

“find me genes involved in signal transduction that are related to pyramidal neurons”

[Book results for pyramidal neurons signal transduction](#)



[Cerebral Signal Transduction](#) - by Maarten Eduard Anton Reith - 440 pages

[Neuroprotective Signal Transduction](#) - by Mark Paul. Mattson - 347 pages

[Toxins And Signal Transduction](#) - by Yehuda Gutman, Philip Lazarovici - 520 pages

[Neurotrophin-3 and brain-derived neurotrophic factor activate ...](#)

... and brain-derived neurotrophic factor activate multiple **signal transduction** events but are not survival factors for hippocampal **pyramidal neurons**. ...

www.ihop-net.org/UniPub/iHOP/pm/646092.html?pmid=8752100 - 12k -

[Cached](#) - [Similar pages](#) - [Note this](#)

[K+ channel regulation of signal propagation in dendrites of ...](#)

Pyramidal neurons receive tens of thousands of synaptic inputs on their dendrites. ...

Signal Transduction* Substances Potassium Channel Blockers ...

[www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9202119&dopt=Abstract)

[db=PubMed&list_uids=9202119&dopt=Abstract](#) - [Similar pages](#) - [Note this](#)

[Dopamine modulates inwardly rectifying potassium currents in ...](#)

Using outside-out patches of mPFC **pyramidal neurons**, which preclude involvement of ...

Signal Transduction/drug effects **Signal Transduction**/physiology ...

[www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=15044547&dopt=Abstract)

[db=PubMed&list_uids=15044547&dopt=Abstract](#) - [Similar pages](#) - [Note this](#)

[[More results from www.ncbi.nlm.nih.gov](#)]

[Loss of Hippocampal CA3 Pyramidal Neurons in Mice Lacking STAM1 ...](#)

Loss of Hippocampal CA3 **Pyramidal Neurons** in Mice Lacking STAM1 ... and to be involved in the regulation of intracellular **signal transduction** mediated by ...

mcb.asm.org/cgi/content/abstract/21/11/3807 - [Similar pages](#) - [Note this](#)

for signal transduction pyramidal neurons

Go

Clear

[Save Search](#)

Limits

Preview/Index

History

Clipboard

Details

Display Summary

Show

20

Sort By

Send to


All: 2580

Review: 160

Items 1 - 20 of 2580

Page 1 of 129 Next


1: [Naimark A, Barkai E, Matar MA, Kaplan Z, Kozlovsky N, Cohen H.](#) [Related Articles, Links](#)

 Upregulation of neurotrophic factors selectively in frontal cortex in response to olfactory discrimination learning.

Neural Plast. 2007;:13427.

PMID: 17710248 [PubMed - in process]


2: [Nistico R, Piccirilli S, Sebastianelli L, Nistico G, Bernardi G, Mercuri NB.](#) [Related Articles, Links](#)

 The blockade of K(+)-ATP channels has neuroprotective effects in an in vitro model of brain ischemia.

Int Rev Neurobiol. 2007;82:383-95.

PMID: 17678973 [PubMed - indexed for MEDLINE]


3: [Schmidt-Hieber C, Jonas P, Bischofberger J.](#) [Related Articles, Links](#)

 Subthreshold dendritic signal processing and coincidence detection in dentate gyrus granule cells.

J Neurosci. 2007 Aug 1;27(31):8430-41.

PMID: 17670990 [PubMed - indexed for MEDLINE]







4: [Alvarez VA, Ridenour DA, Sabatini BL.](#) [Related Articles, Links](#)







 Distinct structural and ionotropic roles of NMDA receptors in controlling spine and synapse stability.



























J Neurosci. 2007 Jul 11;27(28):7365-76.


























PMID: 17626197 [PubMed - indexed for MEDLINE]

5: [Smith SS, Gong QH.](#) [Related Articles, Links](#)

2580		PubMed: biomedical literature citations and abstracts	
959		PubMed Central: free, full text journal articles	
none		Site Search: NCBI web and FTP sites	

2		Books: online books	
4		OMIM: online Mendelian Inheritance in Man	
none		OMIA: online Mendelian Inheritance in Animals	

10		CoreNucleotide: Core subset of nucleotide sequence records	
none		EST: Expressed Sequence Tag records	
34		GSS: Genome Survey Sequence records	
16		Protein: sequence database	
5		Genome: whole genome sequences	
none		Structure: three-dimensional macromolecular structures	
none		Taxonomy: organisms in GenBank	
none		SNP: single nucleotide polymorphism	
35		Gene: gene-centered information	
10		HomoloGene: eukaryotic homology groups	
none		PubChem Compound: unique small molecule chemical structures	
none		PubChem Substance: deposited chemical substance records	
none		Genome Project: genome project information	

