

NEUROLEX: A SEMANTIC WIKI FOR NEUROSCIENCE

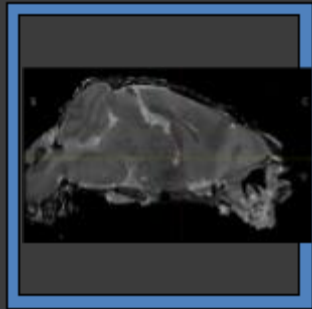
Stephen D. Larson

Implementing 'Big Open Data' in government through
Open Collaboration - case examples and possibilities

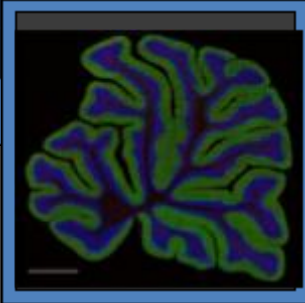
Joint Data.Gov – Ontolog “Big Open Data” Session

05/17/12

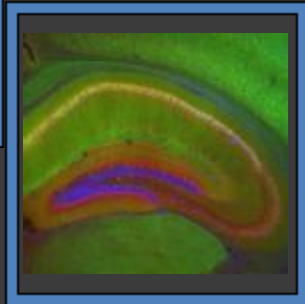
A multi-scale data problem



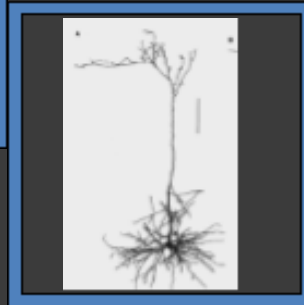
Whole brain data
(20 um
microscopic MRI)



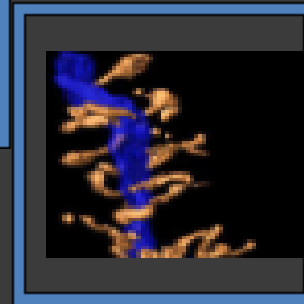
Mosaic LM
images (1 GB+)



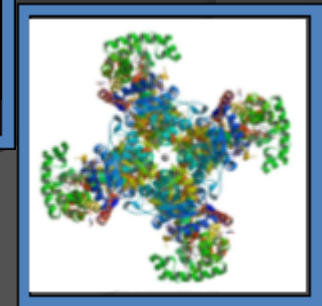
Conventional LM
images



Individual cell
morphologies



EM volumes &
reconstructions



Solved molecular
structures

Scale

Framework of parts

PERIODIC TABLE OF THE ELEMENTS

<http://www.ktf-split.hr/periodni/en/>

| PERIOD | GROUP I IA | GROUP IIA | GROUP IIIA | GROUP IVA | GROUP VA | GROUP VIA | GROUP VIIA | GROUP VIIIA | | | | | | | | | | | |
|--------|------------------------------------|-------------------------------------|-------------------------------------|---|------------------------------------|--------------------------------------|-------------------------------------|-------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|-------------------------------------|------------------------------------|--|------------------------------------|-------------------------------------|-----------------------------------|----------------------------------|--|
| 1 | 1 1.0079 H HYDROGEN | | | | | | | 2 4.0026 He HELIUM | | | | | | | | | | | |
| 2 | 3 6.941 Li LITHIUM | 4 9.0122 Be BERYLLIUM | | | | | | | | | | | | | | | | | |
| 3 | 11 22.990 Na SODIUM | 12 24.305 Mg MAGNESIUM | | | | | | | | | | | | | | | | | |
| 4 | 19 39.098 K POTASSIUM | 20 40.078 Ca CALCIUM | 21 44.956 Sc SCANDIUM | 22 47.867 Ti TITANIUM | 23 50.942 V VANADIUM | 24 51.996 Cr CHROMIUM | 25 54.938 Mn MANGANESE | 26 55.845 Fe IRON | 27 58.933 Co COBALT | 28 58.693 Ni NICKEL | 29 63.546 Cu COPPER | 30 65.39 Zn ZINC | 31 69.723 Ga GALLIUM | 32 72.64 Ge GERMANIUM | 33 74.922 As ARSENIC | 34 78.96 Se SELENIUM | 35 79.904 Br BROMINE | 36 83.80 Kr KRYPTON | |
| 5 | 37 85.468 Rb RUBIDIUM | 38 87.62 Sr STRONTIUM | 39 88.906 Y YTTRIUM | 40 91.224 Zr ZIRCONIUM | 41 92.906 Nb NIOBIUM | 42 95.94 Mo MOLYBDENUM | 43 (98) Tc TECHNETIUM | 44 101.07 Ru RUTHENIUM | 45 102.91 Rh RHODIUM | 46 106.42 Pd PALLADIUM | 47 107.87 Ag SILVER | 48 112.41 Cd CADMIUM | 49 114.82 In INDIUM | 50 118.71 Sn TIN | 51 121.76 Sb ANTIMONY | 52 127.60 Te TELLURIUM | 53 126.90 I IODINE | 54 131.29 Xe XENON | |
| 6 | 55 132.91 Cs CAESIUM | 56 137.33 Ba BARIUM | 57-71 La-Lu Lanthanide | 72 178.49 Hf HAFNIUM | 73 180.95 Ta TANTALUM | 74 183.84 W TUNGSTEN | 75 186.21 Re RHENIUM | 76 190.23 Os OSMIUM | 77 192.22 Ir IRIDIUM | 78 195.08 Pt PLATINUM | 79 196.97 Au GOLD | 80 200.59 Hg MERCURY | 81 204.38 Tl THALLIUM | 82 207.2 Pb LEAD | 83 208.98 Bi BISMUTH | 84 (209) Po POLONIUM | 85 (210) At ASTATINE | 86 (222) Rn RADON | |
| 7 | 87 (223) Fr FRANCIUM | 88 (226) Ra RADIUM | 89-103 Ac-Lr Actinide | 104 (261) Rf RUTHERFORDIUM | 105 (262) Db DUBNIUM | 106 (266) Sg SEABORGIUM | 107 (264) Bh BOHRIUM | 108 (277) Hs HASSIUM | 109 (268) Mt MEITNERIUM | 110 (281) Uun UNUNUNIUM | 111 (272) Uuu UNUNUNIUM | 112 (285) Uub UNUNBIUM | | 114 (289) Uuq UNUNQUADIUM | | | | | |

RELATIVE ATOMIC MASS (1)

GROUP IUPAC

GROUP CAS

ATOMIC NUMBER

SYMBOL

ELEMENT NAME

Metal
Semimetal
Nonmetal

1 Alkali metal
16 Chalcogens element

2 Alkaline earth metal
17 Halogens element

Transition metals
18 Noble gas

Lanthanide
Actinide

STANDARD STATE (25 °C; 101 kPa)

Ne - gas Fe - solid
Ga - liquid Tc - synthetic

(1) Pure Appl. Chem., 73, No. 4, 667-683 (2001)

Relative atomic mass is shown with five significant figures. For elements with no stable nuclides, the value enclosed in brackets indicates the mass number of the longest-lived isotope of the element.

