **obesity** DOID:9970

Examples: RPB7

Summary

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Associated Genes

Associated Alleles

Associated Models

Sort by Default

Associated Models

Model	Species	Experimental Condition	Association	Disease Qualifiers	Disease	Condition
BBDR.LA-(D5Rat98-D5Rat233), BBDP-(D4Mit6-D4Mit7)/Rhw	<i>Rattus norvegicus</i>		is model of		obesity	
Annotation details						
BBDR.LA-(D5Rat98-D5Rat233)/Rhw	<i>Rattus norvegicus</i>		is model of		obesity	
Annotation details						
Beta IIM	<i>Rattus norvegicus</i>		is model of		obesity	
Annotation details						
F344	<i>Rattus norvegicus</i>		does NOT model		obesity	
Annotation details						
F344-Lep ^{m1Kyo}	<i>Rattus norvegicus</i>		is model of		obesity	
Annotation details						
FDIO/Rrrc	<i>Rattus norvegicus</i>	induced by: diet: controlled calorie content diet diet: controlled fat content diet	is model of		obesity	
Annotation details						
FDIO/Rrrc	<i>Rattus norvegicus</i>		is model of		obesity	
Annotation details						
Ho:ZFDM-Lepr ^{f3}	<i>Rattus norvegicus</i>		is model of		obesity	
Annotation details						
LA-cp/NJcr	<i>Rattus norvegicus</i>		is model of		obesity	
Annotation details						
LCR/Mco	<i>Rattus norvegicus</i>		is model of		obesity	
Annotation details						

Showing 1 - 10 of 112 rows per page

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Search Across

Explore model organism and human c

All ▾ **obesity**

Examples: RPB7 kinase as



Download Data



Browse APIs

View I

- All genes with annotations to obesity (not exclusively)
- Cross-species info
- GO annotations
- Expression patterns

Gene[Show all Categories](#)**Species***Danio rerio* 594*Mus musculus* 488*Homo sapiens* 487*Rattus norvegicus* 479*Xenopus tropicalis* 401*Caenorhabditis elegans* 321*Drosophila melanogaster* 297*Xenopus laevis* 284*Saccharomyces cerevisiae* 99

Show More

Biotypes

protein coding gene 2,744

other gene 687

ncRNA gene 13

pseudogene 6

Diseases

disease of metabolism 3,450

cardiovascular system disease 1,938

3,450 results

Gene **Diseases: obesity**

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**Gene****Wg** (*Drosophila melanogaster*)

Name: wingless

Synonyms: fg, Wingless, flag, wingless, I, I(2)rO727, D.int-1, Dint-1, lethal (2) SH1281, WG, I(2)wg, I(2)SH1281, dWnt, Dwnt-1, Glazed, Sternopleural, Wnt, WNT, wgl, Wnt1, glazed, wnt1, spd, Complementation group I, int-1, spade, Dm-1, Br, Wg, Dm Wg, DWint-1, Bristled, I(2)SH2 1281, DWnt-1, I(2)02657, CG4889, Wnt-1, wnt, Gla, Sp
Source: FB:FBgn0284084
Biotype: protein coding gene
Disease (3) Allele/Variant (430)**Gene****Apoe** (*Mus musculus*)

Name: apolipoprotein E

Synonyms: expressed sequence AI255918, APOEA, AI255918

Source: MGI:88057

Biotype: protein coding gene

Disease (64) Allele/Variant (146) Model (240)

Gene**daf-2** (*Caenorhabditis elegans*)

Name: abnormal DAuer Formation 2

Synonyms: Y55D5A.5, CELE_Y55D5A.5

Source: WB:WBGene00000898

Biotype: protein coding gene

Disease (61) Allele/Variant (918) Model (165)

Search Across S

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All ▾ **obesity**

Examples:

RPB7

kinase

asthm

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Apoe

*Mus musculus*MGI:88057 

Summary

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Paralogy

Function - GO Annotations

Pathways

Phenotypes

Disease Associations

Alleles and Variants

Transgenic Alleles

Models

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Expression

Molecular Interactions

Genetic Interactions

• GENE

Apoe

Species *Mus musculus*

Symbol Apoe

Name apolipoprotein E

Synonyms AI255918

APOEA

▼ Show All 3

Biotype protein coding gene

Automated Description 

Enables several functions, including cholesterol transfer activity; heparan sulfate proteoglycan binding activity; and phosphatidylcholine-sterol O-acyltransferase activator activity. Involved in several processes, including negative regulation of macromolecule metabolic process; plasma lipoprotein particle remodeling; and regulation of defense response. Acts upstream of or within with a negative effect on gene expression. Acts upstream of or within several processes, including cholesterol catabolic process; cholesterol efflux; and negative regulation of triglyceride metabolic process. Located in extracellular space. Part of low-density lipoprotein particle. Is active in glutamatergic synapse. Is expressed in several structures, including alimentary system; central nervous system; genitourinary system; liver and biliary system; and sensory organ. Used to study Alzheimer's disease; age related macular degeneration 1; and homocystinuria. Human ortholog(s) of this gene implicated in several diseases, including Alzheimer's disease (multiple); artery disease (multiple); biliary tract cancer (multiple); eye disease (multiple); and familial hyperlipidemia (multiple). Orthologous to human APOE (apolipoprotein E).