2		dbGaP: genotype and phenotype	
none		UniGene: gene-oriented clusters of transcript sequences	
none		CDD: conserved protein domain database	
none		3D Domains: domains from Entrez Structure	
none		UniSTS: markers and mapping data	
none		PopSet: population study data sets	
none		GEO Profiles: expression and molecular abundance profiles	
none		GEO DataSets: experimental sets of GEO data	
none		Cancer Chromosomes: cytogenetic databases	
none		PubChem BioAssay: bioactivity screens of chemical substances	
none		GENSAT: gene expression atlas of mouse central nervous system	
none		Probe: sequence-specific reagents	
1394		Protein Clusters: a collection of related protein sequences	

the Neurocommons:
semantic web proof of concept

getting precise answers to complex biological
questions

in conjunction with SW HCLS:

- produces standards requirements and
evidence
- early access to technical authority in semweb
and life sciences

“find me genes involved in signal transduction that are related to pyramidal neurons”

**Gene
Ontology**

Reactome

PDSPki

Antibodies

**Entrez
Gene**

BAMS

NeuronDB

Literature

SWAN

**Allen Brain
Atlas**

BrainPharm

Homologene

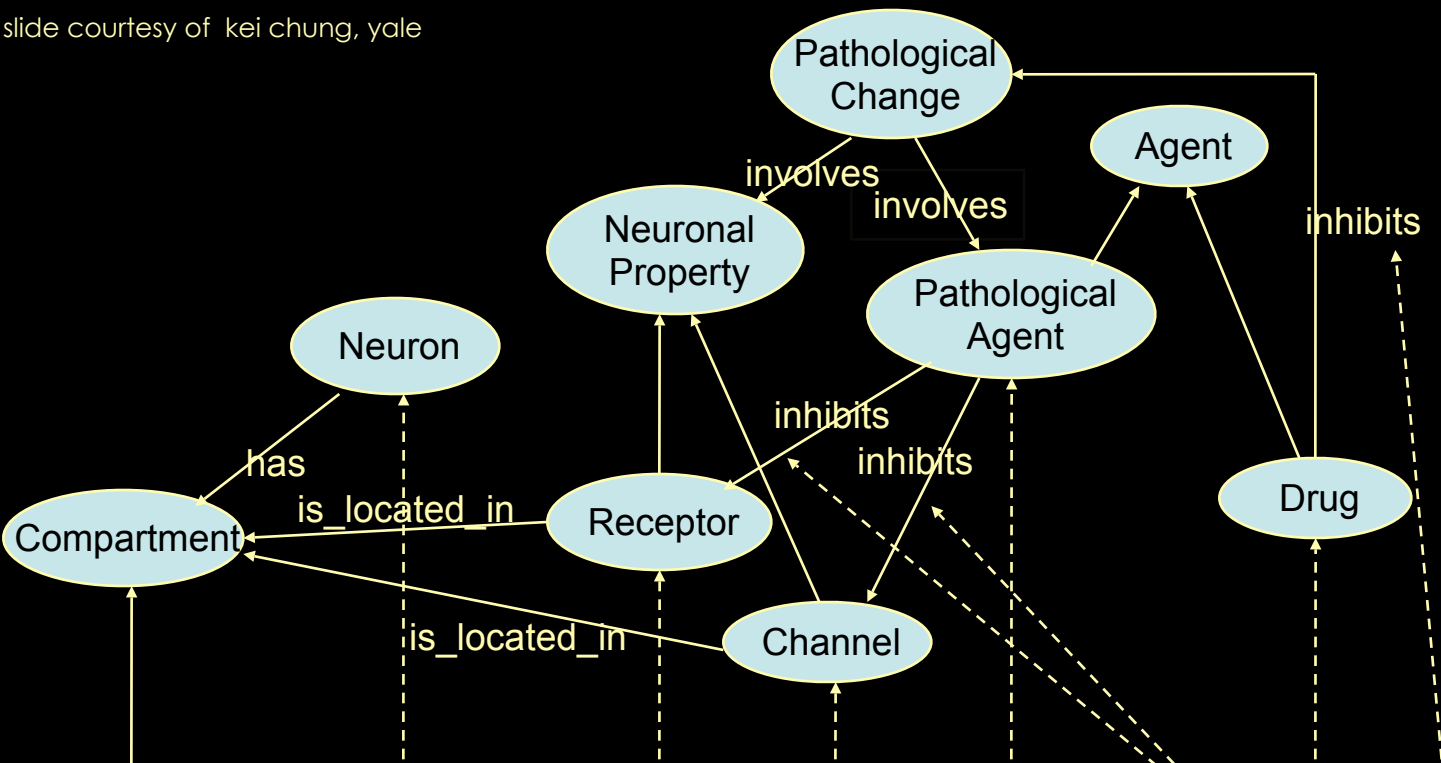
AlzGene

Mammalian
Phenotype

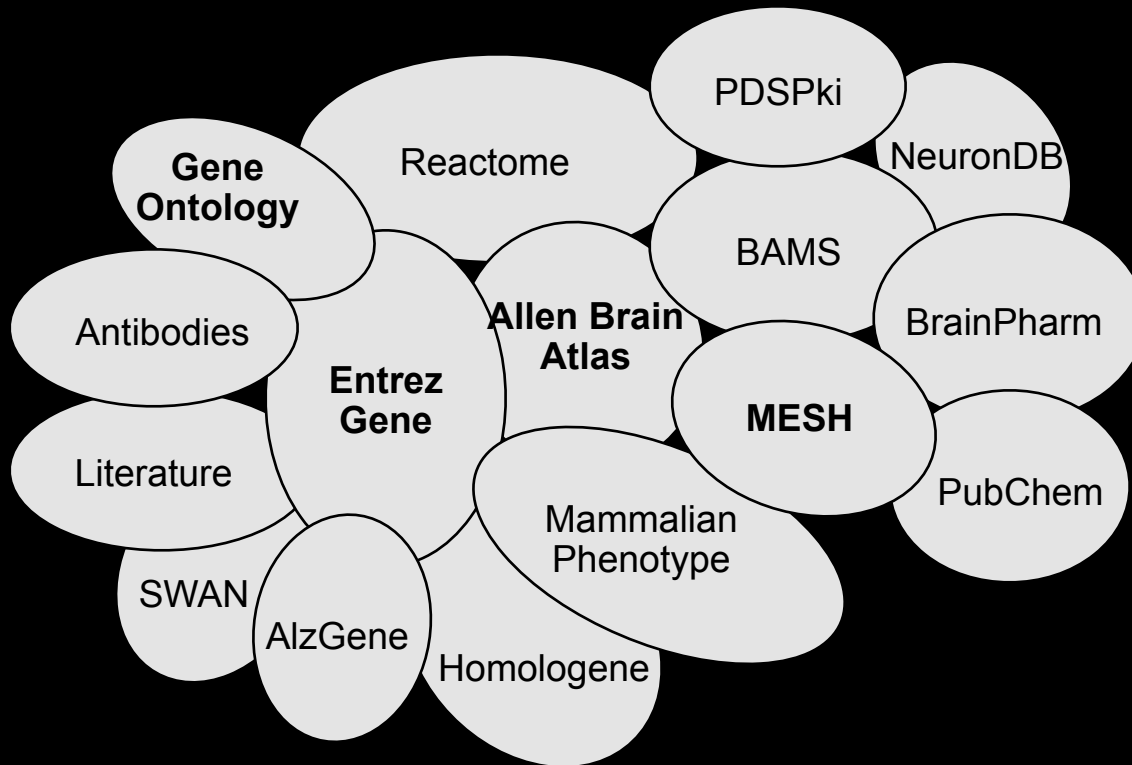
MESH

PubChem

slide courtesy of kei chung, yale



Compartment	Cell: NeuronDB	Receptor	Channel	Pathological Agent (PA)	PA Action	Drug	Drug Action	Stage	Note	Detail
Soma	CA1 pyramidal neuron		I A	beta Amyloid	Inhibits			Early	View	66240
	Olfactory bulb mitral cell	GabaA						Early	View	66750
Dendrite	CA1 pyramidal neuron		I A	beta Amyloid	Inhibits			Early	View	66240
	Olfactory bulb mitral cell	GabaA						Early	View	66750
Unspecified	Oocyte		I L high threshold	beta Amyloid	Inhibits			Early	View	66252
								Early	View	66753
	CA1 pyramidal neuron			beta Amyloid	Inhibits			Early	View	66758
	CA1 pyramidal neuron	NMDA	I Calcium	beta Amyloid	Inhibits		Inhibits		View	66250



