

实用生物信息技术课程总结交流会

SRS应用初探

2008年6月22日

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其他组员：颜志辉、郭凤璿、王诵涛

主要内容

1.SRS简介

2.SRS使用实例

3.SRS高级应用技巧

4.总结和展望

SRS简介

- Sequence Retrieval System,
意即“序列提取系统”
- 生物信息数据库检索系统
- 集“查询、分析、保存”于一体的
信息平台

SRS产生背景

- 生物信息种类繁多且呈指数增长
- 大多数信息以文本文件存储
- 各数据库的查询功能有限
- 难以进行跨数据库的查询

文本文件存储

- 利于不同类型数据的扩展
- 利于迅速增长的数据的存储和维护
- 方便计算机处理
- 能够直接供人阅读

EMBL的数据格式

```
ID   Z66500; SV 1; linear; genomic DNA; STD; INV; 33780 BP.
XX
AC   Z66500;
XX
DT   25-OCT-1995 (Rel. 45, Created)
DT   02-JUN-2008 (Rel. 96, Last updated, Version 86)
XX
DE   Caenorhabditis elegans Cosmid T05C12
XX
KW   HTG.
XX
OS   Caenorhabditis elegans
OC   Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
OC   Rhabditidae; Peloderinae; Caenorhabditis.
XX
RN   [1]
RP   1-33780
RX   DOI; 10.1126/science.282.5396.2012
RX   PUBMED; 9851916.
RG   WormBase Consortium
RA   ;
RT   "Genome sequence of the nematode C. elegans: a platform for investigating
RT   biology";
RL   Science 282(5396):2012-2018(1998).
XX
RN   [2]
```

GeneBank的数据格式

LOCUS NM_063315 1503 bp mRNA linear INV 07-APR-2008
DEFINITION Caenorhabditis elegans AcetylCholine Receptor family member
(acr-14) (acr-14) partial mRNA.
ACCESSION NM_063315
VERSION NM_063315.1 GI:17531182
KEYWORDS .
SOURCE Caenorhabditis elegans
ORGANISM [Caenorhabditis elegans](#)
Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida;
Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
REFERENCE 1 (bases 1 to 1503)
CONSRTM The C.elegans Sequencing Consortium
TITLE Direct Submission
JOURNAL Submitted (11-AUG-2003) Nematode Sequencing Project, Wellcome Trust
Sanger Institute, Hinxton, Cambridge CB10 1SA, UK, and Genome
Sequencing Center, Washington University, St. Louis, MO 63110, USA.
E-mail: sequence@wormbase.org
COMMENT REVIEWED [REFSEQ](#): This record has been curated by WormBase. This
record is derived from an annotated genomic sequence ([NC_003280](#)).
The reference sequence was derived from T05C12.2.
Expression: acr-14 encodes a protein that contains
neurotransmitter-gated ion-channel ligand-binding and transmembrane
domains.

RNAi results: [Rual JF] Not abnormal based on scoring phenotypes
postembryonic_development_abnormal, lethal. [Sonnichsen B] Not
abnormal based on scoring phenotypes embryonic_lethal,
organism_morphology_abnormal, maternal_sterile. [Kamath RS] Not

SRS的特点

- 查询针对文本文件数据
- 提供统一的网页操作界面
- 上千个数据库与上百个分析工具
- 能同时关联查询多个数据库
- 任意组合各种查询条件
- 可直接对查询结果进行分析

SRS与BLAST

- 两者都可以查询和提取序列数据
- **SRS**根据序列的不同字段信息进行关键词查找
- **BLAST**通过序列相似性比对算法来查找
- **SRS**通过整合**BLAST**工具，也可以实现**BLAST**功能

公用SRS服务器

- EMBL (<http://srs.embl.de/srs/>)
 - SRS 8.2, 102个库, 6个工具
- DKFZ (<http://www.dkfz-heidelberg.de/srs>)
 - SRS 7.13, 769个库
- EBI (<http://srs.ebi.ac.uk>)
 - SRS 7.13, 112个库, 161个工具

(信息来自: <http://downloads.biowisdomsrs.com/publicsrs.html>)

2、SRS使用实例

1.SRS快速查询

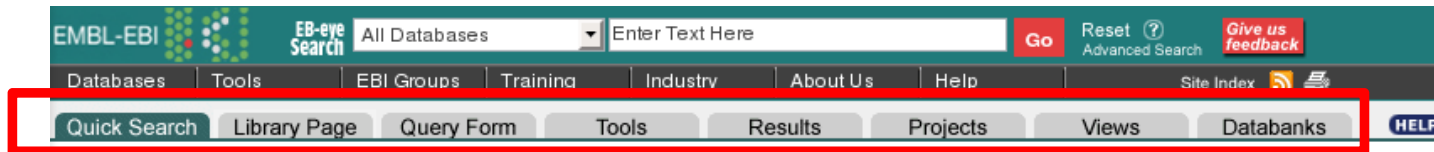
2.SRS标准查询

3.SRS扩展查询

4.保存查询结果

EBI-SRS网站首页

工具栏



SRS

[Start a Permanent Project](#)

Tips

- ★ *Want to know more about using SRS?*
- go to the [Help Center](#) for online searchable help.
- look in our [SRS@EBI FAQ](#) for answers to commonly asked questions
- ★ *Linking to SRS?*
- Please read our [Linking to SRS](#) guide for important information regarding linking to our SRS server.
- ★ [Public SRS servers worldwide](#)

Quick Text Search [Search Tips](#)

Find: matching:

Searches Databanks: EMBL Nucleotides

快速查询

News and Announcements [Search Tips](#)

Important announcements:

- 11.06.08 [GR Transcripts](#) is now available.
- 10.06.08 [EMBL Release 95](#) is now on-line ([release notes](#), [data notes](#)).
- 10.06.08 **Please note:** This service will be affected by essential maintenance today between 08:30 and 10:00 GMT. We apologise for any inconvenience caused.
- 17.04.08 **Please Note:** Some services will be affected by essential maintenance on Saturday 19th April 2008 from 10:00 to 16:00 GMT. We apologise for any inconvenience caused.
- 25.03.08 **UniParc** will be unavailable while an indexing problem is addressed.
Update: [UniParc](#) is now available again

List Search [Search Tips](#)

Paste in a list of sequence ID's. The list must be of the format DATABASE:ID. e.g. EMBL:AB046566 or UNIPROT:104K_THEAN. For more details see the [wiki](#).


Ensure each entry is on a single line and that the database(s) exists on this server. Multiple databases can be searched simultaneously. There is a maximum limit of 500 ID's.

批量提取

SRS快速查询

Quick Text Search [Search Tips](#)

Find : matching :

Search 

- Nucleotides
- Proteins
- Structures
- Protein Families
- Literature
- Genome
- Mutations
- Metabolic Pathways

News [Search Tips](#)

Import

11 00 00 CD Transcript

快速查询的类型

选项	含义	数据库
Nucleotide	核酸序列	EMBL EMBLCON EMBLCDS EMBLANN
Proteins	蛋白序列	UNIPROT UNIPARC
Structures	蛋白结构	PDB
Protein Families	蛋白家族	INTERPRO
Literature	文献	MEDLINE
Genome	基因组	ENTREZGENE
Mutations	突变	OMIM
Metabolic Pathways	代谢途径	PATHWAY

EBI-SRS的数据库列表

Query Form Tools Results Projects Views **Databanks** HELP Job Status

Databank Information					
Databank	Release	No. of Entries	Indexing Date	Group	Availability
MEDLINE		virtual databank		References	
TAXONOMY		486851	18-Jun-2008	References	OK
OMIM		19622	17-Jun-2008	References	OK
OMIMMORBIDMAP		4892	12-Jun-2008	References	OK
PATABS		1500000	28-Mar-2008	References	OK
KG		274	10-Apr-2008	References	OK
MEDLINENEW		1698810	18-Jun-2008	ReferencesSub	OK
MEDLINE2008		16880015	19-Mar-2008	ReferencesSub	OK
MED2PUB		14116195	18-Mar-2008	ReferencesSub	OK
UNILIB		23715	18-Jun-2008	GENEDICT	OK
LOCUSLINK		287853	19-Mar-2008	GENEDICT	OK
UNIGENE		1784319	14-Jun-2008	GENEDICT	OK
HGNC		28100	30-Mar-2008	GENEDICT	OK
ENTREZGENE		4431579	14-Jun-2008	GENEDICT	OK
GOA		30154039	28-May-2008	Ontology	OK
GO		24708	18-Mar-2008	Ontology	OK
EMBL		virtual databank		DNA Sequence	

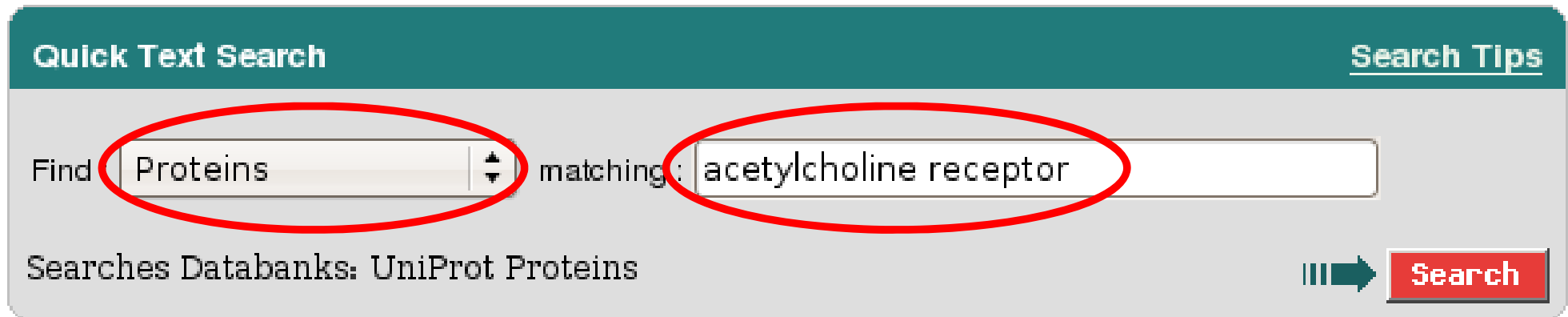
SRS快速查询实例

以研究“乙酰胆碱受体蛋白”为例

Quick Text Search [Search Tips](#)