However three such elements (Th, Pa, and U) do have a characteristic terrestrial isotopic composition, and for these an atomic weight is tabulated.

Editor: Aditya Vardhan (adivard@netlinux.com)

LANTHANIDE

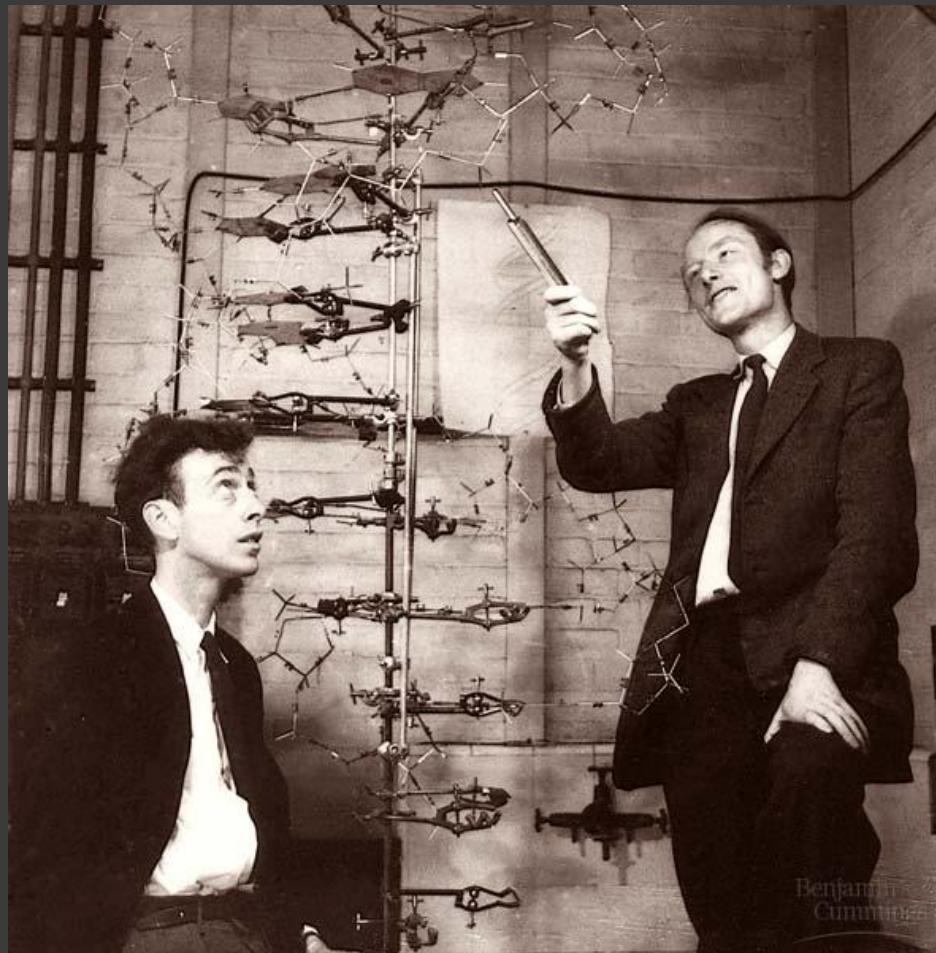
| | | | | | | | | | | | | | | |
|-------------------------------------|----------------------------------|--|-------------------------------------|-------------------------------------|------------------------------------|------------------------------------|--------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|----------------------------------|-----------------------------------|------------------------------------|------------------------------------|
| 57 138.91 La LANTHANUM | 58 140.12 Ce CERIUM | 59 140.91 Pr PRASEODYMIUM | 60 144.24 Nd NEODYMIUM | 61 (145) Pm PROMETHIUM | 62 150.36 Sm SAMARIUM | 63 151.96 Eu EUROPIUM | 64 157.25 Gd GADOLINIUM | 65 158.93 Tb TERBIUM | 66 162.50 Dy DYSPROSIUM | 67 164.93 Ho HOLMIUM | 68 167.26 Er ERBIUM | 69 168.93 Tm THULIUM | 70 173.04 Yb YTTERIUM | 71 174.97 Lu LUTETIUM |
|-------------------------------------|----------------------------------|--|-------------------------------------|-------------------------------------|------------------------------------|------------------------------------|--------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|----------------------------------|-----------------------------------|------------------------------------|------------------------------------|

ACTINIDE

| | | | | | | | | | | | | | | |
|-----------------------------------|-----------------------------------|--|----------------------------------|------------------------------------|------------------------------------|------------------------------------|---------------------------------|------------------------------------|--------------------------------------|--------------------------------------|-----------------------------------|---------------------------------------|------------------------------------|--------------------------------------|
| 89 (227) Ac ACTINIUM | 90 232.04 Th THORIUM | 91 231.04 Pa PROTACTINIUM | 92 238.03 U URANIUM | 93 (237) Np NEPTUNIUM | 94 (244) Pu PLUTONIUM | 95 (243) Am AMERICIUM | 96 (247) Cm CURIUM | 97 (247) Bk BERKELIUM | 98 (251) Cf CALIFORNIUM | 99 (252) Es EINSTEINIUM | 100 (257) Fm FERMIUM | 101 (258) Md MENDELEVIUM | 102 (259) No NOBELIUM | 103 (262) Lr LAWRENCIUM |
|-----------------------------------|-----------------------------------|--|----------------------------------|------------------------------------|------------------------------------|------------------------------------|---------------------------------|------------------------------------|--------------------------------------|--------------------------------------|-----------------------------------|---------------------------------------|------------------------------------|--------------------------------------|

Copyright © 1998-2003 EniG. (eni@ktf-split.hr)