MGI Description

PHENOTYPE: Mutations at this locus cause diet-induced hypercholesterolemia and atherosclerosis. Homozygous null mutants also develop foam-cell rich deposits in proximal aorta, impaired blood-nerve and blood-brain barriers, and many xanthomatous lesions.
[provided by MGI curators]

Cross References

ENSEMBL:ENSMUSG00000002985 NCBI_Gene:11816 

▼ Show All 15

Additional Information

Literature 



Apoe

Mus musculus
MGI:88057

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All ▾ **obesity**

Examples:

RPB7

kinase

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Models

Model Name	Experimental Condition	Associated Human Diseases	Associated Phenotypes
A ^{y/a} Apoe ^{tm1Unc} /Apoe ^{tm1Unc} [background:] involves: 129P2/OlaHsd * C57BL/6J * KK/TaJcl		abdominal obesity-metabolic syndrome	- abnormal glomerular mesangium morphology - abnormal inflammatory response
Apob ^{tm2Sgy} /Apob ^{tm2Sgy} Apoe ^{tm1Unc} /Apoe ^{tm1Unc} Lep ^{ob} /Lep ^{ob} [background:] involves: 129P2/OlaHsd * 129S7/SvEvBrd * C57BL/6		abdominal obesity-metabolic syndrome 1	- abnormal circulating cholesterol level - atherosclerotic lesions
Apoe ^{tm1Unc} /Apoe ^{tm1Unc} Cbs ^{tm1Unc} /Cbs ^{tm1Unc} Tg(Mt1-CBS)25Waku/0 [background:] involves: 129P2/OlaHsd * C3H * C57BL/6		homocystinuria	- decreased body weight - increased Ly6C high monocyte number
Apoe ^{tm1Unc} /Apoe ^{tm1Unc} Clu ^{tm1Jakh} /Clu ^{tm1Jakh} Tg(APPV717F)109Ili/Tg(APPV717F)109Ili [background:] involves: 129P2/OlaHsd * 129S2/SvPas		Alzheimer's disease	- amyloid beta deposits - amyloidosis
Apoe ^{tm1Unc} /Apoe ^{tm1Unc} Cyp19a1 ^{tm1Esi} /Cyp19a1 ^{tm1Esi} [background:] involves: 129P2/OlaHsd * 129S6/SvEvTac * C57BL/6		abdominal obesity-metabolic syndrome	- abnormal aorta bulb morphology - abnormal gonadal fat pad morphology
Apoe ^{tm1Unc} /Apoe ^{tm1Unc} Fasl ^{gld} /Fasl ^{gld} [background:] B6.Cg-Fasl ^{gld} Apoe ^{tm1Unc}		systemic lupus erythematosus	- abnormal lymph node morphology - abnormal renal glomerulus morphology

ALLIANCE Version: 7.3.0 Date: Wed Jul 17 2024

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491 results for obesity Page 3 of 10 < >

28 results for obesity Page 1 of 1 < >

Species: *Rattus norvegicus* Model

Search Across Species

Explore model organism and RGD

Model ▾ obesity Examples: RPBZ kinase

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[Strain Registration](#)

General

Strain: SD-*Lepr*^{em2}

Symbol:	SD- <i>Lepr</i> ^{em2}
Strain:	SD- <i>Lepr</i> ^{em2}
RGD ID:	12910517
Citation ID:	RRID:RGD_12910517
Ontology ID:	RS:0004467
Alleles:	<i>Lepr</i> ^{em2}
Also Known As:	lepr ^{d1/d1} ; SD-Leprem2; SD- <i>Lepr</i> ^{^em2}
Type:	mutant
Available Source:	Not Available
Origination:	East China Normal University, Shanghai, China
Description:	This strain was produced by injecting TALEN targeting the sequence of rat <i>Lepr</i> into SD embryos. The resulting mutation is a 1-bp deletion.
Last Known Status:	Unknown