running code: semantic web query / four open government data sources

```
prefix go: <http://purl.org/obo/owl/GO#>
prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#>
prefix owl: <http://www.w3.org/2002/07/owl#>
prefix mesh: <http://purl.org/commons/record/mesh/>
prefix sc: <http://purl.org/science/owl/sciencecommons/>
prefix ro: <http://www.obofoundry.org/ro/ro.owl#>

select ?genename ?processname
where
{
  graph <http://purl.org/commons/hcls/pubmesh>
  { ?paper ?p mesh:D017966 .
    ?article sc:identified_by_pmid ?paper.
    ?gene sc:describes_gene_or_gene_product_mentioned_by ?article.
  }
  graph <http://purl.org/commons/hcls/goa>
  { ?protein rdfs:subClassOf ?res.
    ?res owl:onProperty ro:has_function.
    ?res owl:someValuesFrom ?res2.
    ?res2 owl:onProperty ro:realized_as.
    ?res2 owl:someValuesFrom ?process.
  }
  graph <http://purl.org/commons/hcls/20070416/classrelations>
  {{{?process <http://purl.org/obo/owl/obo#part_of> go:GO_0007166}
    union
    {?process rdfs:subClassOf go:GO_0007166 }}
    ?protein rdfs:subClassOf ?parent.
    ?parent owl:equivalentClass ?res3.
    ?res3 owl:hasValue ?gene.
  }
  graph <http://purl.org/commons/hcls/gene>
  { ?gene rdfs:label ?genename }
  graph <http://purl.org/commons/hcls/20070416>
  { ?process rdfs:label ?processname }
}
```

Mesh: Pyramidal Neurons



Pubmed: Journal Articles



Entrez Gene: Genes



GO: Signal Transduction

DRD1, 1812
ADRB2, 154
ADRB2, 154
DRD1P, 50632
DRD1, 1812
DRD2, 1813
GRM7, 2917
GNG3, 2785
GNG12, 55970
DRD2, 1813
ADRB2, 154
CALM3, 808
HTR2A, 3356
DRD1, 1812
SSTR5, 6755
MTNR1A, 4543
CNR2, 1269
HTR6, 3362
GRIK2, 2898
GRIN1, 2902
GRIN2A, 2903
GRIN2B, 2904
ADAM10, 102
GRM7, 2917
LRP1, 4035
ADAM10, 102
ASCL1, 429
HTR2A, 3356
ADRB2, 154
PTPRG, 5793
EPHA4, 2043
NRTN, 4902
CTNND1, 1500

adenylate cyclase activation
adenylate cyclase activation
arrestin mediated desensitization of G-protein coupled receptor protein signaling pathway
dopamine receptor signaling pathway
dopamine receptor, adenylate cyclase activating pathway
dopamine receptor, adenylate cyclase inhibiting pathway
G-protein coupled receptor protein signaling pathway
G-protein coupled receptor protein signaling pathway
G-protein coupled receptor protein signaling pathway
G-protein coupled receptor protein signaling pathway
G-protein coupled receptor protein signaling pathway
G-protein coupled receptor protein signaling pathway
G-protein coupled receptor protein signaling pathway
G-protein signaling, coupled to cyclic nucleotide second messenger
G-protein signaling, coupled to cyclic nucleotide second messenger
G-protein signaling, coupled to cyclic nucleotide second messenger
G-protein signaling, coupled to cyclic nucleotide second messenger
G-protein signaling, coupled to cyclic nucleotide second messenger
glutamate signaling pathway
glutamate signaling pathway
glutamate signaling pathway
glutamate signaling pathway
integrin-mediated signaling pathway
negative regulation of adenylate cyclase activity
negative regulation of Wnt receptor signaling pathway
Notch receptor processing
Notch signaling pathway
serotonin receptor signaling pathway
transmembrane receptor protein tyrosine kinase activation (dimerization)
transmembrane receptor protein tyrosine kinase signaling pathway
transmembrane receptor protein tyrosine kinase signaling pathway
transmembrane receptor protein tyrosine kinase signaling pathway
Wnt receptor signaling pathway

Many of the genes are
indeed related to
Alzheimer's Disease
through gamma
secretase (presenilin)
activity

[Neurocommons Virtuoso RDF Store](#) ([about Banff](#), [query notes](#), [biology script](#), [virtuoso docs](#), [sparql spec](#), [sparul proposal](#))

Default Graph:

SPARQL Query

```
?res2 owl:someValuesFrom ?process.  
graph <http://purl.org/commons/hcls/20070416/classrelations>  
  {{?process <http://purl.org/obo/owl/obo#part_of> go:GO_0007166}  
  union  
  {?process rdfs:subClassOf go:GO_0007166 }}  
  ?protein rdfs:subClassOf ?parent.  
  ?parent owl:equivalentClass ?res3.  
  ?res3 owl:hasValue ?gene.  
  }  
graph <http://purl.org/commons/hcls/gene>  
  { ?gene rdfs:label ?genename }  
graph <http://purl.org/commons/hcls/20070416>  
  { ?process rdfs:label ?processname }  
}
```