Multi-scale synthesis in biology



Watson & Crick, 1953

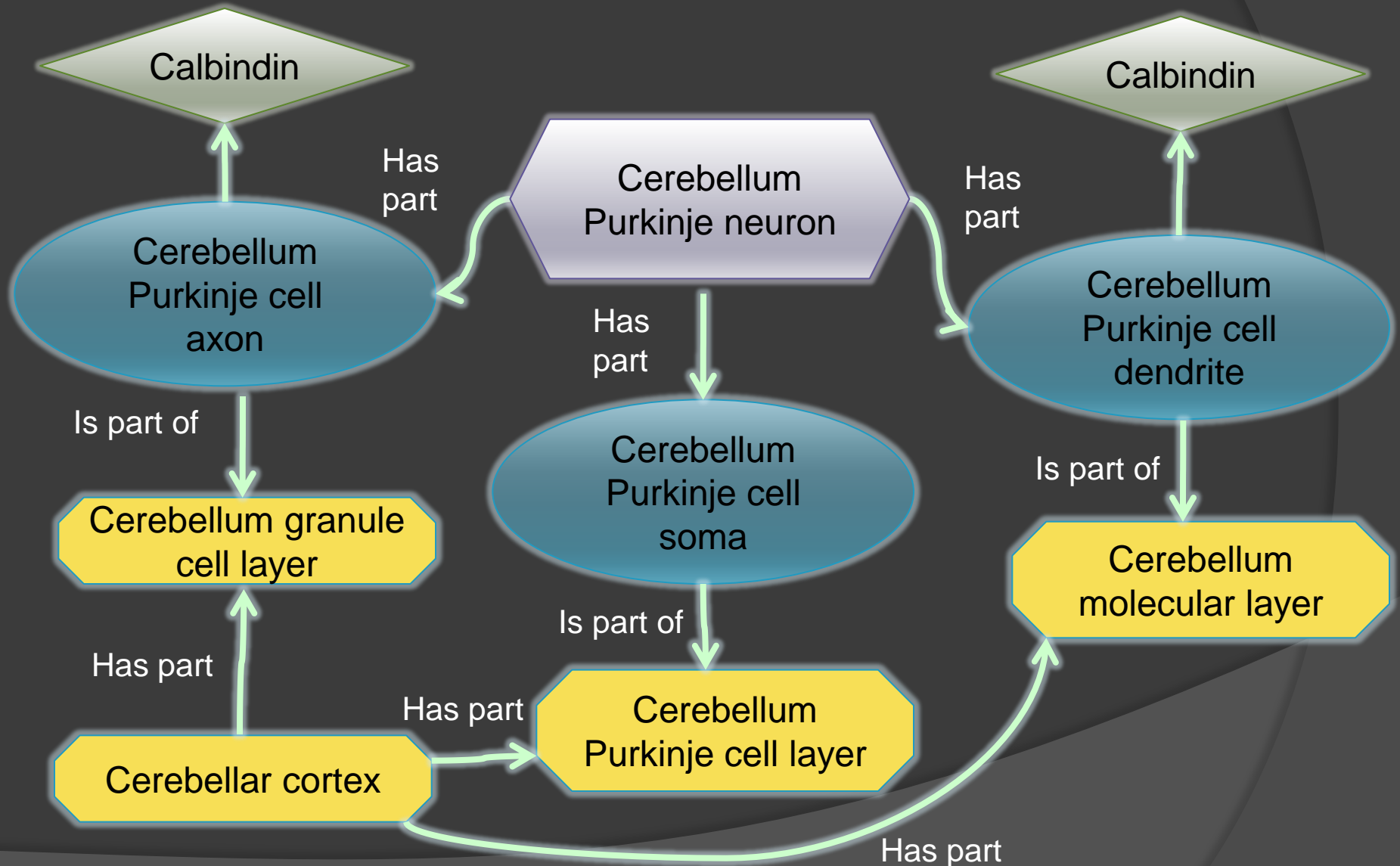
Organizing frameworks for knowledge

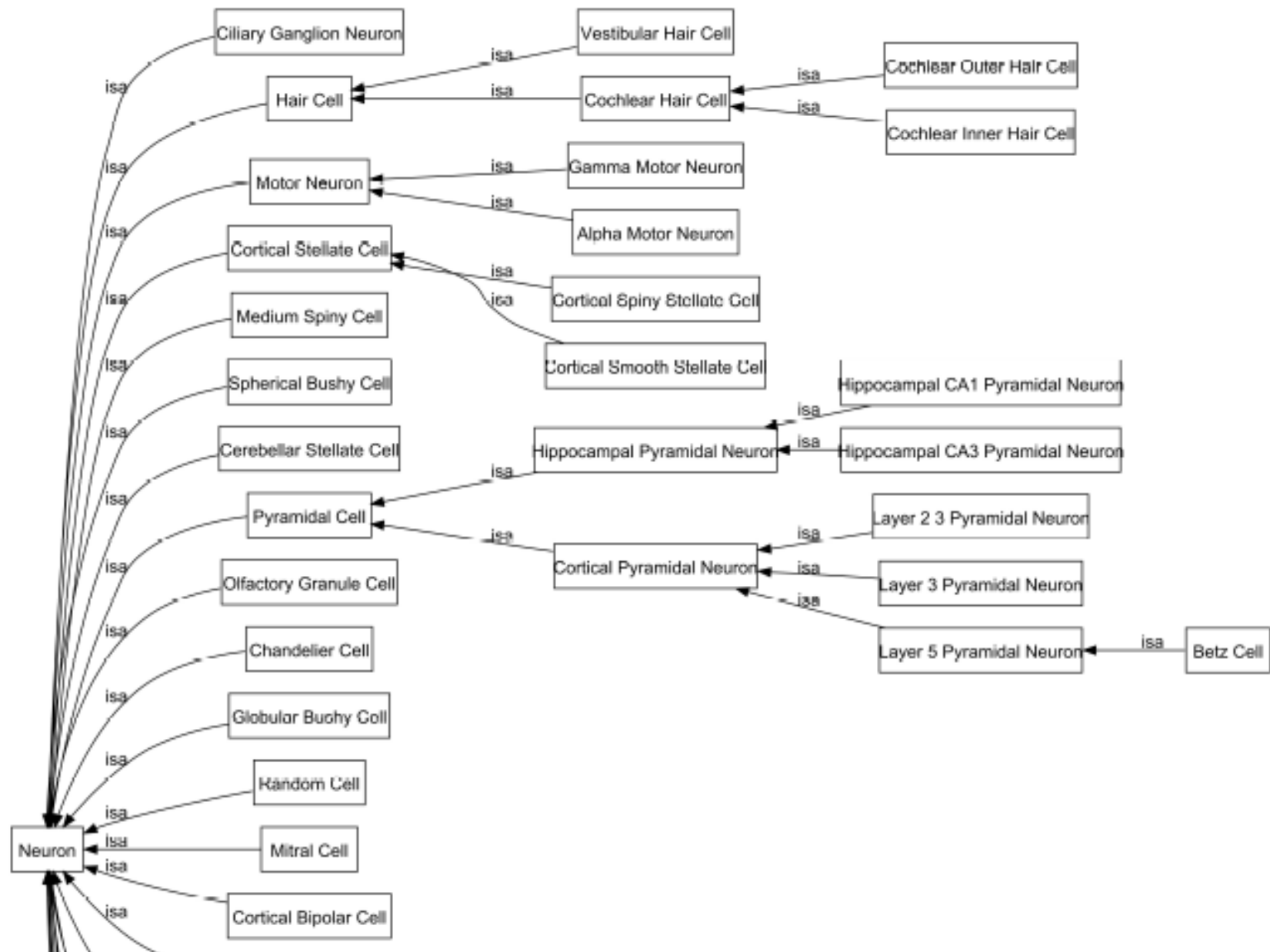


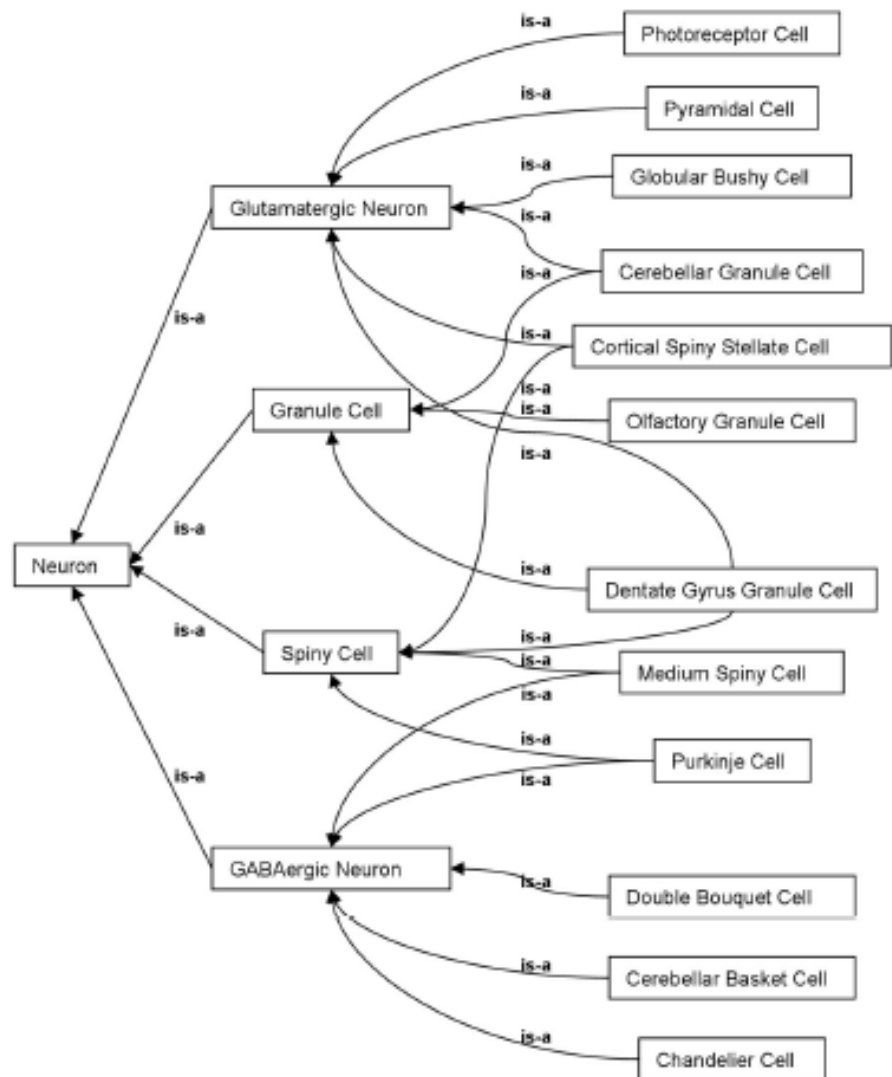
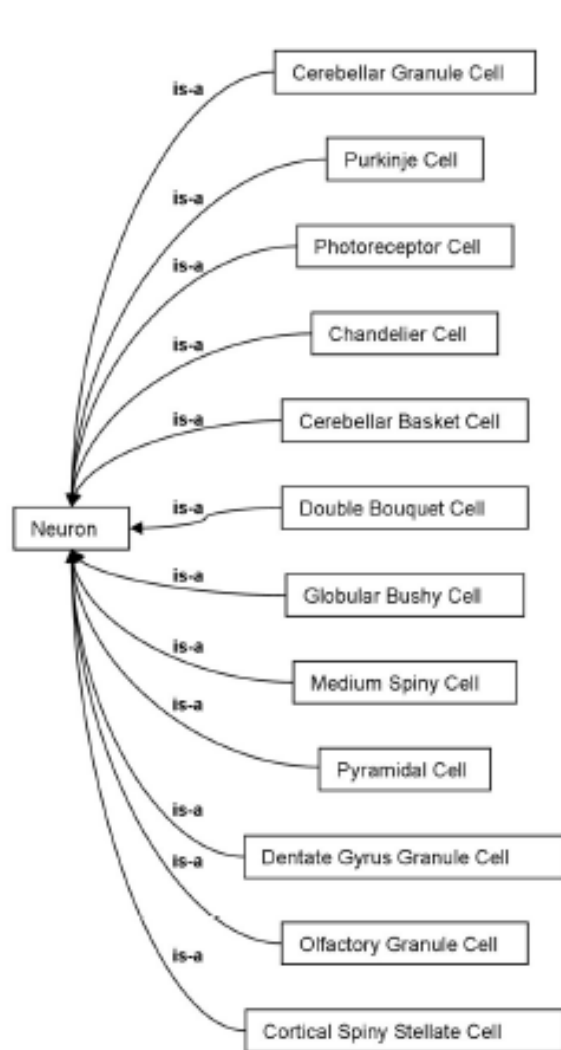
Knowledge in words, terminologies and logical relationships (the “what”)

Past

Shared building blocks







Present

Organizing knowledge online

NIF

NEUROSCIENCE INFORMATION FRAMEWORK



▼ ABOUT

[About NIF](#)

[People](#)

[Publications](#)

[Presentations](#)

[Brochures](#)

[Testimonials](#)

[Release Notes 4.0](#)

[FAQ](#)

► NIF PRODUCTS

► NIF DATA SHARING

► NIF SYSTEM

► SOCIAL MEDIA

NEUROLEX

HELP

Registered with NIF?
Place this icon on your site.



[Find out how.](#)

Search for All Things Neuroscience

Search Data Federation

SEARCH TIPS | WHAT IS THIS? (example searches: cerebellum, "pulvinar nucleus", gene:gmt1)

Search NeuroLex

NIF

Find What You are Looking for.

Faster.

NIF



NIF NAVIGATOR

LITERATURE →

[PubMed \(21210473\)](#)

DATA TYPE →

[Animals \(271504\)](#)