Find matching:

Searches Databanks: UniProt Proteins



查询结果

Quick Search Library Page Query Form Tools Results Projects Views Databanks HELP Job Status

Reset

Query {{{[UNIPROT UNIPARC]-alltext:acetylcholine*}} & [{}UN:} next

found 1132 entries

Apply Options to:

selected results only

unselected results only

Result Options

Launch analysis tool:

NCBI BLASTP [Launch](#)

Show tools relevant to these results: [Tools](#)

Link to related information: [Link](#)

Save results: [Save](#)

Display Options

View results using: UniprotView

Sort results by: unsorted

ascending

descending

Show 30 results per page

Printer friendly view

[Apply Display Options](#)

UniProtKB	Accession	UniSave	Description	GeneName	Species	Keywords	SeqLength
<input type="checkbox"/> UniProtKB:A4_HUMAN	P05067	P05067	Amyloid beta A4 protein precursor (Alzheimer disease amyloid protein) (ABPP) (APP1) (APP) (PreA4) (Cerebral vascular amyloid peptide) (CVAP) (Protease nexin-II) (PN-II) [Contains: Soluble APP-alpha (S-APP- alpha); Soluble APP-beta (S-APP-beta); C99; Beta-amyloid protein 42 (Beta-APP42); Beta-amyloid protein 40 (Beta-APP40); C83; P3(42); P3(40); Gamma-CTF(59) (Gamma-secretase C-terminal fragment 59) (Amyloid intracellular domain 59) (AICD-59) (AID(59)); Gamma-CTF(57) (Gamma-secretase C-terminal fragment 57) (Amyloid intracellular domain 57) (AICD-57) (AID(57)); Gamma-CTF(50) (Gamma-secretase C-terminal fragment 50) (Amyloid intracellular domain 50) (AICD-50) (AID(50)); C31].	APP	Homo sapiens (Human).	3D-structure Alternative splicing Alzheimer disease Amyloid Apoptosis Cell adhesion Coated pit Copper Direct protein sequencing Disease mutation Endocytosis Glycoprotein Heparin-binding Iron Membrane Metal-binding Notch signaling pathway Phosphoprotein Polymorphism Protease inhibitor Proteoglycan Serine protease inhibitor Signal Transmembrane Zinc	770
<input type="checkbox"/> UniProtKB:ACH10_CHICK				CHRNA10		Calcium Calcium channel Calcium	

查询结果条目 (Entry Page)

Quick Search Library Page Query Form Tools Results Projects Views Databanks HELP Job Status

[Text Entry](#) | [SwissEntry](#) | [NiceProt](#) | [iProClass](#) | [UniProtXML](#) | [Related Data](#)

Reset

Entry 1 of 1132 from [Query 1](#) [Next Entry](#)

[General](#) [Description](#) [References](#) [Comments](#) [Links](#) [Keywords](#) [Features](#) [Sequence](#)

Entry Information

Entry from: [UniProtKB](#)

Entry Options

Launch analysis tool:
NCBI BLASTP

Link to related information:

Save entry:

View:

General information

Entry name	A4_HUMAN
Accession number	P05067 , P09000 , P78438 , Q13764 , Q13778 , Q13793 , Q16011 , Q16014 , Q16019 , Q16020 , Q9BT38 , Q9UCA9 , Q9UCB6 , Q9UCC8 , Q9UCD1 , Q9UQ58
Integrated	13-AUG-1987, UniProtKB/Swiss-Prot.
Sequence update	01-NOV-1991, sequence version 3
Annotation update	10-JUN-2008, entry version 153
UniSave	P05067 , P09000 , P78438 , Q13764 , Q13778 , Q13793 , Q16011 , Q16014 , Q16019 , Q16020 , Q9BT38 , Q9UCA9 , Q9UCB6 , Q9UCC8 , Q9UCD1 , Q9UQ58
UniRef100	UniRef100_P05067 , UniRef100_P05067-6 , UniRef100_P05067-3 , UniRef100_P05067-7 , UniRef100_P05067-9 , UniRef100_P05067-2 , UniRef100_P05067-4 , UniRef100_P05067-10 , UniRef100_P05067-5 , UniRef100_Q6GSC0
UniParc	UPI000002A2F0 , UPI000002A2F1 , UPI000002A2F2 , UPI000002A2F3 , UPI000002A2F4 , UPI000002A2F5 , UPI000002A2F6 , UPI000002A2F7 , UPI000002DB1C , UPI00001BE539

Description and origin of the Protein

Description	Amyloid beta A4 protein precursor (Alzheimer disease amyloid protein) (ABPP) (APPI) (APP) (PreA4) (Cerebral vascular amyloid peptide) (CVAP) (Protease nexin-II) (PN-II) [Contains: Soluble APP-alpha (S-APP-alpha); Soluble APP-beta (S-APP-beta); C99; Beta-amyloid protein 42 (Beta-APP42); Beta-amyloid protein 40 (Beta-APP40); C83; P3(42); P3(40); Gamma-CTF(59) (Gamma-secretase C-terminal fragment 59) (Amyloid intracellular domain 59) (AICD-59) (AID(59)); Gamma-CTF(57) (Gamma-secretase C-terminal fragment 57) (Amyloid intracellular domain 57) (AICD-57) (AID(57)); Gamma-CTF(50) (Gamma-secretase C-terminal fragment 50) (Amyloid intracellular domain 50) (AICD-50) (AID(50)); C31].
Gene name(s)	APP
Synonym(s)	A4 AD1
Organism source	Homo sapiens (Human).
Taxonomy	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Primates; Haplorrhini; Catarrhini; Hominidae; Homo.
NCBI TaxID	9606

References

[1] Kang,J., Lemaire,H.-G., Unterbeck,A., Salbaum,J.M., Masters,C.L., Grzeschik,K.-H., Multhaup,G., Beyreuther,K., Mueller-Hill,B., **The precursor of Alzheimer's disease amyloid A4 protein resembles a cell-surface receptor.** (1987) *Nature* **325**:733-736

Position	NUCLEOTIDE SEQUENCE [MRNA] (ISOFORM APP695).
Comments	TISSUE=Brain;

结果条目的不同显示方式

Reset

Entry 1 of 1132 from [Query 1](#) [Next Entry](#)

Entry Information

Entry from: [UniProtKB](#)

Entry Options

Launch analysis tool:

NCBI BLASTP

Launch

Link to related information:

Link

Save entry:

Save

View:

Printer Friendly

ID A4_HUMAN Reviewed; 770 AA.
AC P05067; P09000; P78438; Q13764; Q13778; Q13793; Q16011; Q16014;
AC Q16019; Q16020; Q9BT38; Q9UCA9; Q9UCB6; Q9UCC8; Q9UCD1; Q9UQ58;
DT 13-AUG-1987, integrated into UniProtKB/Swiss-Prot.
DT 01-NOV-1991, sequence version 3.
DT 10-JUN-2008, entry version 153.
DE Amyloid beta A4 protein precursor (Alzheimer disease amyloid protein)
DE (ABPP) (APPI) (APP) (PreA4) (Cerebral vascular amyloid peptide) (CVAP)
DE (Protease nexin-II) (PN-II) [Contains: Soluble APP-alpha (S-APP-
DE alpha); Soluble APP-beta (S-APP-beta); C99; Beta-amyloid protein 42
DE (Beta-APP42); Beta-amyloid protein 40 (Beta-APP40); C83; P3(42);
DE P3(40); Gamma-CTF(59) (Gamma-secretase C-terminal fragment 59)
DE (Amyloid intracellular domain 59) (AICD-59) (AID(59)); Gamma-CTF(57)
DE (Gamma-secretase C-terminal fragment 57) (Amyloid intracellular domain
DE 57) (AICD-57) (AID(57)); Gamma-CTF(50) (Gamma-secretase C-terminal
DE fragment 50) (Amyloid intracellular domain 50) (AICD-50) (AID(50));
DE C31].
GN Name=APP; Synonyms=A4, AD1;
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Euarchontoglires; Primates; Haplorrhini;
OC Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=[9606](#);
RN [1]
RP NUCLEOTIDE SEQUENCE [MRNA] (ISOFORM APP695).
RC TISSUE=Brain;
RX MEDLINE=[87144572](#); PubMed=[2881207](#); DOI=[10.1038/325733a0](#);
RA Kang J., Lemaire H.-G., Unterbeck A., Salbaum J.M., Masters C.L.,
RA Czechnik K., Multhaup G., Beyreuther K., Muller-Thiermann P.

快速查询存在的假阳性结果

并不是我们要查找的蛋白

Entry name	A4_HUMAN
Accession number	P05067 , P09000 , P78438 , Q13764 , Q13778 , Q13793 , Q16011 , Q16014 , Q16019 , Q16020 , Q9BT38 , Q9UCA9 , Q9UCB6 , Q9UCC8 , Q9UCD1 , Q9UQ58
Integrated	13-AUG-1987, UniProtKB/Swiss-Prot.
Sequence update	01-NOV-1991, sequence version 3
Annotation update	10-JUN-2008, entry version 153
UniSave	P05067 , P09000 , P78438 , Q13764 , Q13778 , Q13793 , Q16011 , Q16014 , Q16019 , Q16020 , Q9BT38 , Q9UCA9 , Q9UCB6 , Q9UCC8 , Q9UCD1 , Q9UQ58
UniRef100	UniRef100 P05067 , UniRef100 P05067-6 , UniRef100 P05067-3 , UniRef100 P05067-7 , UniRef100 P05067-9 , UniRef100 P05067-2 , UniRef100 P05067-4 , UniRef100 P05067-10 , UniRef100 P05067-5 , UniRef100 Q6GSC0
UniParc	UPI000002A2F0 , UPI000002A2F1 , UPI000002A2F2 , UPI000002A2F3 , UPI000002A2F4 , UPI000002A2F5 , UPI000002A2F6 , UPI000002A2F7 , UPI000002DB1C , UPI00001BE539

Description and origin of the Protein

Description **Amyloid beta A4 protein precursor** (Alzheimer disease amyloid protein) (ABPP) (APPI) (APP) (PreA4) (Cerebral vascular amyloid peptide) (CVAP) (Proteinase nexin-1) (PN-1) [Contains: Soluble APP-alpha (S-APP-alpha); Soluble APP-beta (S-APP-beta); C99; Beta-amyloid protein 42 (Beta-APP42); Beta-amyloid protein 40 (Beta-APP40); C83; P3(42); P3(40); Gamma-CTF(59) (Gamma-secretase C-terminal fragment 59) (Amyloid intracellular domain 59) (AICD-59) (AID(59)); Gamma-CTF(57) (Gamma-secretase C-terminal fragment 57) (Amyloid intracellular domain 57) (AICD-57) (AID(57)); Gamma-CTF(50) (Gamma-secretase C-terminal fragment 50) (Amyloid intracellular domain 50) (AICD-50) (AID(50)); C31].