Output format

Max Rows



Retrieve remote RDF data for all missing source graphs

```
POST /sparql/? HTTP 1.1  
Host: ashby.csail.mit.edu:8890  
Accept: text/html  
Content-Type: application/x-www-form-urlencoded  
Content-Length: 2074
```

```
query=prefix%20go%3A%20%3Chttp%3A%2F%2Fpurl.org%2Fobo%2Fowl%2FGO%23%3E%0Aprefix%20rdfs%3A%20%3Chttp%3A%2F%2Fw
```


The image shows a screenshot of a web browser window. The address bar contains the file path: `file:///Users/johnwilbanks/Desktop/saved%20queries.html`. Below the address bar, there are several tabs open, including "HCLS & Neurocommon...", "QuickGO: Search results", "Editing PubMed Plus in...", "Google Reader (1)", and "Neuroco...". The main content area of the browser displays the text "Saved Queries: Neurocommons" followed by a blue, underlined link: [Show me all signal transduction genes on the cell surface in pyramidal neurons](#).

Saved Queries: Neurocommons

[Show me all signal transduction genes on the cell surface in pyramidal neurons](#)

[QuickGO home](#)[GO Annotation home](#)[Documentation](#)Search: ▾ ▾

protein, 5 go term(s) in total were found: [process (1) function (4) component (0)]

Name	GO ID
ribosomal protein import into nucleus	GO:0006610
ribosomal protein S6 kinase activity	GO:0004711
structural constituent of ribosome	GO:0003735
ribosomal-protein-alanine N-acetyltransferase activity	GO:0008999
unfolded protein binding	GO:0051082

GO term, or to display multiple terms in context select checkboxes and press a view button below.

 context

National Library of Medicine - Medical Subject Headings

2007 MeSH

MeSH Descriptor Data

[Return to Entry Page](#)

Standard View. [Go to Concept View](#); [Go to Expanded Concept View](#)

MeSH Heading	Neoplasms
Tree Number	C04
Annotation	avoid: too general; prefer specifics; policy: Manual section 24; / chem ind permitted but consider also CARCINOGENESIS ; / class : consider also NEOPLASM STAGING (see note there) but "grading" = / pathol ; / etiol : consider also ONCOGENIC VIRUSES ; / vet : Manual 24.6+ or TN 136; TN 135: MeSH terms for neoplasms classed by tissue; / drug ther : consider also ANTINEOPLASTIC AGENTS & its specifics; / genet : consider also GENES, TUMOR SUPPRESSOR / immunol : consider also TUMOR ESCAPE ; consider also ANTIGENS, NEOPLASM & ANTIBODIES, NEOPLASM ; / microbiol : consider also ONCOGENIC VIRUSES ; / nurs = the patient, ONCOLOGIC NURSING = the oncologic specialty; / prev : consider also ANTICARCINOGENIC AGENTS ; / radiother = the patient, RADIATION ONCOLOGY = the specialty; consider also BRACHYTHERAPY ; / secord : consider also NEOPLASM METASTASIS but do not confuse with NEOPLASMS, SECOND PRIMARY ; familial: consider NEOPLASTIC SYNDROMES, HEREDITARY ; metastatic cancer of unknown origin: index under NEOPLASMS, METASTASIS ; Tumor Key: TN Suppl
Scope Note	New abnormal growth of tissue. Malignant neoplasms show a greater degree of anaplasia and have the properties of invasion and metastasis, compared to benign neoplasms.
Entry Term	Benign Neoplasms
Entry Term	Cancer
Entry Term	Neoplasms, Benign
Entry Term	Tumors
See Also	Antibodies, Neoplasm
See Also	Anticarcinogenic Agents

the “view source” effect

```
prefix go: <http://purl.org/obo/owl/GO#>
prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#>
prefix owl: <http://www.w3.org/2002/07/owl#>
prefix mesh: <http://purl.org/commons/record/mesh/>
prefix sc: <http://purl.org/science/owl/sciencecommons/>
prefix ro: <http://www.obofoundry.org/ro/ro.owl#>
```

```
select ?genename ?processname
where
{ graph <http://purl.org/commons/hcls/pubmesh>
```

```
  { ?paper ?p mesh:D009369 .
    ?article sc:identified_by_pmid ?paper.
    ?gene sc:describes_gene_or_gene_product_mentioned_by ?article.
  }
```

```
graph <http://purl.org/commons/hcls/goa>
{ ?protein rdfs:subClassOf ?res.
  ?res owl:onProperty ro:has_function.
  ?res owl:someValuesFrom ?res2.
  ?res2 owl:onProperty ro:realized_as.
  ?res2 owl:someValuesFrom ?process.
}
```

```
graph <http://purl.org/commons/hcls/20070416/classrelations>
```

```
  {{?process <http://purl.org/obo/owl/obo#part_of> go:GO_0006610}
  union
```

```
  {?process rdfs:subClassOf go:GO_0006610 }
  ?protein rdfs:subClassOf ?parent.
  ?parent owl:equivalentClass ?res3.
  ?res3 owl:hasValue ?gene.
}
```

```
graph <http://purl.org/commons/hcls/gene>
```

```
  { ?gene rdfs:label ?genename }
```

```
graph <http://purl.org/commons/hcls/20070416>
```

```
  { ?process rdfs:label ?processname }
```

```
}
```