[Antibodies \(935642\)](#)

[Biospecimen \(35833\)](#)

[Brain Activation Foci \(56581\)](#)

[Clinical Trials \(107560\)](#)

[Connectivity \(132460\)](#)

[Dataset \(611\)](#)

[Disease \(27067\)](#)

[Drugs \(656465\)](#)

[Grants \(2686257\)](#)

[Images \(591097\)](#)

[Microarray \(312252579\)](#)

[Models \(705\)](#)

[Multimedia \(14005\)](#)

[Pathways \(497035\)](#)

[People \(377\)](#)

[Plasmids \(21152\)](#)

[Software \(1116\)](#)

NERVOUS SYSTEM LEVELS →

[Brain Regions \(50083\)](#)

[Cellular Level \(29509\)](#)

[Genes \(64754164\)](#)

[Molecular Level \(697691\)](#)

[Multi-Level \(2850991\)](#)

[Nervous System Function \(66226\)](#)

[NIF REGISTRY \(4718\) →](#)

Community News & Events

[NIF Top 25 Accessed Databases for February 2012](#)

February 24th, 2012 02:57 PM

What are the top 25 accessed databases for February 2012? Find out here! [read more >](#)

Twitter

One Mind for Research announces General Peter W. Chiarelli (US Army, ret) as Chief Executive Officer @ <http://t.co/g1uoW6Hu> about 17 hours