[52] Wang,H.-Y., Lee,D.H.S., D'Andrea,M.R., Peterson,P.A., Shank,R.P., Reitz,A.B.,
Beta-amyloid(1-42) binds to alpha7 nicotinic acetylcholine receptor with high affinity. Implications for Alzheimer's disease pathology.
(2000) *J. Biol. Chem.* **275**:5626-5632

Position	INTERACTION OF BETA-APP42 WITH CHRNA7.
Medline	20148766
DOI	10.1074/jbc.275.8.5626 ;
PubMed	10681545

引用文献中出现了我们查询的关键词



[53] Passer,B., Pellegrini,L., Russo,C., Siegel,R.M., Lenardo,M.J., Schettini,G., Bachmann,M., Tabaton,M., D'Adamo,L.,
Generation of an apoptotic intracellular peptide by gamma-secretase cleavage of Alzheimer's amyloid beta protein precursor.

为什么会出现假阳性结果

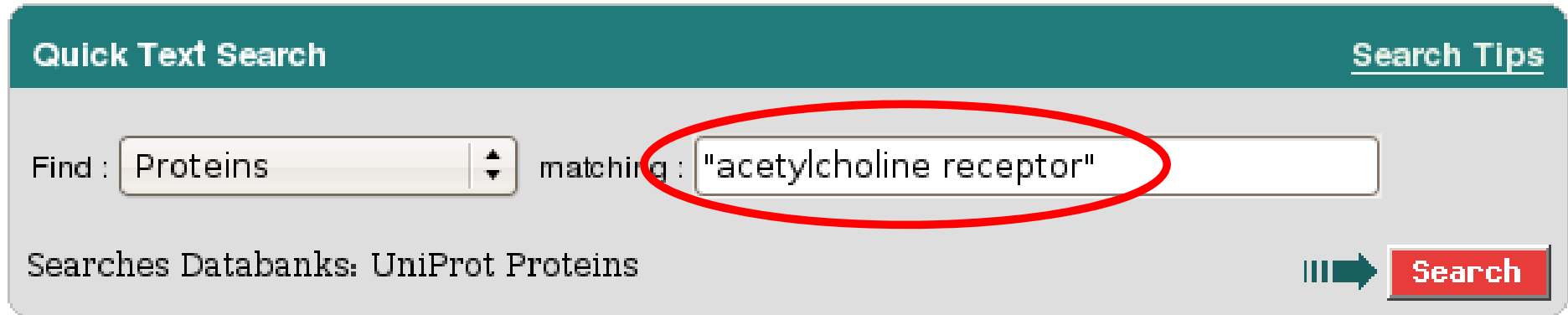
The screenshot shows a search interface with a menu bar (Query Form, Tools, Results, Projects, Views, Databanks, HELP) and a search bar containing the query: `(([{UNIPROT UNIPARC}-alltext:acetylcholine*] & [{UNIPROT UNIPARC}-alltext:receptor*]) | [{UNIPROT UNIPARC}-alltext:acetylcholine receptor*])`. A red oval highlights the search bar. Below the search bar, it says "found 1132 entries". A table of results is shown with columns: UniProtKB, Accession, UniSave, Description, and GeneName. The first row is: [UniProtKB:A4 HUMAN](#), with GeneName "APP".

UniProtKB	Accession	UniSave	Description	GeneName
<input type="checkbox"/> UniProtKB:A4 HUMAN				APP

(([{UNIPROT UNIPARC}-alltext:acetylcholine*]
& [{UNIPROT UNIPARC}-alltext:receptor*])
| [{UNIPROT UNIPARC}-alltext:acetylcholine receptor*])

- (1) **alltext** 则文字可能被包含于Reference中
- (2) 前两个条件，可能某条结果包含乙酰胆碱，而受体却不是针对乙酰胆碱的受体

如何减少假阳性结果



Quick Text Search [Search Tips](#)

Find: Proteins

Searches Databanks: UniProt Proteins

The screenshot shows a search interface with a dropdown menu set to 'Proteins' and a search input field containing the text 'matching: "acetylcholine receptor"'. The search term is enclosed in red quotes and circled in red. A 'Search' button is visible to the right.

添加引号后，查询语句变为：

`[{UNIPROT UNIPARC}-alltext:acetylcholine receptor]`

从而有效避免了一部分假阳性结果的出现

SRS查询语言

- **SRS Query Language**，为SRS系统实现的基础接口（所有查询操作都会转换成为**SRS**查询语言进行执行）
- 准确表示出查询语义
- 可任意灵活地组合各种条件，包括一些用网页操作界面很难完成的查询操作
- 但学习和掌握起来难度较大
- 这里不再深入介绍

标准查询前需要先选择数据库

Quick Search **Library Page** Query Form Tools Results Projects Views Databanks **HELP**

Reset **Quick Search**

Search Options

1. **Select the databanks** you want to search
2. Enter your **search terms** in the **Quick Search** box, or choose a **query form** from below

Standard Query Form

Extended Query Form

You can **browse** through all the **entries** in any **databanks**. First, **select** the **databanks** you want to browse, then click:

Browse Entries

Available Databanks

[Expand all](#) [Collapse all](#) Show databanks tooltips:

Literature, Bibliography and Reference Databases

[MEDLINE](#) [Taxonomy](#) [OMIM](#) [OMIM Morbid Map](#)

[Patent Abstracts](#) [Karyn's Genomes](#)

Literature, Bibliography and Reference Databases - subsections

[MEDLINE \(Updates\)](#) [MEDLINE \(Main Release 2008\)](#) [MED2PUB](#)

Gene Dictionaries and Ontologies

Nucleotide sequence databases

[EMBL](#) [Patent DNA](#) [EMBL \(Contig\)](#) [EMBL \(Contigs expanded\)](#)

[EMBL \(Annotated Cons\)](#) [EMBL \(Coding Sequences\)](#) [EMBL ID/Accession Mapping](#) [EMBL MGA](#)

[IMG/HLA](#) [IPD-KIR](#) [Genome Reviews](#)

[GR Genes](#) [RefSeq Genome](#) [LiveLists](#)

Nucleotide sequence databases - subsections

[EMBL \(Updates\)](#) [EMBL \(Release\)](#) [EMBL \(Whole Genome Shotgun\)](#)

[EMBL \(Whole Genome Shotgun release\)](#) [EMBL \(Whole Genome Shotgun updates\)](#) [EMBL \(Contig release\)](#)

[EMBL \(Contig updates\)](#) [EMBL \(Contigs expanded release\)](#) [EMBL \(Contigs expanded updates\)](#)

[EMBL \(Annotated Cons release\)](#) [EMBL \(Annotated Cons updates\)](#) [EMBL \(Release, Deleted\)](#)

[EMBL \(Whole Genome Shotgun Masters\)](#) [ENA Project](#) [RefSeq Genome \(Release\)](#)

[RefSeq Genome \(Updates\)](#)

Nucleotide related databases

UniProt Universal Protein Resource

[UniProtKB](#) [UniProtKB/Swiss-Prot](#) [UniProtKB/TrEMBL](#) [UniRef100](#) [UniRef50](#) [UniParc](#)

Other protein sequence databases

Protein function, structure and interaction databases

Enzymes, reactions and metabolic pathway databases

Mutation and SNP databases

Tips

- ▶ bookmark this [link](#) to return to your project
- ▶ [Linking to SRS?](#)

- Please read our [Linking to SRS](#) guide for important information regarding linking to our SRS server.

BookMarkLets

[About BookmarkLets](#)

SRS标准查询界面

Quick Search

Library Page

Query Form

Tools

Results

Projects

Views

Databanks

HELP

Reset

search [UniProtKB/Swiss-Prot](#)

Search Options

Combine search terms

with: & (AND)

Use wildcards

Get results of type:

Entry

Result Display Options

View results using:

UniprotView

or

Create a view

Show 30

results per page

Tips

To do more advanced

Fields you can search

Your search terms

In a single field, you can separate multiple values by: &, | or !