Mesh: Cancer

GO: Ribosomal Protein

The image shows a screenshot of a web browser window. The address bar contains the file path: `file:///Users/johnwilbanks/Desktop/saved%20queries.html`. The browser's tab bar shows several open tabs, including "HCLS & Neurocommon...", "QuickGO: Search results", "Editing PubMed Plus in...", "Google Reader (1)", and "Neuroco...". The main content area of the browser displays the text "Saved Queries: Neurocommons" followed by two blue hyperlinks:

[Show me all signal transduction genes on the cell surface in pyramidal neurons](#)

[Show me all ribosomal protein-coding genes in cancer development](#)

Allen Brain Atlas Gene Expression Results

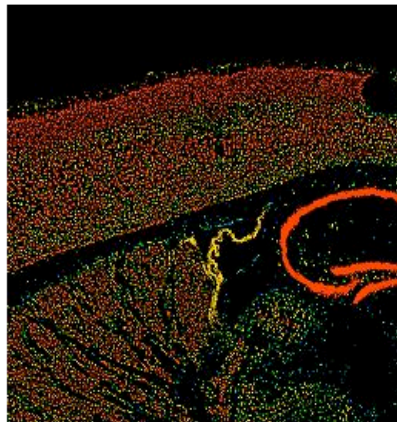
3 [entrez-gene-record](#) filtered from 26 originally ([reset](#))

Copy All

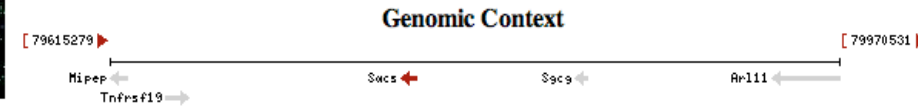
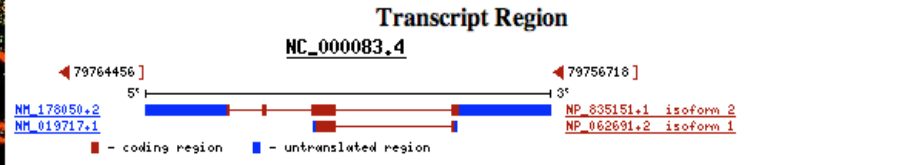
sorted by: [hasName](#); then by... grouped as sorted • show duplicates

- hasName 3 ✓
- derecive
- 1b
- homolog
- (C.
- elegans)
- 1 ✓ apoptotic
- peptidas
- activatin
- factor 1

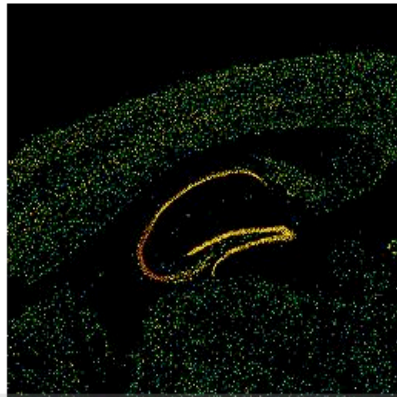
1.



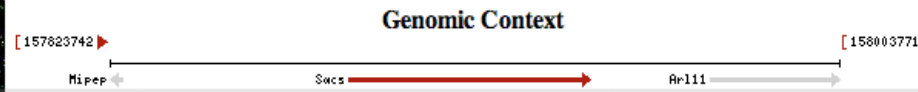
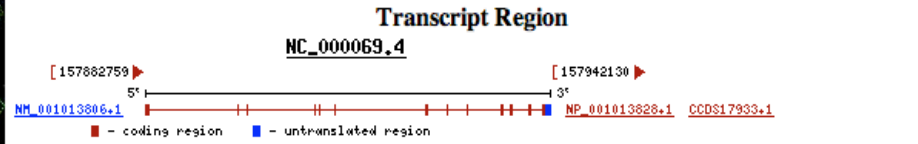
56298
[Entrez-Gene 56298](#)
ADP-ribosylation factor-like 6 interacting protein 2



2.