Organizing knowledge online



Top 25 accessed databases in NIF

- 1.Grants.gov / Opportunity
- 2.SumsDB / Activation Foci
- 3.CCDB / All Information
- 4.Antibody Registry / Abs
- 5.GENSAT / GENSAT
- 6.Research Crossroads / Grants
- 7.BrainInfo /Brain Region
- 8.Drug Related Gene Database
- 9.NIF Integrated Nervous System/Connectivity
- 10.RePORTER / CurrentNIHGrants
- 11.AllenInstitute / MouseBrainAtlas
- 12.OneMind / BioBanks
- 13.ClinicalTrials / ClinTr
- 14.OMIM / Genes
- 15.DrugBank / Drugs
- 16.ModelDB / Models
- 17.NIF Integrated Animals / Available
- 18.Gemma / Microarray
- 19.NIF Integrated Brain Gene/Expression
- 20.EntrezGene / NCBI Gene
- 21.NIF Integrated Software / Info
- 22.NIF Integrated Video / Videos
- 23.GeneNetwork / Info
- 24.NeuroMorpho / NeuronInfo
- 25.Human Brain Atlas / Michigan

Need for an online parts list

“We need a parts catalog for the brain” – Society for Neuroscience Keynote lecture, 2009

Parts of Cerebellum

Click the + next to “Cerebellum” to see its parts



[-] Cerebellum

- + Cerebellum
 - + Posterior lobe of the cerebellum
 - + Flocculonodular lobe
 - + Anterior lobe of the cerebellum
 - + Deep cerebellar nuclear complex
 - + Cerebellar cortex
 - Climbing fiber
 - + Cerebellar Corticopontine Projection
 - + Cerebellar Pontocerebellar Projection
 - Cerebellar Serotonergic Afferents
 - Prepositus Nuclear Complex

Inferred incoming projections for Cerebellum

Receives projections from Central cervical spinocerebellar tract, Cerebellar Serotonergic Afferents, Climbing fiber, Posterior spinocerebellar tract, and Rostral spinocerebellar tract

Neurons in Cerebellum

Cerebellum Golgi cell, Cerebellum Lugaro cell, Cerebellum Purkinje cell, Cerebellum basket cell, Cerebellum granule cell, Cerebellum stellate cell, Cerebellum unipolar brush cell, and Golgi II cell are neurons that can be found in Cerebellum or its parts.



Larry Swanson,
University of Southern
California

Organizing knowledge online

- Built on Semantic MediaWiki
- Uses Semantic Forms to Structure data
- Originally populated from 8-10 community ontologies
- Allows anyone to edit or create new concepts
- ~18,000 concepts

The screenshot shows the NeuroLex website interface. At the top left is the 'NEURO LEX' logo. Below it is a navigation menu with links: ABOUT, WHAT'S NEW, FAQs, NIFSTD ONTOLOGIES, HOW TO CONTRIBUTE, CURATION POLICIES, SUBSCRIBE, BACK TO NIF HOMEPAGE, and REGISTER A RESOURCE. The main header reads 'THE NEUROSCIENCE LEXICON' followed by 'POWERED BY THE NEUROSCIENCE INFORMATION FRAMEWORK'. A search bar is located on the right. Below the header is a navigation bar with 'Neurons' and 'Brain Regions' dropdown menus. The main content area features a 'Main Page' link, 'Page' and 'Discussion' tabs, and a 'History' button. The central text reads: 'Welcome to NeuroLex, the Neuroscience Lexicon. A dynamic lexicon of 15,993 neuroscience terms supported by The Neuroscience Information Framework'. Below this is a list of links: 'About • What's new • FAQs • NIFSTD ontologies • How to Contribute • Curation policies • Subscribe to Neurolex mailing list'. There is a search box with a 'Find a Term!' button and a 'Show me a Random Term!' button. Below these are three input fields with buttons: 'Create a new cell', 'Create a new brain region', and 'Create a new resource'. On the right side, there are two columns: 'HIERARCHIES' and 'TABLES'. The 'HIERARCHIES' column lists: Behavioral Activity, Behavioral Paradigms, Brain Regions, Cells, Neurons, Diseases, Molecules, Nervous System Function, Subcellular Parts, Resource Types, and Qualities. The 'TABLES' column lists: Behavioral Activity, Brain Regions, Cell Types, Diseases, Molecules, Nervous System Function, Neurons, Neurons by Neurotransmitter, Organisms, Resources and Information Entities, Subcellular Parts, and Qualities.

Warning: You are not logged in. Your IP address will be recorded in this page's edit history.

Cerebellum granule cell

- BASIC**
- DETAIL
- REFERENCES
- ADVANCED



NIF Standard

Definition: Small, numerous neuron in the granule cell layer of the vertebrate cerebellar cortex, characterized by a very small soma and several short dendrites which terminate with claw-shaped endings. In the transmission electron microscope, these cells are characterized by a darkly stained nucleus surrounded by a thin rim of cytoplasm. The axon ascends into the molecular layer where it bifurcates

Definition Pub Med Id:

Synonym(s): Cerebellar granule neuron, Cerebellar granule cell

Synonym Pub Med Id:

Related to:

Related to Pub Med Id:

Has role:

Has role Pub Med Id:

Intrinsic Properties

Neurotransmitter released:

Neurotransmitter receptors:

Molecular constituents:

Molecular constituents Pub Med Id:

This is a minor edit Watch this page

Save page

Glutamatergic neuron

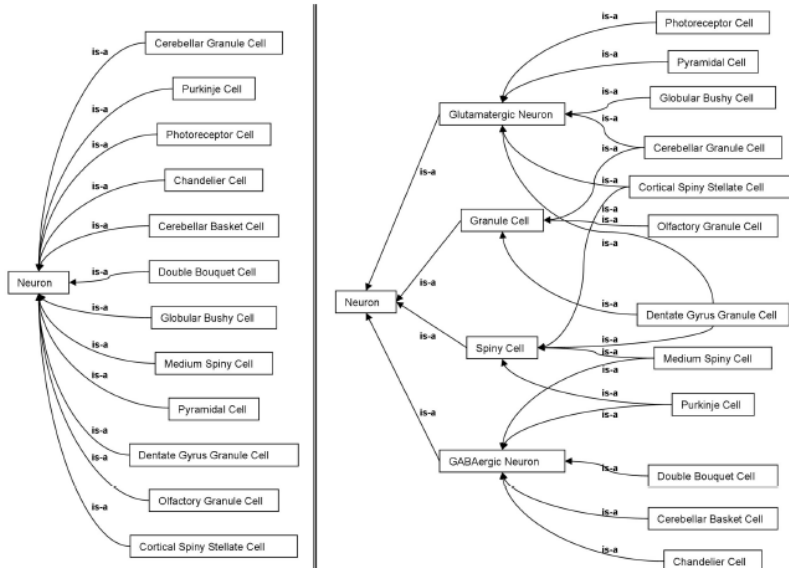
| C | N | R |
|---|--|---|
| <ul style="list-style-type: none"> Cerebellum granule cell Cerebellum unipolar brush cell Cochlea hair cell inner Cochlea hair cell outer | <ul style="list-style-type: none"> Neocortex pyramidal cell Neocortex pyramidal cell layer 5-6 | <ul style="list-style-type: none"> Retina bipolar cell Retina ganglion cell |
| D | O | S |
| <ul style="list-style-type: none"> Dentate gyrus granule cell Dorsal root ganglion cell | <ul style="list-style-type: none"> Olfactory bulb (accessory) mitral cell Olfactory bulb (main) mitral cell Olfactory bulb (main) tufted cell (middle) Olfactory cortex large multipolar cell Olfactory cortex pyramidal cell Olfactory cortex semilunar cell Olfactory epithelium main sensory cell Olfactory epithelium main supporting cell | <ul style="list-style-type: none"> Spinal cord ventral horn interneuron VoG Spinal cord ventral horn interneuron V3 Subiculum pyramidal cell |
| G | T | V |
| <ul style="list-style-type: none"> Gracilis nucleus principal cell | <ul style="list-style-type: none"> Thalamus relay cell | |
| H | | |
| <ul style="list-style-type: none"> Hippocampus CA1 pyramidal cell Hippocampus CA2 pyramidal neuron Hippocampus CA3 pyramidal cell | <ul style="list-style-type: none"> Vestibular ganglion cell Vestibular hair cell | |