Search

- AllText
- AllText
- AllText
- AllText

Create a view

Select the fields you want displayed in your view and choose the format

Choose 1 or more fields:

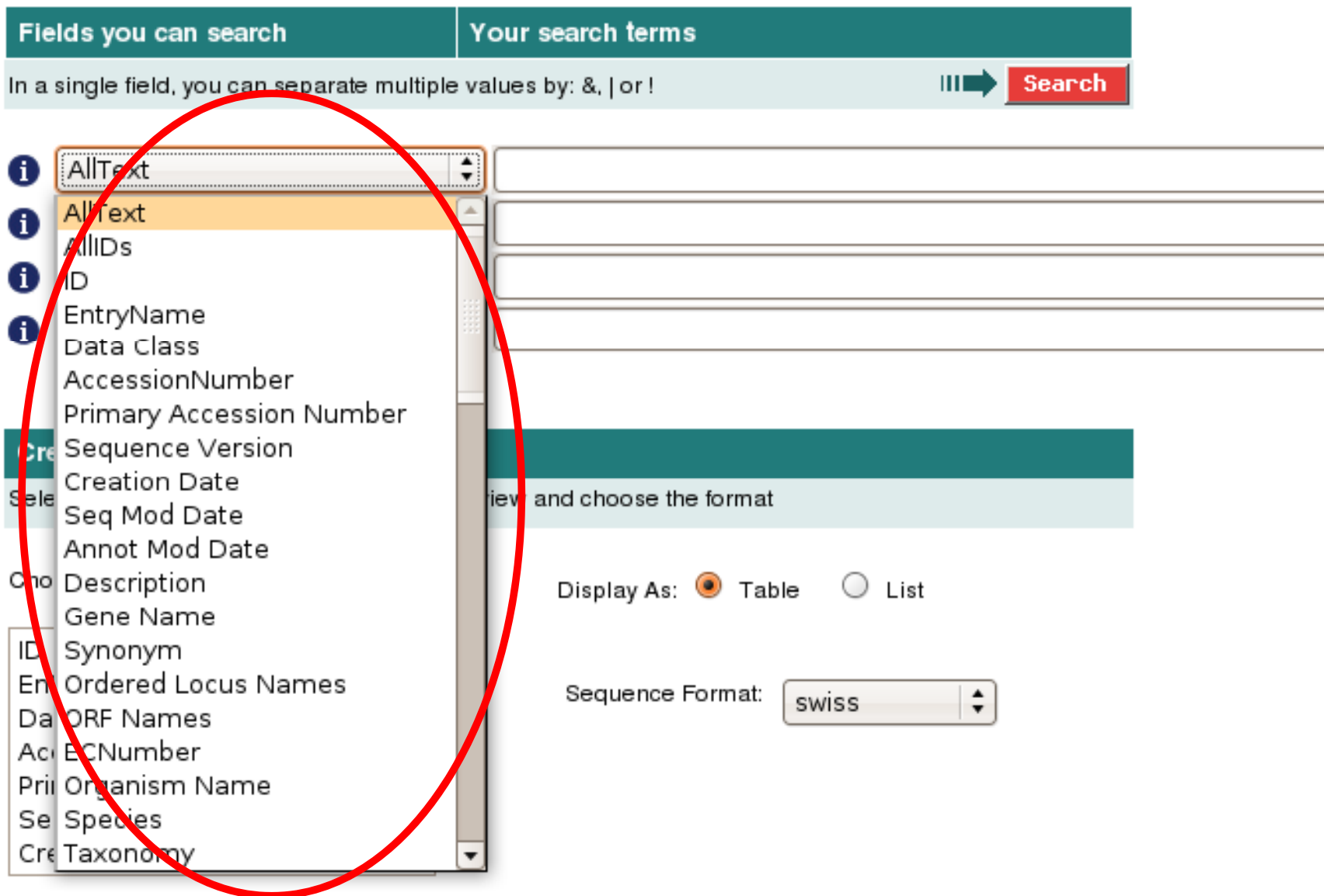
Display As: Table List

ID
EntryName
Data Class
AccessionNumber
Primary Accession Number
Sequence Version
Creation Date

Sequence Format: swiss

Search

SRS标准查询的字段选项



The image shows a web interface for SRS standard queries. At the top, there are two tabs: "Fields you can search" and "Your search terms". Below the tabs, a text box contains the instruction "In a single field, you can separate multiple values by: &, | or !". To the right of this text is a red "Search" button with a magnifying glass icon. Below the search bar, there is a dropdown menu for selecting search fields. The dropdown is currently open, showing a list of fields including "AllText", "AllIDs", "ID", "EntryName", "Data Class", "AccessionNumber", "Primary Accession Number", "Sequence Version", "Creation Date", "Seq Mod Date", "Annot Mod Date", "Description", "Gene Name", "ID Synonym", "Entry Ordered Locus Names", "Data ORF Names", "AccessionNumber", "Primary Organism Name", "Species", and "Taxonomy". A red circle highlights the dropdown menu. To the right of the dropdown, there are four empty text input boxes. Below these boxes, there is a section for "Display As:" with two radio buttons: "Table" (selected) and "List". Below that, there is a "Sequence Format:" dropdown menu with "swiss" selected.

小技巧：当焦点位于该下拉框时，可以直接按字母键快速定位到某项

SRS标准查询实例

Quick Search Library Page **Query Form** Tools Results Projects Views Databanks **HELP**

Reset search [UniProtKB/Swiss-Prot](#)

Search Options

Combine search terms with:

Use wildcards

Get results of type:

Fields you can search

In a single field, you can separate multiple values by: &, | or ! **Search**

i Description	acetylcholine receptor
i Species	human
i AllText	
i AllText	

Result Display Options

View results using:

or

Create a view

Show results per page

Create a view

Select the fields you want displayed in your view and choose the format

Choose 1 or more fields:

- ID
- EntryName
- Data Class
- AccessionNumber
- Primary Accession Number
- Sequence Version
- Creation Date

Display As: Table List

Sequence Format:

Search

Tips

To do more advanced

查询人的乙酰胆碱受体蛋白

子条目(Subentry)字段

Fields you can search | **Your search terms**

In a single field, you can separate multiple values by: &, | or ! ▶▶▶ **Search**

i AllText

i Sequence Length

i MolWeight

i crc

i DBxref_

i MedlineID_

swProtName

Isoform

DBLink

Cre SeqCreDigest

Se Reference: Authors

Se **Reference: Title**

Cho Reference: RefPosition

Reference: RefGroup

Reference: RefNumber

Reference: RefCommentCode

Reference: RefComment

Reference: Journal

Reference: VolumeNo

Reference: FirstPage

Reference: Year

Reference: Citation

view and choose the format

Display As: Table List

Sequence Format: swiss

General information

Entry name	ACHB2_RAT
Accession number	P12390 , Q53YK1
Integrated	01-OCT-1989, UniProtKB/Swiss-Prot.
Sequence update	30-MAY-2000, sequence version 2
Annotation update	10-JUN-2008, entry version 77
UniSave	P12390 , Q53YK1
UniRef100	UniRef100 P12390
UniParc	UPI000012526F

Description and origin of the Protein

Description	Neuronal acetylcholine receptor subunit beta-2 precursor (Neuronal acetylcholine receptor non-alpha-1 chain) (N-alpha 1).
Gene name(s)	Chrb2
Synonym(s)	Acrb2
Organism source	Rattus norvegicus (Rat).
Taxonomy	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Sciurognathi; Muroidea; Muridae; Murinae; Rattus.
NCBI TaxID	10116

References

- [1] Deneris,E.S., Connolly,J.G., Boulter,J., Wada,E., Wada,K., Swanson,L.W., Patrick,J., Heinemann,S.F.,
Primary structure and expression of beta 2: a novel subunit of neuronal nicotinic acetylcholine receptors.
 (1988) *Neuron* 1:45-54

Position NUCLEOTIDE SEQUENCE [MRNA].

Medline [90166479](#)

DOI [10.1016/0896-6273\(88\)90208-5;](#)

PubMed [3272154](#)



[CiteXplore](#)

- [2] Boulter,J., Connolly,J.G., Deneris,E.S., Goldman,D.J., Heinemann,S.F., Patrick,J.,
Functional expression of two neuronal nicotinic acetylcholine receptors from cDNA clones identifies a gene family.
 (1987) *Proc. Natl. Acad. Sci. U.S.A.* 84:7763-7767

Position NUCLEOTIDE SEQUENCE [MRNA].

Medline [88041184](#)

PubMed [2444984](#)



[CiteXplore](#)

关于子条目字段的查询

查询条件一：单个Reference:Authors字段

Search Options		Fields you can search	Your search terms
Combine search terms with: & (AND)		In a single field, you can separate multiple values by: &, or ! Search	
Use wildcards <input checked="" type="checkbox"/>		<i>i</i> Description	acetylcholine receptor
Get results of type: Entry		<i>i</i> Reference: Authors	Hartley,M. & Goldman,D.J.
		<i>i</i> AllText	
		<i>i</i> AllText	

查询条件二：两个Reference:Authors字段

Search Options		Fields you can search	Your search terms
Combine search terms with: & (AND)		In a single field, you can separate multiple values by: &, or ! Search	
Use wildcards <input checked="" type="checkbox"/>		<i>i</i> Description	acetylcholine receptor
Get results of type: Entry		<i>i</i> Reference: Authors	Hartley,M.
		<i>i</i> Reference: Authors	Goldman,D.J.
		<i>i</i> AllText	

第一个查询条件的结果:

Query
found 1 entries

<u>UniProtKB/Swiss-Prot</u>	<u>Accession</u>	<u>UniSave</u>	<u>Description</u>	<u>GeneName</u>	<u>Species</u>	<u>Keywords</u>	<u>SeqLength</u>
<input type="checkbox"/> UniProtKB/Swiss-Prot:ACHA4 RAT	P09483	P09483	Neuronal acetylcholine receptor subunit alpha-4 precursor.	Chrna4	Rattus norvegicus (Rat).	3D-structure Alternative splicing Cell junction Direct protein sequencing Glycoprotein Ion transport Ionic channel Membrane Postsynaptic cell membrane Signal Synapse Transmembrane Transport	630

第二个查询条件的结果:

Query found 2 entries

UniProtKB/Swiss-Prot	Accession	UniSave	Description	GeneName	Species	Keywords	SeqLength
<input type="checkbox"/> UniProtKB/Swiss-Prot:ACHA4 RAT	P09483	P09483	Neuronal acetylcholine receptor subunit alpha-4 precursor.	Chrna4	Rattus norvegicus (Rat).	3D-structure Alternative splicing Cell junction Direct protein sequencing Glycoprotein Ion transport Ionic channel Membrane Postsynaptic cell membrane Signal Synapse Transmembrane Transport	630
<input type="checkbox"/> UniProtKB/Swiss-Prot:ACHB2 RAT	P12390	P12390	Neuronal acetylcholine receptor subunit beta-2 precursor (Neuronal acetylcholine receptor non-alpha-1 chain) (N-alpha 1).	Chrnb2	Rattus norvegicus (Rat).	3D-structure Cell junction Glycoprotein Ion transport Ionic channel Membrane Postsynaptic cell membrane Signal Synapse Transmembrane Transport	500


结果多出一条!