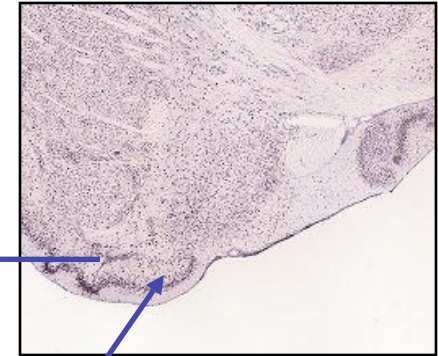
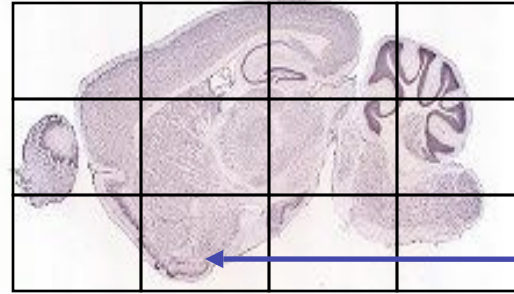
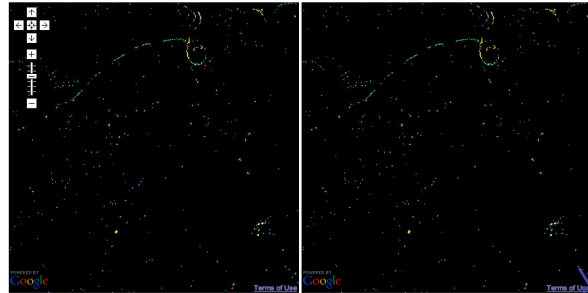
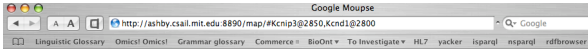
433667
[Entrez-Gene 433667](#)
ankyrin repeat domain 13c



<http://hcls1.csail.mit.edu/map/#Kcnp3@2850,Kcnd1@2800>

Javascript

Allen Brain Institute Servers



http://www.brainmap.org/...0205032816_B.aff/TileGroup3/1-0-1.jpg

SPARQL
AJAX

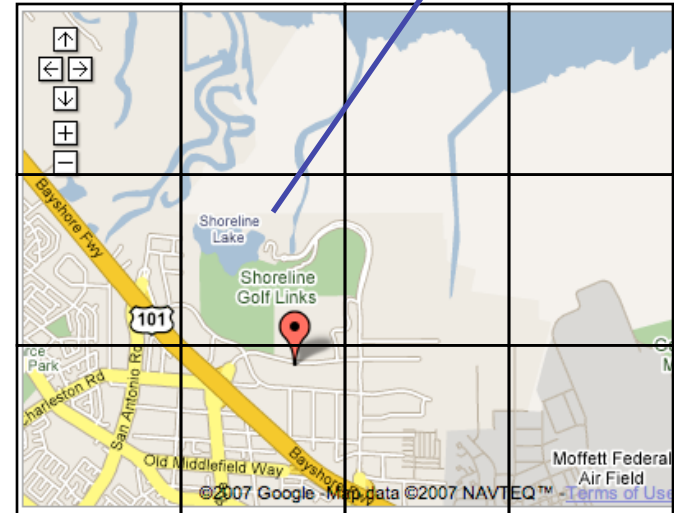
Query

URL



Neurocommons Servers

Google
Maps
API



Windows desktop environment showing a GeneExpression query interface and a NeuroComms Query visualization window.

GeneExpression

Query Data Source: GeneNetwork

Strain: C57BL

Gene Symbol: Drd2

Gene Name: _____

Query Results

Source	User	Probe	Gene
GeneNetwork	rva	1418950	Drd2
GeneNetwork	rva	P111234	Drd2

Probe 1418950 Filter Results

Color	Name	Level	Database
Red	Caudoputamen	11.013	http://www...
Blue	EYE	8.863	http://www...
Green	WHOLE BRAIN	9.535520279	http://www...
Yellow	WHOLE BRAIN	9.051	http://www...
Blue	Hippocampus	7.406	http://www...
Blue	KIDNEY	7.3	http://www...

8 9

Auto Adjust

ABA/NeuroComms Query: Drd2

Coronal Sagittal

position:0

position:200

position:400

position:600

position:800

position:1000

100%

Links Help About

Links go here

POWERED BY Google

Viabile © MBAT - Terms of Use

No chart data available. Expression © MBAT - Terms of Use

POWERED BY Google

Atlas © MBAT - Terms of Use

No chart data available. Stained © MBAT - Terms of Use

Loading started. JDIC API Demo - Browser

300,000,000+ RDF “triples”
pre-formatted queries
analytic software under BSD
\$3,000 of off-the-shelf hardware
open source triple store

available for download and mirroring

Semantic Web HCLS

“The Semantic Web Health Care and Life Sciences Interest Group is designed to improve collaboration, research and development, and innovation adoption in the health care and life science industries. Aiding decision-making in clinical research, Semantic Web technologies will bridge many forms of biological and medical information across institutions.”