Cerebellum neuron

BASIC ADVANCED FACTBOX

| | |
|--------------------|---|
| Name: | Cerebellum neuron |
| Description: | Neuron whose soma lies in any part of the cerebellum or cerebellar cortex |
| Synonym(s): | cerebellar cell, cerebellar neuron |
| Super-category: | Defined neuron class |
| Id: | nlx_cell_0912002 |
| Link to OWL / RDF: | Download this content as OWL/RDF |

| | | |
|-------------------------|------------|--|
| Cerebellum granule cell | nifext_128 | Cerebellar granule neuron Cerebellar granule cell |
|-------------------------|------------|--|



Molecular layer of cerebellar cortex

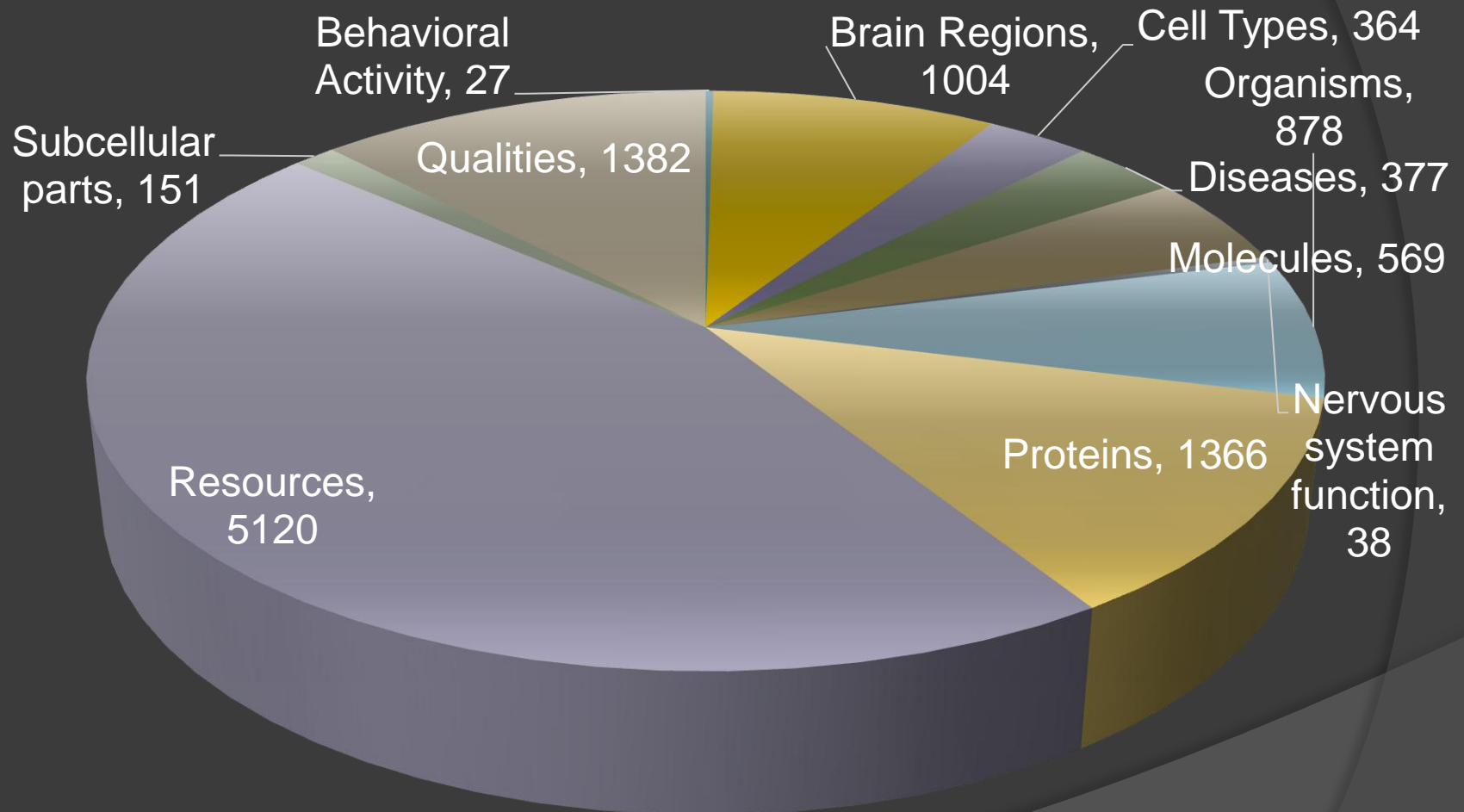
BASIC ADVANCED FACTBOX

| | |
|--------------------|--|
| Name: | Molecular layer of cerebellar cortex |
| Description: | The term molecular layer of cerebellar cortex is a cytoarchitectural term denoting the most superficial layer of the cerebellar cortex. This layer is characterized by basket and stellate cells. The term plexiform layer of cerebellar cortex is a synonym based on the myeloarchitecture, which consists of thin, densely packed axons coursing parallel to the long axis of the cerebellar folia, delicate terminal axons and rich dendritic ramifications (Carpenter-83). |
| Is part of: | Cerebellar cortex |
| Super-category: | Cytoarchitectural part of the cerebellar cortex |
| Id: | birnlex_810 |
| Defining criteria: | cyto-architecture |
| Organism: | Mammal |
| Link to OWL / RDF: | Download this content as OWL/RDF |

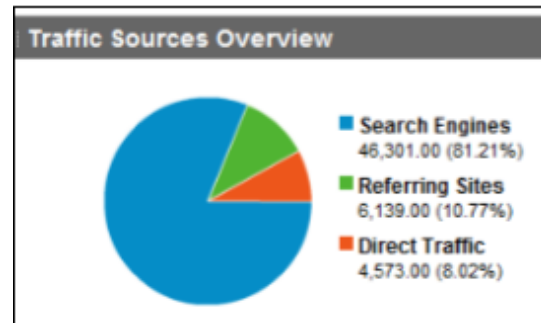
Axons in Molecular layer of cerebellar cortex

Cerebellum granule cell, Cerebellum stellate cell, Climbing fiber are neurons whose axons can be found in Molecular layer of cerebellar cortex or its parts.