UniSave	P12390_Q53YK1
UniRef100	UniRef100 P12390
UniParc	UPI000012526F

Description and origin of the Protein

Description	Neuronal acetylcholine receptor subunit beta-2 precursor (Neuronal acetylcholine receptor non-alpha-1 chain) (N-alpha 1).
Gene name(s)	Chrnb2
Synonym(s)	Acrb2
Organism source	Rattus norvegicus (Rat).
Taxonomy	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Sciurognathi; Muroidea; Muridae; Murinae; Rattus.
NCBI TaxID	10116

References

[1] Deneris,E.S., Connolly,J.G., Boulter,J., Wada,E., Wada,K., Swanson,L.W., Patrick,J., Heinemann,S.F.,
Primary structure and expression of beta 2: a novel subunit of neuronal nicotinic acetylcholine receptors.
 (1988) *Neuron* 1:45-54
 Position NUCLEOTIDE SEQUENCE [MRNA].
 Medline [90166479](#)
 DOI [10.1016/0896-6273\(88\)90208-5](#)
 PubMed [3272154](#)  [CiteXplore](#)

[2] Boulter,J., Connolly,J.G., Deneris,E.S., Goldman,D.J., Heinemann,S.F., Patrick,J.,
Functional expression of two neuronal nicotinic acetylcholine receptors from cDNA clones identifies a gene family.
 (1987) *Proc. Natl. Acad. Sci. U.S.A.* 84:7763-7767
 Position NUCLEOTIDE SEQUENCE [MRNA].
 Medline [88041184](#)
 PubMed [2444984](#)        [CiteXplore](#)

[3] Hartley,M.,
 Submitted NOV-1998 to the EMBL GenBank DDBJ databases
 Position SEQUENCE REVISION.

[4] Groot-Kormelink,P.J.,
 Submitted MAR-2004 to the EMBL GenBank DDBJ databases
 Position NUCLEOTIDE SEQUENCE [MRNA].
 Comments STRAIN=Sprague-Dawley; TISSUE=Brain;

Comments

子条目字段查询条件解释

查询条件一：单个Reference:Authors字段

Search Options

Combine search terms
with: & (AND)

Use wildcards

Get results of type:
Entry

Fields you can search	Your search terms
In a single field, you can separate multiple values by: &, or ! Search	
Description	acetylcholine receptor
Reference: Authors	Hartley,M. & Goldman,D.J.
Alltext	
AllText	

指被引用的同一篇文章的作者，需要同时包含两个人，两个人为同一篇文章的共同作者

查询条件二：两个Reference:Authors字段

Search Options

Combine search terms
with: & (AND)

Use wildcards

Get results of type:
Entry

Fields you can search	Your search terms
In a single field, you can separate multiple values by: &, or ! Search	
Description	acetylcholine receptor
Reference: Authors	Hartley,M.
Reference: Authors	Goldman,D.J.
Alltext	

指被引用的多篇文献的作者，需要同时包含两个人，而两个人不需要为同一篇文章的共同作者

扩展查询前也需要先选择数据库

Quick Search **Library Page** Query Form Tools Results Projects Views Databanks **HELP**

Reset **Quick Search**

Search Options

1. Select the **databanks** you want to search
2. Enter your **search terms** in the **Quick Search** box, or choose a **query form** from below

Standard Query Form

Extended Query Form

You can **browse** through all the **entries** in any **databanks**. First, **select** the **databanks** you want to browse, then click:

Browse Entries

Available Databanks

[Expand all](#) [Collapse all](#) Show databanks tooltips:

- Literature, Bibliography and Reference Databases**
 - [MEDLINE](#) [Taxonomy](#) [OMIM](#) [OMIM Morbid Map](#)
 - [Patent Abstracts](#) [Karyn's Genomes](#)
 - Literature, Bibliography and Reference Databases - subsections*
 - [MEDLINE \(Updates\)](#) [MEDLINE \(Main Release 2008\)](#) [MED2PUB](#)
- Gene Dictionaries and Ontologies**
- Nucleotide sequence databases**
 - [EMBL](#) [Patent DNA](#) [EMBL \(Contig\)](#) [EMBL \(Contigs expanded\)](#)
 - [EMBL \(Annotated Cons\)](#) [EMBL \(Coding Sequences\)](#) [EMBL ID/Accession Mapping](#) [EMBL MGA](#)
 - [IMG/HLA](#) [IMGT/HLA](#) [IPD-KIR](#) [Genome Reviews](#)
 - [GR Genes](#) [RefSeq Genome](#) [LiveLists](#)
 - Nucleotide sequence databases - subsections*
 - [EMBL \(Updates\)](#) [EMBL \(Release\)](#) [EMBL \(Whole Genome Shotgun\)](#)
 - [EMBL \(Whole Genome Shotgun release\)](#) [EMBL \(Whole Genome Shotgun updates\)](#) [EMBL \(Contig release\)](#)
 - [EMBL \(Contig updates\)](#) [EMBL \(Contigs expanded release\)](#) [EMBL \(Contigs expanded updates\)](#)
 - [EMBL \(Annotated Cons release\)](#) [EMBL \(Annotated Cons updates\)](#) [EMBL \(Release, Deleted\)](#)
 - [EMBL \(Whole Genome Shotgun Masters\)](#) [ENA Project](#) [RefSeq Genome \(Release\)](#)
 - [RefSeq Genome \(Updates\)](#)
- Nucleotide related databases**
- UniProt Universal Protein Resource**
 - [UniProtKB](#) [UniProtKB/Swiss-Prot](#) [UniProtKB/TrEMBL](#) [UniRef100](#) [UniRef90](#)
 - [UniRef50](#) [UniParc](#)
- Other protein sequence databases**
- Protein function, structure and interaction databases**
- Enzymes, reactions and metabolic pathway databases**
- Mutation and SNP databases**

Tips

- ▶ bookmark this [link](#) to return to your project
- ▶ *Linking to SRS?*
- Please read our [Linking to SRS](#) guide for important information regarding linking to our SRS server.

BookMarkLets

[About BookmarkLets](#)

- [Protein Seq](#)

SRS扩展查询界面

Reset search UniProtKB/Swiss-Prot

Search Options

Combine search terms
with:

Use wildcards

Get results of type:

Result Display Options

View results using:

or

Create a
view using selected fields

Sequence Format:

Show
results per page

Tips

You can also use the [Standard Query](#) Form.

Fields you can search	Your search terms	Create a view
-----------------------	-------------------	---------------

In a single field, you can separate multiple values by &, |, ! ||| Search

AllText	<input type="text"/>	<input type="checkbox"/>
AllIDs	<input type="text"/>	<input type="checkbox"/>
ID	<input type="text"/>	<input type="checkbox"/>
EntryName	<input type="text"/>	<input type="checkbox"/>
Data Class	<input type="text"/>	<input type="checkbox"/>
AccessionNumber	<input type="text"/>	<input type="checkbox"/>
Primary Accession Number	<input type="text"/>	<input type="checkbox"/>
Sequence Version	<input type="text"/>	<input type="checkbox"/>
Creation Date	<input type="text" value="select"/> <input type="text" value="1"/> <input type="text" value="Jan"/> <input type="text" value="YYYY"/> <input type="text" value="1"/> <input type="text" value="Jan"/> <input type="text" value="YYYY"/>	<input type="checkbox"/>
Seq Mod Date	<input type="text" value="select"/> <input type="text" value="1"/> <input type="text" value="Jan"/> <input type="text" value="YYYY"/> <input type="text" value="1"/> <input type="text" value="Jan"/> <input type="text" value="YYYY"/>	<input type="checkbox"/>
Annot Mod Date	<input type="text" value="select"/> <input type="text" value="1"/> <input type="text" value="Jan"/> <input type="text" value="YYYY"/> <input type="text" value="1"/> <input type="text" value="Jan"/> <input type="text" value="YYYY"/>	<input type="checkbox"/>
Description	<input type="text"/>	<input type="checkbox"/>
Gene Name	<input type="text"/>	<input type="checkbox"/>
Synonym	<input type="text"/>	<input type="checkbox"/>
Ordered Locus Names	<input type="text"/>	<input type="checkbox"/>
ORF Names	<input type="text"/>	<input type="checkbox"/>
ECNumber	<input type="text"/>	<input type="checkbox"/>
Organism Name	<input type="text"/>	<input type="checkbox"/>
Species	<input type="text"/>	<input type="checkbox"/>
Taxonomy	<input type="text"/>	<input type="checkbox"/>
Organelle	<input type="text"/>	<input type="checkbox"/>
NCBI TaxId	<input type="text"/>	<input type="checkbox"/>
TaxCount	<input type="text"/>	<input type="checkbox"/>

>= <=

扩展查询能够更详细地选择条件

Sequence Version

Creation Date

Seq Mod Date

Annot Mod Date

Description

Gene Name

Synonym

Ordered Locus Names

ORF Names

ECNumber

Organism Name

Species

Taxonomy

Organelle

NCBI TaxId

TaxCount

Organism Host TaxId

Organism Host Name

ProteinExistence

Keywords

ProteinID

Sequence Length

MolWeight

select 1 Jan YYYY 1 Jan YYYY

select 1 Jan YYYY 1 Jan YYYY

select 1 Jan YYYY 1 Jan YYYY

acetylcholine receptor

>= <=

1: evidence at protein level
2: evidence at transcript level
3: inferred from homology
4: predicted
5: uncertain

>= 400 <= 450

>= <=

示例：
查询通过同源推断得知的序列长度在400到450之间的乙酰胆碱受体蛋白

保存查询结果

Quick Search Library Page Query Form Tools Results Projects Views Databanks **HELP** Job Status

Reset **next**

Query found 1132 entries

Apply Options to:

selected results only

unselected results only

Result Options

Launch analysis tool:

NCBI BLASTP **Launch**

Show tools relevant to these results: **Tools**

Link to related information: **Info**

Save results: **Save**

Display Options

View results using:

UniprotView

Sort results by:

unsorted

ascending

descending

Show 30 results per page

Printer friendly view

Apply Display Options

UniProtKB	Accession	UniSave	Description	GeneName	Species	Keywords	SeqLength
<input type="checkbox"/> UniProtKB:A4 HUMAN	P05067	P05067	Amyloid beta A4 protein precursor (Alzheimer disease amyloid protein) (ABPP) (APP) (APP) (PreA4) (Cerebral vascular amyloid peptide) (CVAP) (Protease nexin-II) (PN-II) [Contains: Soluble APP-alpha (S-APP- alpha); Soluble APP-beta (S-APP-beta); C99; Beta-amyloid protein 42 (Beta-APP42); Beta-amyloid protein 40 (Beta-APP40); C83; P3(42); P3(40); Gamma-CTF(59) (Gamma-secretase C-terminal fragment 59) (Amyloid intracellular domain 59) (AICD-59) (AID(59)); Gamma-CTF(57) (Gamma-secretase C-terminal fragment 57) (Amyloid intracellular domain 57) (AICD-57) (AID(57)); Gamma-CTF(50) (Gamma-secretase C-terminal fragment 50) (Amyloid intracellular domain 50) (AICD-50) (AID(50)); C31].	APP	Homo sapiens (Human).	3D-structure Alternative splicing Alzheimer disease Amyloid Apoptosis Cell adhesion Coated pit Copper Direct protein sequencing Disease mutation Endocytosis Glycoprotein Heparin-binding Iron Membrane Metal-binding Notch signaling pathway Phosphoprotein Polymorphism Protease inhibitor Proteoglycan Serine protease inhibitor Signal Transmembrane Zinc	770
<input type="checkbox"/> UniProtKB:ACH10 CHICK				CHRNA10		Calcium Calcium channel Calcium	

保存查询结果的界面

Saving: Query

Output To:

Browser Window (HTML) File (text)

Number of entries to download:

Save As:

ASCII text/table

Save with view:

Column Separator:

Record Separator:

Generic XML format

Using the loader:

Specific XML format

Using the loader:

Using XML PrintMetaphors with id:

 Save

3、高级应用技巧

1. 链接(Link)

2. 结果视图(View)

3. 数据分析

4. SRS项目(Project)

SRS链接(Link)

- 数据库间的相互引用关系
- 对生物信息的理解与标注(annotation)
- 链接把数据库**有意义**地关联起来
 - 例如：embl 与 swissprot之间的链接，就能说明某核酸片段序列有相关的蛋白序列
- SRS对**已存在的**关联关系进行查询

SRS链接应用实例

Fields you can search	Your search terms
In a single field, you can separate multiple values by: &, or ! → Search	
i Description	acetylcholine receptor
i Species	human
i AllText	
i AllText	

仍然以“人的乙酰胆碱受体”为例，先进行标准查询

查询得到结果

Reset

Query
found 23 entries

Apply Options to:

- selected results only
 unselected results only

Result Options

Launch analysis tool:

NCBI BLASTP

Show tools relevant to these results:

Link to related information:

Save results:

Display Options

View results using:

UniprotView

Sort results by:

unsorted

UniProtKB/Swiss-Prot	Accession	UniSave	Description	GeneName	Species	Keywords	SeqLength
<input type="checkbox"/> UniProtKB/Swiss-Prot:ACH10 HUMAN				CHRNA10		Calcium Calcium channel Calcium transport Cell junction Glycoprotein Ion transport Ionic channel Membrane Postsynaptic cell membrane Receptor Signal Synapse Transmembrane Transport	
	Q9GZZ6	Q9GZZ6	Neuronal acetylcholine receptor subunit alpha-10 precursor (Nicotinic acetylcholine receptor subunit alpha 10) (NACHR alpha 10).		Homo sapiens (Human).		450
<input type="checkbox"/> UniProtKB/Swiss-Prot:ACHA2 HUMAN				CHRNA2		Cell junction Disease mutation Epilepsy Glycoprotein Ion transport Ionic channel Membrane Polymorphism Postsynaptic cell membrane Signal Synapse	
	Q15822	Q15822	Neuronal acetylcholine receptor subunit alpha-2 precursor.		Homo sapiens (Human).		529

选择需要链接的库

The screenshot displays a search interface with two main panels on the left and a large list of databases on the right.

Link Options Panel: This panel is circled in red. It contains three radio button options: "Find related entries" (selected), "Refine Query - show only results with related entries", and "Show only results without related entries". Below these options is a "Search" button.

Display Options Panel: Located below the Link Options panel, it shows "Show 30 results per page".

Databanks Available to Link to Panel: This panel is titled "Databanks Available to Link to" and includes "Expand all" and "Collapse all" buttons. It lists various database categories with checkboxes for selection:

- Literature, Bibliography and Reference Databases:** Includes MEDLINE, Taxonomy, OMIM, OMIM Morbid Map, Patent Abstracts, and Karyn's Genomes.
- Literature, Bibliography and Reference Databases - subsections:** Includes MEDLINE (Updates), MEDLINE (Main Release 2008), and MED2PUB.
- Gene Dictionaries and Ontologies:** (Expanded)
- Nucleotide sequence databases:** Includes EMBL, Patent DNA, EMBL (Contig), EMBL (Contigs expanded), EMBL (Annotated Cons), EMBL (Coding Sequences), EMBL ID/Accession Mapping, EMBL MGA, IMGT/LIGM-DB, IMGT/HLA, IPD-KIR, Genome Reviews, GR Genes, RefSeq Genome, and LiveLists.
- Nucleotide sequence databases - subsections:** Includes EMBL (Updates), EMBL (Release), EMBL (Whole Genome Shotgun), EMBL (Whole Genome Shotgun release), EMBL (Whole Genome Shotgun updates), EMBL (Contig release), EMBL (Contig updates), EMBL (Contigs expanded release), EMBL (Contigs expanded updates), EMBL (Annotated Cons release), EMBL (Annotated Cons updates), EMBL (Release, Deleted), EMBL (Whole Genome Shotgun Masters), ENA Project, and RefSeq Genome (Release).
- Nucleotide related databases:** (Expanded)
- UniProt Universal Protein Resource:** Includes UniProtKB, UniProtKB/Swiss-Prot, UniProtKB/TrEMBL, UniRef100, UniRef90, UniRef50, and UniParc.
- Other protein sequence databases:** (Expanded)
- Protein function, structure and interaction databases:** Includes PEP (ORFs), InterPro, InterPro Matches Complete, UniParc InterPro Matches, **PROSITE** (checked), PROSITEDOC, BLOCKS, PRINTS, PFAMA, PFAMB, PFAMHMMLS, PFAMHMMFS, PFAMSEED, and PRODOM.

选择PROSITE库，表示结果相关蛋白家族

链接结果

Quick Search Library Page Query Form Tools Results Projects Views Databanks HELP

Reset

Query (((([swissprot-Description:acetylcholine*] & [swissprot-Description:acetylcholine*]) & [swissprot-Description:acetylcholine*]) & [swissprot-Description:acetylcholine*]) & [swissprot-Description:acetylcholine*]) & [swissprot-Description:acetylcholine*]
found 12 entries

Apply Options to:

selected results only
 unselected results only

Result Options

Show tools relevant to these results: **Tools**

Link to related information: **Link**

Save results: **Save**

Display Options

View results using:
* Names only *

Show 30 results per page

Printer friendly view

Apply Display Options

- [PROSITE:EGF 1](#)
- [PROSITE:EGF 2](#)
- [PROSITE:EGF 3](#)
- [PROSITE:TPR](#)
- [PROSITE:TPR REGION](#)
- [PROSITE:ZF RING 1](#)
- [PROSITE:ZF RING 2](#)
- [PROSITE:43 KD POSTSYNAPTIC](#)
- [PROSITE:NEUROTR ION CHANNEL](#)
- [PROSITE:G PROTEIN RECEP F1 1](#)
- [PROSITE:G PROTEIN RECEP F1 2](#)
- [PROSITE:IG LIKE](#)

所得结果为：
人乙酰胆碱受体蛋白相关家族

此时还可以继续进行链接

再次选择需要链接的库

Reset

Find entries related to current query: in other databanks

Link Options

Select the **databanks** you want to search for **related information**

- Find **related** entries
- Refine Query - **show** only results with **related entries**
- Show** only results **without** related entries

Search

Databanks Available to Link to

Expand all Collapse all

- Literature, Bibliography and Reference Databases
 - MEDLINE Taxonomy OMIM OMIM Morbid Map
 - Patent Abstracts Karyn's Genomes
 - Literature, Bibliography and Reference Databases - subsections
 - MEDLINE (Updates) MEDLINE (Main Release 2008) MED2PUB
- Gene Dictionaries and Ontologies
- Nucleotide sequence databases
 - EMBL Patent DNA EMBL (Contig) EMBL (Contigs expanded)
 - EMBL (Annotated Cons) EMBL (Coding Sequences) EMBL ID/Accession Mapping EMBL MGA
 - IMGT/LIGM-DB IMGT/HLA IPD-KIR Genome Reviews
 - GR Genes RefSeq Genome LiveLists
 - Nucleotide sequence databases - subsections
 - EMBL (Updates) EMBL (Release) EMBL (Whole Genome Shotgun)
 - EMBL (Whole Genome Shotgun release) EMBL (Whole Genome Shotgun updates) EMBL (Contig release)
 - EMBL (Contig updates) EMBL (Contigs expanded release) EMBL (Contigs expanded updates)
 - EMBL (Annotated Cons release) EMBL (Annotated Cons updates) EMBL (Release, Deleted)
 - EMBL (Whole Genome Shotgun Masters) ENA Project RefSeq Genome (Release)
 - RefSeq Genome (Updates)
- Nucleotide related databases
- UniProt Universal Protein Resource
 - UniProtKB UniProtKB/Swiss-Prot UniProtKB/TrEMBL UniRef100 UniRef90
 - UniRef50 UniParc
- Other protein sequence databases
- Protein function, structure and interaction databases

选择SwissProt库，表示结果相关的所有蛋白

选择SwissProt库，表示结果相关的所有蛋白

最终链接结果

Reset

Query

found 7954 entries

Apply Options to:

selected results only

unselected results only

Result Options

Launch analysis tool:

Show tools relevant to these results:

Link to related information:

Save results:

Display Options

View results using:

Sort results by:

ascending

descending

Show results per page

- [UniProtKB/Swiss-Prot:1A01 GORGO](#)
- [UniProtKB/Swiss-Prot:1A01 HUMAN](#)
- [UniProtKB/Swiss-Prot:1A01 PANTR](#)
- [UniProtKB/Swiss-Prot:1A01 PONPY](#)
- [UniProtKB/Swiss-Prot:1A01 SAGOE](#)
- [UniProtKB/Swiss-Prot:1A02 GORGO](#)
- [UniProtKB/Swiss-Prot:1A02 HUMAN](#)
- [UniProtKB/Swiss-Prot:1A02 PANTR](#)
- [UniProtKB/Swiss-Prot:1A03 GORGO](#)
- [UniProtKB/Swiss-Prot:1A03 HUMAN](#)
- [UniProtKB/Swiss-Prot:1A03 PANTR](#)
- [UniProtKB/Swiss-Prot:1A04 GORGO](#)
- [UniProtKB/Swiss-Prot:1A04 PANTR](#)
- [UniProtKB/Swiss-Prot:1A11 HUMAN](#)
- [UniProtKB/Swiss-Prot:1A23 HUMAN](#)
- [UniProtKB/Swiss-Prot:1A24 HUMAN](#)
- [UniProtKB/Swiss-Prot:1A25 HUMAN](#)
- [UniProtKB/Swiss-Prot:1A26 HUMAN](#)
- [UniProtKB/Swiss-Prot:1A29 HUMAN](#)
- [UniProtKB/Swiss-Prot:1A30 HUMAN](#)
- [UniProtKB/Swiss-Prot:1A31 HUMAN](#)
- [UniProtKB/Swiss-Prot:1A32 HUMAN](#)
- [UniProtKB/Swiss-Prot:1A33 HUMAN](#)
- [UniProtKB/Swiss-Prot:1A34 HUMAN](#)
- [UniProtKB/Swiss-Prot:1A36 HUMAN](#)
- [UniProtKB/Swiss-Prot:1A43 HUMAN](#)
- [UniProtKB/Swiss-Prot:1A66 HUMAN](#)
- [UniProtKB/Swiss-Prot:1A68 HUMAN](#)
- [UniProtKB/Swiss-Prot:1A69 HUMAN](#)
- [UniProtKB/Swiss-Prot:1A74 HUMAN](#)

go to entries in page [[1](#)] .. [2](#) .. [3](#) .. [4](#) .. [5](#) .. [6](#) .. [7](#) .. [8](#) .. [9](#) .. [10](#) .. [11](#) ..]

所得结果为：
人乙酰胆碱受体蛋白
相关家族中的所有蛋白

链接类型

Link Options

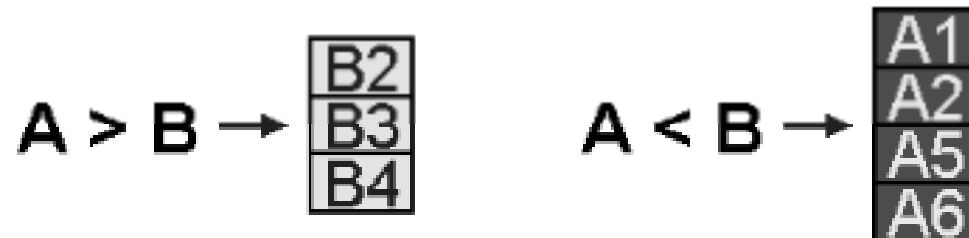
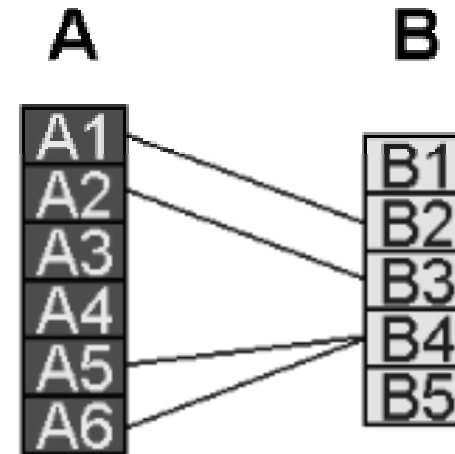
Select the **datbanks** you want to search for **related information**

Find **related entries**

Refine Query - **show only results with related entries**

Show only results without related entries

||| → **Search**



设A为前一次查询的结果，B为所链接的库。

于是三种方式的结果分别为：

选项1： B2, B3, B4 （相当于 $A > B$ ）

选项2： A1, A2, A5, A6 （相当于 $A < B$ ）

选项3： A3, A4 （相当于 $A \setminus (A < B)$ ）

结果视图(View)

- 结果视图是结果页面的显示方式
- 可使用**SRS**系统默认视图
- 也可自定义视图（显示哪些特定的字段列）

通常的查询结果视图

Quick Search Library Page Query Form Tools Results Projects Views Databanks HELP Job Status

Reset Query {{{[UNIPROT UNIPARC]-alltext:acetylcholine*} & [{UN: next found 1132 entries

Apply Options to:

selected results only
 unselected results only

Result Options

Launch analysis tool:
NCBI BLASTP Launch

Show tools relevant to these results: Tools

Link to related information: Link

Save results: Save

Display Options

View results using: **UniprotView**

Sort results by:
unsorted
 ascending
 descending

Show 30 results per page

Printer friendly view

Apply Display Options

UniProtKB	Accession	UniSave	Description	GeneName	Species	Keywords	SeqLength
<input type="checkbox"/> UniProtKB:A4 HUMAN	P05067	P05067	Amyloid beta A4 protein precursor (Alzheimer disease amyloid protein) (ABPP) (APP1) (APP) (PreA4) (Cerebral vascular amyloid peptide) (CVAP) (Protease nexin-II) (PN-II) [Contains: Soluble APP-alpha (S-APP- alpha); Soluble APP-beta (S-APP-beta); C99; Beta-amyloid protein 42 (Beta-APP42); Beta-amyloid protein 40 (Beta-APP40); C83; P3(42); P3(40); Gamma-CTF(59) (Gamma-secretase C-terminal fragment 59) (Amyloid intracellular domain 59) (AICD-59) (AID(59)); Gamma-CTF(57) (Gamma-secretase C-terminal fragment 57) (Amyloid intracellular domain 57) (AICD-57) (AID(57)); Gamma-CTF(50) (Gamma-secretase C-terminal fragment 50) (Amyloid intracellular domain 50) (AICD-50) (AID(50)); C31].	APP	Homo sapiens (Human).	3D-structure Alternative splicing Alzheimer disease Amyloid Apoptosis Cell adhesion Coated pit Copper Direct protein sequencing Disease mutation Endocytosis Glycoprotein Heparin-binding Iron Membrane Metal-binding Notch signaling pathway Phosphoprotein Polymorphism Protease inhibitor Proteoglycan Serine protease inhibitor Signal Transmembrane Zinc	770
<input type="checkbox"/> UniProtKB:ACH10 CHICK				CHRNA10		Calcium Calcium channel Calcium	

标准查询界面中直接定制视图

Search Options

Combine search terms
with:

Use wildcards

Get results of type:

Fields you can search

In a single field, you can separate multiple values by: &, | or !

<input type="text" value="Description"/>	<input type="text" value="acetylcholine receptor"/>
<input type="text" value="Species"/>	<input type="text" value="human"/>
<input type="text" value="AllText"/>	<input type="text"/>
<input type="text" value="AllText"/>	<input type="text"/>

Result Display Options

View results using:

or

Create a view

Show
results per page

Create a view

Select the fields you want displayed in your view and choose the format

Choose 1 or more fields:

- ID
- EntryName
- Data Class
- AccessionNumber
- Primary Accession Number
- Sequence Version
- Creation Date

Display As: Table List

Sequence Format:

Tips

To do more advanced

按住<Ctrl>或<Shift>键进行多选

采用定制视图的结果页面

<u>UniProtKB/Swiss-Prot</u>	<u>ID</u>	<u>EntryName</u>	<u>Description</u>	<u>Organism</u>
<input type="checkbox"/> UniProtKB/Swiss-Prot:ACH10 HUMAN	ACH10_HUMAN	ACH10_HUMAN	Neuronal acetylcholine receptor subunit alpha-10 precursor (Nicotinic acetylcholine receptor subunit alpha 10) (NACHR alpha 10).	Homo sapiens (Human). Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Primates; Haplorrhini; Catarrhini; Hominidae; Homo.
<input type="checkbox"/> UniProtKB/Swiss-Prot:ACHA2 HUMAN	ACHA2_HUMAN	ACHA2_HUMAN	Neuronal acetylcholine receptor subunit alpha-2 precursor.	Homo sapiens (Human). Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria;

对定制结果视图的管理

Quick Search Library Page Query Form Tools Results Projects **Views** Databanks HELP

Reset

Create View Options

View name:

Display results as

table

list

Databanks to define a view for	Databanks to be linked to
Show fields from: <input type="radio"/> All fields in databanks <input checked="" type="radio"/> Common fields only	
MEDLINE Taxonomy OMIM OMIM Morbid Map Patent Abstracts Karyn's Genomes ----- MEDLINE (Updates) MEDLINE (Main Release 2008) MED2PUB ----- UNILIB LOCUSLINK LocusLink Refseq fields LocusLink Refseq Model fields	MEDLINE Taxonomy OMIM OMIM Morbid Map Patent Abstracts Karyn's Genomes ----- MEDLINE (Updates) MEDLINE (Main Release 2008) MED2PUB ----- UNILIB LOCUSLINK LocusLink Refseq fields LocusLink Refseq Model fields

Create New View

Delete View: Delete View

SRS数据分析(以ClustalW为例)

Reset

Query

Apply Options to:

- selected results only
 unselected results only

Result Options

Launch analysis tool:

ClustalW

Show tools relevant to these results:

Link to related information:

Save results:

Display Options

View results using:

SwissView

Sort results by:

unsorted

- ascending
 descending

Show 30 results

per page

UniProtKB/Swiss-Prot	Accession	Description	GeneName	Organism	Authors
<input type="checkbox"/> UniProtKB/Swiss-Prot:ACH10 CHICK	Q918C7	Neuronal acetylcholine receptor subunit alpha-10 precursor (Nicotinic acetylcholine receptor subunit alpha 10) (NACHR alpha 10) (Alpha 10 nAChR).	CHRNA10	Gallus gallus Chicken Eukaryota Metazoa Chordata Craniata Vertebrata Euteleostomi Archosauria Dinosauria Saurischia Theropoda Coelurosauria Aves Neognathae Galliformes Phasianidae Phasianinae Gallus	Barabino,B. Boulter,J. Alliod,C. Ballivet,M.
<input type="checkbox"/> UniProtKB/Swiss-Prot:ACH8 CAEBR	Q60S81	Neuronal acetylcholine receptor subunit eat-2 precursor.	eat-2	Caenorhabditis briggsae Eukaryota Metazoa Nematoda Chromadorea Rhabditida Rhabditoidea Rhabditidae Peloderinae Caenorhabditis	Stein,L.D. Bao,Z Blasiar,D. Blumenthal,T. Brent,M.R. Chen,N. Chinwalla,A. Clarke,L. Clee,C. Coghlan,A. Coulson,A. D'Eustachio,P. Fitch,D.H.A. Fulton,L.A. Fulton,R.E. Griffiths-Jones,S. Harris,T.W. Hillier,L.W.