Position

Rat Assembly	Chr	Position (strand)	Source	JBrowse
mRatBN7.2	5	116,372,431 - 116,372,431	RGD_MAPPER_PIPELINE	mRatBN7.2
Rnor_6.0	5	120,581,486 - 120,581,486	RGD_MAPPER_PIPELINE	Rnor6.0
Rnor_5.0	5	124,380,327 - 124,556,585	RGD_MAPPER_PIPELINE	Rnor5.0
RGSC_v3.4	5	122,320,075 - 122,503,449	RGD_MAPPER_PIPELINE	RGSC3.4

Summary

- Annotation: RGD Manual Disease
- References: References - curated
- Region: Allelic Variants



Search



Sign

Model obesity

Examples: RPB7 kinase

RRP7

Diseases

disease of *mitfa*^{b692/b692}; *edn...*bacterial in
cancer

Summary

cardiovascula
Human Disease

central ner...

Gene Expression

Genes

Phenotype

ednrba (Dr)
Citations

mitfa (Dre)

Alleles

b140 (Dre)

b692 (Dre)

ym104Tg (I)

FISH

mitfa^{b692/b692}; *ednrba*^{b140/b140}

ID ZDB-FISH-171204-6**Name** *mitfa*^{b692/b692}; *ednrba*^{b140/b140}**Genotype** *mitfa*^{b692/b692}; *ednrba*^{b140/b140} **Targeting****Reagent**

Human Disease modelled by *mitfa*^{b692/b692};
ednrba^{b140/b140}

Disease	Conditions	Citation
obesity	increased food availability	Nishimura <i>et al.</i> , 2015

Data Availability - Downloads

- Static file URLs
- Updated w/versions
- Different formats
 - JSON
 - TSV
 - VCF
 - TXT
- Combined or individual organisms

The screenshot shows the ALLIANCE of Genome Resources website. At the top, there is a navigation bar with links for Home, Data and Tools, Members, News, About, Working Groups, Help, Community, Contact Us, and Cite Us. A search bar at the top right contains the text "search: RPB7, kinase, asthma, liver". Below the navigation bar, there is a sidebar with links for Downloads, Disease (which is highlighted in blue), Expression, Gene Descriptions, Molecular Interactions, Genetic Interactions, Orthology, Variants (VCF), and Variants/Alleles. The main content area is titled "Downloads" and "Disease". It lists various organism associations with download links for JSON and TSV formats. The listed organisms include All disease associations, *Caenorhabditis elegans*, *Danio rerio*, *Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, *Rattus norvegicus*, *Saccharomyces cerevisiae*, *Xenopus laevis*, and *Xenopus tropicalis*.

Description	Download
All disease associations	JSON TSV
<i>Caenorhabditis elegans</i> associations	JSON TSV
<i>Danio rerio</i> associations	JSON TSV
<i>Drosophila melanogaster</i> associations	JSON TSV
<i>Homo sapiens</i> associations	JSON TSV
<i>Mus musculus</i> associations	JSON TSV
<i>Rattus norvegicus</i> associations	JSON TSV
<i>Saccharomyces cerevisiae</i> associations	JSON TSV
<i>Xenopus laevis</i> associations	JSON TSV
<i>Xenopus tropicalis</i> associations	JSON TSV

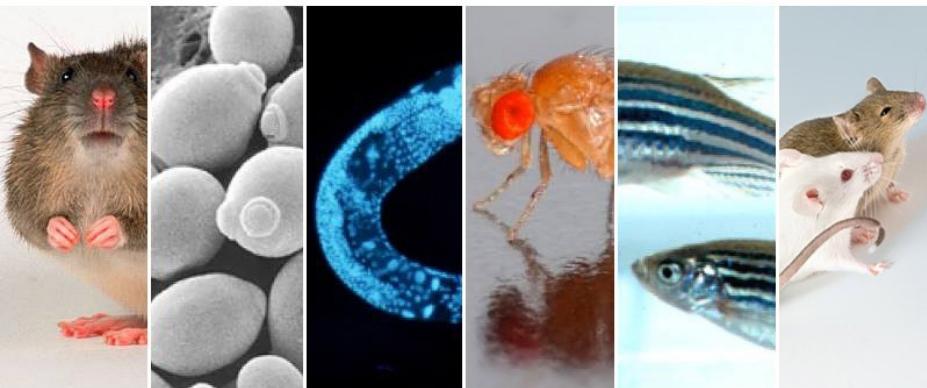
The Alliance Team



Alliance Executive Steering Committee:

Carol Bult
Mike Cherry
Paul Sternberg
Paul Thomas
Aaron Zorn
Gavin Sherlock

Monte Westerfield
Brian Calvi
Anne Kwitek
Chris Mungall
Lincoln Stein



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