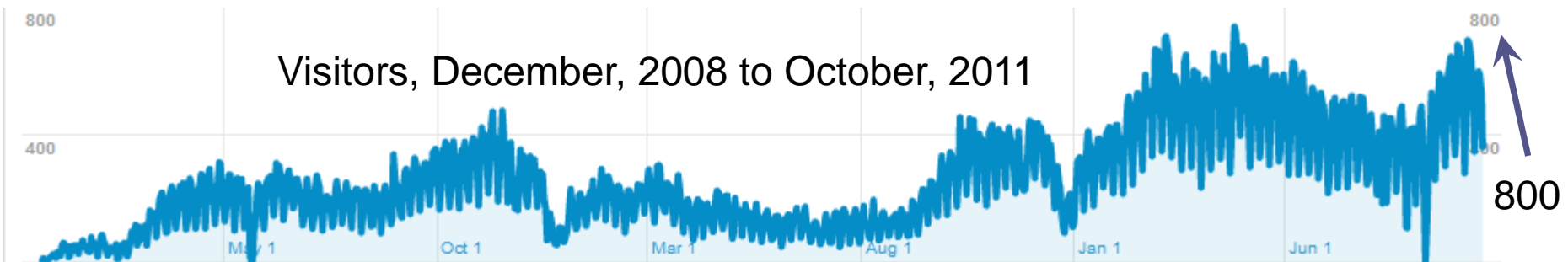
NeuroLex Entities



Organizing knowledge online



Visitors, December, 2008 to October, 2011



Organizing knowledge online

Search queries



Impact: NeuroLex being found spontaneously online

Hippocampus CA1 pyramidal cell × Search


Google cholinergic neurons × Search

About 427,000 results (0.10 seconds) [Advanced search](#)

Cholinergic neuron - NeuroLex ☆ 🔍
Apr 13, 2010 ... Structured knowledge about **Cholinergic neuron**, which is a Defined neuron class. Date: 4-14-2010.
neurolex.org/wiki/Category:Cholinergic_neuron - Cached

Choline and cholinergic neurons. ☆ 🔍
by JK Blusztajn - 1983 - [Cited by 291](#) - [Related articles](#)
When **cholinergic neurons** are activated, acetylcholine release can be enhanced by treatments that increase plasma choline (for example, consumption of ...
www.ncbi.nlm.nih.gov/pubmed/6867732 - [Similar](#)

Images for cholinergic neurons - [Report images](#)



cholinergic neuron - definition of cholinergic neuron by the Free ... ☆ 🔍
Any of the impulse-conducting cells that constitute the brain, spinal column, and nerves, consisting of a nucleated cell body with one or more dendrites and ...
www.thefreedictionary.com/cholinergic+neuron - Cached - [Similar](#)

cholinergic neuron - definition of cholinergic neuron in the ... ☆ 🔍
neuron /neu-ron/ (noor'on) nerve cell; any of the conducting cells of the ...
medical-dictionary.thefreedictionary.com/cholinergic+neuron - Cached - [Similar](#)

[+](#) Show more results from thefreedictionary.com

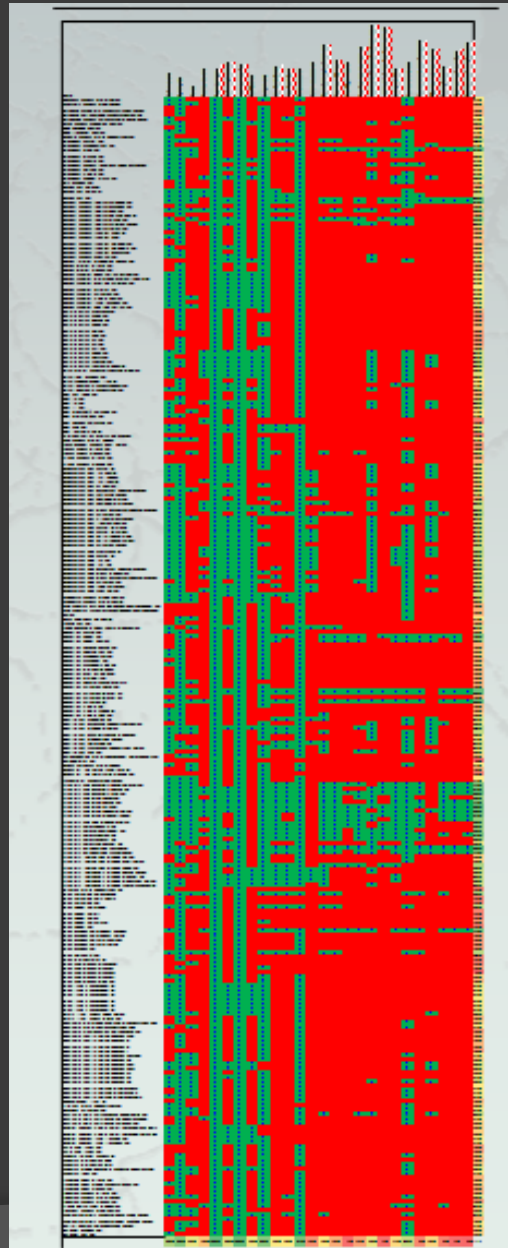
Everything
[Images](#)
[Videos](#)
[More](#)

San Diego, CA
[Change location](#)

All results
[Sites with images](#)
[More search tools](#)

Something different
[dopaminergic neurons](#)
[dopamine neurons](#)
[interneurons](#)
[glial cells](#)
[gabaergic neurons](#)

Master table of neurons?



The current list of candidate neurons and their properties, as defined in collaboration with the RDP Program as a component of the current list of candidate neurons. Each row and column show the completeness of the current list of candidate neurons. The table is oriented vertically on the page.

Master table of neurons?