选择分析工具参数

Reset

Job Options

Note: this tool is run by LSF batch queuing system.

Name of the queue is **extsrv_interactive -R 'msa order[p_clustalw:r15s:pg] span[hosts=1]' -L /bin/sh(batch)**.

Parameter set options

Save current parameter set

as:

ClustalW

More Info...

Job name:

Launch

Input data from entries:

```
SWISSPROT:ACH10_CHICK
SWISSPROT:ACH8_CAEBR
SWISSPROT:ACHA_CRORS
SWISSPROT:ACHA_ERICO
SWISSPROT:ACHA_FELCA
SWISSPROT:ACHA_HERIC
SWISSPROT:ACHA_NAJNA
SWISSPROT:ACHA_NATTE
```

General Options

Order of sequences in alignment

Algorithm for the pairwise alignments guide tree

FAST SLOW

Multiple Alignment

Use substitution matrix

Gap opening penalty:

Gap extension penalty:

Gap separation distance:

Delay Divergent sequences:

No end gap penalty

Use residue specific penalties

Use hydrophilic penalties

For Fast Pairwise Alignments

Word size (k-tuple)

Number of best diagonals:

Window around best diagonals:

Gap penalty:

Score type to use

For Slow Pairwise Alignments

Use substitution matrix

Pair gap opening penalty:

Pair gap extension penalty (0.0-10.0):

执行数据分析和查看结果

Tools Results Projects Views Databanks **HELP**

Tool was submitted to Queue:extsrv_interactive -R 'msa order[p_clustalw:r15s:pg] span[hosts=1]' -L /bin/sh(batch).
Tool command:
`/ebi/extserv/bin/clustalw/clustalw -infile='./temp_clustal_1_in tmp.s' -outorder=I`

Use *Batch job status page* to view [the results](#)

List of Batch Jobs

Job Name	Status	Start Date	Results from	Result Set	Queue Name
<input type="checkbox"/> temp clustal 1	✓	18-Jun-2008 22:55	CLUSTALW	-	extsrv_interactive -R 'msa order[p_clustalw:r15s:pg] span[hosts=1]' -L /bin/sh(batch)

File Name: ./temp_job1.clustalw

Content of the tool output file:

```
! Sequence: SWISSPROT:ACH10_CHICK Neuronal acetylcholine receptor subunit alpha-10 p...
! Sequence: SWISSPROT:ACH8_CAEBR Neuronal acetylcholine receptor subunit eat-2 prec...
! Sequence: SWISSPROT:ACHA_CRORS Acetylcholine receptor subunit alpha (Fragment).
! Sequence: SWISSPROT:ACHA_ERICO Acetylcholine receptor subunit alpha (Fragment).
! Sequence: SWISSPROT:ACHA_FELCA Acetylcholine receptor subunit alpha (Fragment).
! Sequence: SWISSPROT:ACHA_HERIC Acetylcholine receptor subunit alpha (Fragment).
! Sequence: SWISSPROT:ACHA_NAJNA Acetylcholine receptor subunit alpha (Fragment).
! Sequence: SWISSPROT:ACHA_NATTE Acetylcholine receptor subunit alpha (Fragment).
! Sequence: SWISSPROT:ACHB_CHICK Acetylcholine receptor subunit beta precursor (Fra...
! Sequence: SWISSPROT:ACHD_CHICK Acetylcholine receptor subunit delta precursor.
! Sequence: SWISSPROT:ACHG_CHICK Acetylcholine receptor subunit gamma precursor.
! Sequence: SWISSPROT:ACM2_CHICK Muscarinic acetylcholine receptor M2.
! Sequence: SWISSPROT:ACM2_PANTR Muscarinic acetylcholine receptor M2 (Fragment).
! Sequence: SWISSPROT:ACM3_GORGO Muscarinic acetylcholine receptor M3.
! Sequence: SWISSPROT:ACM3_PANTR Muscarinic acetylcholine receptor M3.
! Sequence: SWISSPROT:ACM3_PIG Muscarinic acetylcholine receptor M3.
! Sequence: SWISSPROT:ACM4_XENLA Muscarinic acetylcholine receptor M4.
! Sequence: SWISSPROT:ACR5_CAEEL Acetylcholine receptor subunit alpha-type acr-5 pr...
! Sequence: SWISSPROT:CUP4_CAEBR Acetylcholine receptor-like protein cup-4 precusso...
CLUSTAL W (1.83) multiple sequence alignment
```

```
ACH10_CHICK -----
ACH8_CAEBR -----
ACHA_CRORS -----
ACHA_ERICO -----
ACHA_FELCA -----
ACHA_HERIC -----
ACHA_NAJNA -----
ACHA_NATTE -----
ACHB_CHICK -----
ACHD_CHICK -----
ACHG_CHICK -----
ACM2_CHICK -----
ACM2_PANTR -----
ACM3_GORGO -----
ACM3_PANTR -----
ACM3_PIG -----
ACM4_XENLA -----
ACR5_CAEEL MLPNIILILLIRYCSCGAGSRVYEKYGKQVQLSPATTSSYREWYDSNREHSTRNNTNVDD
CUP4_CAEBR -----MR
```

```
ACH10_CHICK -----MGSAPLPACLLALSLAGTVLAPGCGAAQGRLAHKLLHDLFANYSSA
```

SRS项目

- 项目是指一组查询、分析等操作的总和
- 在没有登录(创建项目)时进行查询，**SRS**会自动创建一个临时项目，并将查询放入其中
- 临时项目在用户离开**SRS**网站时会被自动清除
- 创建(非临时)项目可以将查询操作永久保存，可以在不同时间、不同终端上来继续操作
- 一些分析工具的配置参数，也能够被保存到项目中来

创建项目

The screenshot shows the SRS website interface. At the top, there are navigation tabs: Quick Search, Library Page, Query Form, Tools, Results, Projects, Views, Databanks, and HE. Below the tabs, the SRS logo is visible. A red circle highlights the link "Start a Permanent Project" in the left sidebar. The main content area features a "Quick Text Search" section with a dropdown menu set to "Nucleotides" and a text input field containing "Enter Text Here". Below this, it says "Searches Databanks: EMBL Nucleotides" and has a "Search" button. There is also a "News and Announcements" section with a "Search Tips" link. A "Tips" section on the left provides information on how to use SRS, including links to the Help Center and SRS@EBI FAQ.

The screenshot shows a browser dialog box titled "The page at http://srs.ebi.ac.uk says:". The dialog contains a question mark icon and the text "Enter your SRS user name:". Below this, there is a text input field containing the username "yanlinlin82". At the bottom of the dialog, there are two buttons: "Cancel" and "OK".

SRS项目管理界面

Quick Search Library Page Query Form Tools Results **Projects** Views Databanks **HELP**

Reset

Permanent Project

SRS account: yanlinlin82
Project: project7

project7 Options

Save to desktop: **Save**

Rename project:
project7 **Rename**

Delete project: **Delete**

Other Projects

Create a project:
New Project

Open from desktop:
Browse... **Open**

Switch projects:
project7 **Switch**

Contents of project7

Queries		Views
Name	Query Expression	Name
<input type="checkbox"/> Q3	[CLUSTALW-JobName:temp_job1]	<input type="checkbox"/> SWISSPROT
<input type="checkbox"/> Q2	(((swissprot-Description:acetylcholine*) & [swissprot-Description:receptor*]) [swissprot-Description:acetylcholine receptor*]) & [swissprot-Species:human*])	
<input type="checkbox"/> Q1	(((UNIPROT UNIPARC)-alltext:acetylcholine*) & [(UNIPROT UNIPARC)-alltext:receptor*]) [(UNIPROT UNIPARC)-alltext:acetylcholine receptor*])	

所有查询、分析的结果，以及创建的视图，都能在这里列举出来

本次内容总结

- **SRS**查询（快速、标准、扩展）
- **SRS**链接(Link)功能
- 对查询结果的分析
- **SRS**项目的使用

这些都只是**SRS**的基本功能。

还有更多的功能尚待进一步发掘使用。

进一步发掘方向

- 可进一步了解**SRS**查询语言，它能帮助我们更准确地查找到所需数据
- 多了解**SRS**中包含的各个数据库的含义，了解这些数据库之间链接的含义
- 尝试**SRS**自带的各种分析工具
- 还可以使用其他网站的**SRS**系统（因为各个网站所关联的库、包含的工具，以及数据库更新速度都有所不同）
-

展望SRS

- **SRS**最早开发目的是一个以序列提取为目的的工具
- 在整合了各种数据库和工具之后，如今已逐步发展成为一个全面的生物信息研究平台
- **SRS**作为Biowisdom公司的一个重要产品，其功能肯定也会更进一步得到改进和提升

SRS最新情况

截至2008年6月21日:

- 关联了1119个不同的数据库
- 集成了181个不同的数据分析工具
- 最新版本8.3, 新增功能:
 - 查询的提醒功能
 - 为数据添加标注(annotation)
 - 定制 workflow(Workflow)

(信息来自: <http://www.biowisdom.com/>)

谢谢！