Principal activities have centered around

- Building the community
- Exploring and documenting use cases
- Converting resources to RDF
- Learning to work with semantic web query/inference technology such as SPARQL, OWL, and rule engines.

Organization

- Chairs: Eric Neumann, Tonya Hongsermeier
- Group divided in to task forces (coordinator)

BioRDF. Established initially to convert biomedical data to RDF (Susie Stephens) [home page](#)

BIONT. Established initially to be resource for ontology needs for other groups (Vipul Kashyap) [home page](#)

DSE (Drug Safety and Efficacy). Established initially to work on SW technology to support monitoring drug safety, pharmacovigilance (Eric Neumann) [home page](#)

ACPP (Adaptable Clinical Protocols and Pathways) Established initially to work on method of representing and computing applicability of protocols to dynamically changing patient status (Helen Chen) [home page](#)

Clinical Observations Interoperability. Established recently with two goals 1) Establish new collaboration with health care industry players 2) Work on issues at the intersection of electronic medical records and health care organization needs. (Vipul Kashyap) [home page](#)

Membership

- 64 participants from 38 organizations
- 3 Invited Experts:
 - Kei Cheung, Yale University
 - Michel Dumontier, Carleton University/Canada
 - Matthias Samwald, Medical University of Vienna/Austria
- Many more non-member participants
- Breakdown at
<http://www.w3.org/2007/09/19-HCLS-participants>

Meetings

- Formal F2F, January 2006, Cambridge
- Formal F2F, October 2006, Amsterdam
- Workshop, ISWC November 2006, Banff
- Informal F2F (Demo) 3 x March/April, 2007, Cambridge
- Workshop, WWW 2007, May 2007, Banff
- Informal F2F (URI), July 2007, Cambridge
- Formal F2F, November 2007, Cambridge

Publications

- In Print

Advancing translational research with the Semantic Web

Alan Ruttenberg, Tim Clark, William Bug, Matthias Samwald, Olivier Bodenreider, Helen Chen, Donald Doherty, Kerstin Forsberg, Yong Gao, Vipul Kashyap, June Kinoshita, Joanne Luciano, M Scott Marshall, Chimezie Ogbuji, Jonathan Rees, Susie Stephens, Gwendolyn T Wong, Elizabeth Wu, Davide Zaccagnini, Tonya Hongsermeier, Eric Neumann, Ivan Herman and Kei-Hoi Cheung,
BMC Bioinformatics 2007, 8(Suppl 3):S2

An Ontology-based approach for Data Integration - An Application in Biomedical Research

Vipul Kashyap, Kei-Hoi Cheung, Don Doherty, Matthias Samwald, M. Scott Marshall, Joanne Luciano, Susie Stephens, Ivan Herman and Ray Hookway, Book Chapter in Cardoso, J., Hepp, M., Lytras, M. (Eds.) "Real-world Applications of Semantic Web Technology and Ontologies", Springer 2007.

- Notes in progress

HCLS Community URI Recommendations

Senselab RDF Conversion

Presentations

- WWW2007 Demo
- ISMB 2007 Demo
- ISMB BioOntology SIG Poster 2007
- Society for Neuroscience Poster Nov 2007
- Selection of presentation venues of members showing HCLS work
 - Bridging Pharma and IT
 - Drug Discovery Technology of Innovative Therapeutics
 - 1st European Semantic Web Conference
 - Bio-IT World
 - Norwegian Semantic Web Day
 - InfoTech Pharma
 - Modern Drug Discovery and Development Summit
 - Massachusetts Biotechnology Panel
 - eScience Institute; RDF, Ontologies and Meta-Data Workshop
 - Virginia Biotechnology Summit
 - Systems Biology
 - Semantic Web Gathering
 - Allen Institute for Brain Sciences
 - Informatics and Interactomes in Huntington's Disease
 - Ontology for Biomedical Informatics Workshop
 - Clinical Trial Ontology Workshop
 - Jackson Laboratories
 - Pubmed Plus
 - NIH Blueprint NIF Workshop

thank you

<http://w3.org>

<http://sw.neurocommons.org/>

<http://esw.w3.org/topic/HCLS/Banff2007Demo>

<http://hcls1.csail.mit.edu:8890/nsparql/>

<http://hcls1.csail.mit.edu:8890/map/#Kcnip3@2850,Kcnd1@2800>

<http://sciencecommons.org>