| Name | Definitions | Synonyms | Roles | Abbreviations | Super Category | Definition Citation | Unique Identifier | PubMed IDs | Organism | Cell Soma Shape | Cell Soma Size | Soma Location | Dendrite Location | Suine Density On Dendrites | Branching Metrics | Axon Myelination | Axon Projection Laterality | Location Of Distant Axon Arborization | Location Of Local Axon Arborization | Origin Of Axon | Neurotransmitter | Neurotransmitter Receptors | Molecular Constituents | Firing Patterns | Spontaneous Firing Rate | Spontaneous Firing Patterns | |
|--|-------------|----------|-------|---------------|----------------|---------------------|-------------------|------------|----------|-----------------|----------------|---------------|-------------------|----------------------------|-------------------|------------------|----------------------------|---------------------------------------|-------------------------------------|----------------|------------------|----------------------------|------------------------|-----------------|-------------------------|-----------------------------|-----|
| Abducens nucleus motor neuron | x | x | | | | | | | | | | | | | | | | | | | | | | | | 27% | |
| Accessory nucleus motor neuron | x | x | | | | | | | | | | | | | | | | | | | | | | | | | 23% |
| Amygdala basolateral nucleus pyramidal neuron | | x | | | | | | | | | | | | | | | | | | | | | | | | | 19% |
| Amygdala cortico-medial nucleus pyramidal cell | | x | | | | | | | | | | | | | | | | | | | | | | | | | 19% |
| Amygdaloid nucleus parvocapsular intercalated cell | x | | | | | | | | | | x | | | | | | | | | | x | | | | | | 27% |
| Basalis nucleus cholinergic neuron | | x | | | | | | | | | | | | | | | | x | | x | | | | | | | 35% |
| BNST beaded neuron | | x | | | | | | | | | | | | | | | | | | | | | | | | | 19% |
| BNST triangular neuron | x | | | | | | | | | | | | | | | | | | | | | | | | | | 27% |
| Caudate nucleus matrix medium spiny cell | x | | | | | | | | | | | | | | | | | | | | | | | | | | 23% |
| Cerebellum basket cell | x | x | x | | | | | | | | | | | | x | x | | | | x | x | | | | | | 54% |
| Cerebellum candelabrum cell | x | | | | | | | | | | | | | | | | | | | | | | x | | | | 27% |
| Cerebellum Golgi cell | x | x | x | | | | | | | | | | | | x | x | x | x | x | x | x | | | x | x | x | 81% |
| Cerebellum granule cell | x | x | | | | | | | | | | | | | | | | x | | x | x | | | | | | 38% |
| Cerebellum Lugaro cell | x | | | | | | | | | | | | | | | | | | | | | | | | | | 31% |
| Cerebellum nucleus reciprocal projections neuron | x | x | | | | | | | | | | | | | | | | | | x | x | x | | | | | 38% |
| Cerebellum Purkinje cell | x | x | | | | | | | | | | | | | | | | | | | | | | | | | 31% |
| Cerebellum stellate cell | x | x | | | | | | | | | | | | | | | | | | x | x | | | | | | 31% |
| Cerebellum unipolar brush cell | x | x | | | | | | | | | | | | | | | | | | | | | x | | | | 50% |
| Ciliary ganglion cell | | x | | | | | | | | | | | | | | | | | | | x | x | | | | | 27% |
| Cochlea hair cell inner | | x | | | | | | | | | | | | | | | | | | | | | | | | | 19% |
| Cochlea hair cell outer | x | x | | | | | | | | | | | | | | | | | | | | | | | | | 38% |
| Cochlea hair cell | x | x | x | | | | | | | | | | | | | | | | | | | | | | | | 46% |
| Cochlear nucleus (dorsal) cartwheel cell | | x | | | | | | | | | | | | | x | x | | | x | x | x | | x | x | x | x | 81% |
| Cochlear nucleus (dorsal) gabaergic cell | | x | | | | | | | | | | | | | | | | | | | | | | | | | 23% |
| Cochlear nucleus (dorsal) giant cell | | x | | | | | | | | | | | | | x | | | | | | | | | | | | 58% |
| Cochlear nucleus (dorsal) glutamatergic cell | | x | | | | | | | | | | | | | | | | | | | | | | | | | 19% |
| Cochlear nucleus (dorsal) granule cell | x | | | | | | | | | | | | | | x | x | x | | x | x | | | | | | | 62% |
| Cochlear nucleus (dorsal) pyramidal neuron | x | x | | | | | | | | | | | | | | | | | | | | | | | | | 46% |
| Cochlear nucleus (dorsal) vertical cell | x | x | | | | | | | | | | | | | | | | | | | | | | | | | 23% |
| Cochlear nucleus (ventral) bushy cell | | x | | | | | | | | | | | | | | | | | | | | | | | | | 19% |
| Cochlear nucleus (ventral) D cell | x | x | | | | | | | | | | | | | | | | | | | | | | | | | 23% |
| Cochlear nucleus (ventral) multipolar cell | | x | | | | | | | | | | | | | | | | | | | | | | | | | 19% |
| Cochlear nucleus (ventral) multipolar T cell | x | | | | | | | | | | | | | | | | | | | | | | | | | | 23% |

Master table of neurons?

| Name | <u>Definitions</u> | <u>Synonyms</u> | <u>Roles</u> | <u>Abbreviations</u> | <u>SuperCategory</u> | <u>DefiningCitation</u> | <u>UniqueIdentifier</u> | <u>PubMedIds</u> | <u>Organism</u> | <u>CellSomaShape</u> | <u>CellSomaSize</u> | <u>SomaLocation</u> | <u>DendriteLocation</u> | <u>SpineDensityOnDendrites</u> |
|---|--------------------|-----------------|--------------|----------------------|----------------------|-------------------------|-------------------------|------------------|-----------------|----------------------|---------------------|---------------------|-------------------------|--------------------------------|
| Abducens nucleus motor neuron | x | x | | | x | | x | | x | | | x | | |
| Accessory nucleus motor neuron | x | x | x | | x | | x | | | | | | | |
| Amygdala basolateral nucleus pyramidal neuron | | x | | | x | | x | | x | | | x | | |
| Amygdala corticomedial nucleus pyramidal cell | | x | | | x | | x | | x | | | x | | |
| Amygdaloid nucleus paracapsular intercalated cell | x | | | | x | x | x | | x | | x | | | |
| Basalis nucleus cholinergic neuron | x | x | | | x | | x | x | x | | | x | | |
| BNST beaded neuron | | x | | | x | | x | | x | | | x | | |
| BNST triangular neuron | x | x | | | x | | x | | x | | | x | | |
| Caudate nucleus matrix medium spiny cell | x | | | | x | | x | | x | | | x | | |
| Cerebellum basket cell | x | x | x | | x | | x | | x | x | x | x | | x |
| Cerebellum candelabrum cell | x | | | | x | | x | | x | | | x | | |
| Cerebellum Golgi cell | x | x | x | | x | | x | | x | x | x | x | | x |
| Cerebellum granule cell | x | x | x | | x | | x | | x | | | x | | |
| Cerebellum Lugaro cell | x | x | | | x | x | x | x | x | | | x | | |
| Cerebellum nucleus reciprocal projections neuron | x | x | | | x | | x | | x | | | x | | |
| Cerebellum Purkinje cell | x | x | | | x | x | x | x | x | | | x | | |
| Cerebellum stellate cell | x | x | | | x | | x | | x | | | x | | |

Every row represents a wiki page that is publicly available for review and edit

Partnerships & Community



NEUROSCIENCE INFORMATION FRAMEWORK



International Neuroinformatics
Coordinating Facility

Curators with the NIH-funded Neuroscience Information Framework and volunteers with the International Neuroinformatics Coordinating Facility



Community

Contributions

- Described work to represent neuroscience using ontologies
- Provided an introduction to NIF and NeuroLex.org and their use for creating structured data in neuroscience
- Outlined some examples of use of structured data within NeuroLex.org

Acknowledgements

NIF

Maryann Martone
(Director)

Jeff Grethe

Anita Bandrowski

Amarnath Gupta

Fahim Imam

Vadim Astahkov

Andrea Arnaud

Jonathan Cachat

Larry Lui

Vicky Rowley

Chris Condit

Xufei Qian

Jennifer Lawrence

Willy Wong

Cliff Lee

Lee Hornbrook

Vulcan

Mark Greaves

Wil Smith

Jesse Wang