生物情報工学 BioInformatics



国際塩基配列データベース

- DNAのデータベース
 - GenBank (アメリカ: National Center for Biotechnology Information, NCBIが運営)
 - EMBL (ヨーロッパ:欧州生命情報学研究所が運営)
 - DDBJ (日本:国立遺伝研内の日本DNAデータバンクが 運営)
 - RefSeq (重複のない、包括的データーベース。NCBIが作 成)
- 『DDBJ/EMBL/GenBank 国際塩基配列データベース (INSDC)』とは、全世界の研究者が実験によって決定した DNA (または RNA) の塩基配列データを、DDBJ/EMBL/ GenBank 国際 DNA データバンクが、三者間で定めたデー タ構築規範に沿って収集・編集し、コンピュータファイルの かたちで提供するもの

配列・立体構造データベースのデータ量の増加



http://www.genome.jp/ja/



■ ポータルサイト(統合データベース)

 GenomeNET(京都大学化学研究所バイオインフォマティク スセンターにより運営、後述)

http://www.genome.jp

- NCBIデータベース

National Center for Biotechnology Informationの提供する膨大なリソース)

http://www.ncbi.nlm.nih.gov/sites/gquery

ゲノムネットとは

- ゲノムネットは、ゲノム情報を基盤とした新しい生命科学研究と創薬・医療・環境保全への応用を推進するために、京都大学化学研究所バイオインフォマティクスセンターが提供するインターネットサービス。
- 1991年9月に文部省ヒトゲノムプログラムの一環として、京都 大学化学研究所で開発を開始。
- 当初は欧米の分子生物学データベースを我が国でも統合利用できる環境作りに主眼。<u>DBGET</u>等の開発。
- 1995年に生命システム情報統合データベース <u>KEGG</u>の構築 を開始し、KEGG の発展とともにゲノムネットは世界有数のバ イオ情報サービスへと発展。
- (ゲノムネット HPより引用)

ゲノムネットにアクセスする

KAAS - KEGG自動アノテーションサーバー

http://www.genome.jp/ja/

KEGG の概要

KEGG Home

Release notes Current statistics Plea from KEGG

KEGG Database

KEGG の概要 Searching KEGG KEGG mapping Color codes

KEGG Objects

Pathway maps Brite hierarchies

KEGG Software KeqTools

KEGG API KGML

KEGG FTP 利用申し込み

ゲノムネット

DBGET/LinkDB

Feedback

KEGG の概要

1. ゲノムから生命システムへ

KEGG はゲノムや分子レベルの情報から細胞、個体、エコシステムといった生命システムの機能 や有用性を理解するためのリソースです。生命システムのコンピュータ表現として、遺伝子やタン パク質(ゲノム情報)と化合物など(ケミカル情報)の分子部品の情報を、分子間の相互作用・ 反応・関係ネットワーク(システム情報)の知識で統合した生命システム情報統合データベース です。さらに生体システムのゆらぎとして疾患・医薬品情報(ヘルス情報)も統合されています。



KEGG は 1995年より金久ラボラトリーズで開発されており、今ではゲノムと高次生命システム をつなぐ知識のレファレンスとして、とくにシークエンシングやその他のハイスループット実験技 術がもたらす大量データの統合処理・解釈に広く利用されています。

Kanehisa Labs

http://www.genome.jp/kegg/kegg1a_ja.html

KEGG の概要

- <u>KEGG</u>は
- 生命システムをコンピュータの中に再現した「生命システム情報統合 データベース」
 - 遺伝子・タンパク質に関するゲノム情報(KEGG GENES)、
 - 生体内外の化学物質と生体内反応に関するケミカル情報(KEGG LIGAND)、
 - 分子間相互作用・反応ネットワークに関するシステム情報(KEGG PATHWAY)、
 - 分子・細胞・個体に関する様々なオブジェクトの階層と関係(KEGG BRITE)などから構成
 - ゲノム情報と疾患との関係、医薬品の作用などに関するヘルス情報
 報

遺伝子データベースをのぞいてみよう

- まずはポータルサイトから
- 今日紹介するのは ゲノムネットのDBGET Search
- http://www.genome.jp/dbget/



DBGET is an integrated database retrieval system for major biological databases, which are classified into five categories:

Category		comm	nands	Pomark
		bfind	blink	Reindik
1. KEGG databases in DBGET	yes	yes	yes	Mirrored at CenomeNet
2. Other DBGET databases	yes	yes	yes	Initioned at Genomenter
3. Searchable databases on the Web	no	yes	yes	
4. Link-only databases on the Web	no	no	yes	Used as Web resources
5. PubMed database	yes	no	yes	

Databases in the third category are integrated for keyword seach, but the actual data are to be obtained from the original sites. Databases in the fourth category are available only in the LinkDB system. PubMed is a link-only database, but the bget page is generated using the NCBI service in order to better integrate with KEGG and other DBGET databases. DBGET search targets are described on this page.

pUC18のDNA情報を調べる(1)

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pUC18のDNA情報を調べる(2)

cloning vector
GenomeNet
Search INSDC \$ for pUC18 Go Clear
Database: INSDC - Search term: pUC18 (Total 76 hits)
KM080141 [GenBank] [EMBL] [DDBJ] [KM080141] Dendrocincla fuliginosa voucher MPEGPUC185 cytochrome b (CYTB) gene, partial cds; mitochondrial.
KM080696 [GenBank] [EMBL] [DDBJ] [KM080696] Microcerculus marginatus voucher MPEGPUC182 cytochrome b (CYTB) gene, complete cds; mitochondrial.
KM080858 [GenBank] [EMBL] [DDBJ] [KM080858] Myrmotherula axillaris voucher PUC184 cytochrome b (CYTB) gene, partial cds; mitochondrial. EF682133 [GenBank] [EMBL] [DDBJ]
[EF682133] Klebsiella pneumoniae plasmid pUC18-10 putative transposase, QnrB1 (qnrB1), and short-chain dehydrogenase/reductase genes, complete cds.
[EU142944] [GenBank] [EMBL] [DDBJ] [EU142944] Acinetobacter haemolyticus strain TA34 plasmid pUPI190 clone pUC18.38 putative tellerium resistance protein, partial sequence.
EU142945 [GenBank] [EMBL] [DDBJ] [EU142945] Acinetobacter haemolyticus strain TA34 plasmid pUPI190 clone pUC18.39 putative tellerium resistance protein, partial sequence
EU142946 [GenBank] [EMBL] [DDBJ] [EU142946] Acinetobacter haemolyticus strain TA34 plasmid pUPI190 clone pUC18.42 putative tellerium
resistance protein, partial sequence. Y11480 [GenBank] [EMBL] [DDBJ] [Y11480] S.mansoni male W2 repetitive sequence, clone pUC18-37.
Y11481 [GenBank] [EMBL] [DDBJ] [Y11481] S.mansoni female W2 repetitive sequence, clone pUC18-116B.
[AJ427483] [GenBank] [EMBL] [DDBJ] [AJ427483] Farfantepenaeus notialis microsatellite DNA, clone pUC18-72. A01519 [GenBank] [EMBL] [DDBJ]
[A01519] Nucleotide sequence of multilinker (modified from pUC18). A02710 [GenBank] [EMBL] [DDBJ] [A02710] pUC18 DNA sequence
A09966 [GenBank] [EMBL] [DDBJ] [A09966] Synthetic E.acervulina (plasmid pUC18/pEa1a) mRNA for antigen.
A23654 [GenBank] [EMBL] [DDBJ] [A23654] pUC18 universal primer region complementary primer. E12615 [GenBank] [EMBL] [DDBJ]
[E12615] Nucleotide sequence of PUC18. E12818 [GenBank] [EMBL] [DDBJ]
E12819 [GenBank] [EMBL] [DDBJ] [E12819] PCR primer for amplifying plasmid pUC18.

pUC18のDNA情報を調べる(3)

Go

Clear

GenomeNet

Search NSDC for puc18 cloning vector Database: INSDC - Search term: puc18 cloning vector (Total 28 hits) AJ810102 [GenBank] [EMBL] [DDBJ] [AJ810102] Cloning vector pUC18 Mbol fragment, clone CFD01H08. AJ810105 [GenBank] [EMBL] [DDBJ] [AJ810105] Cloning vector pUC18 Mbol fragment, clone CFD10C02. AJ810111 [GenBank] [EMBL] [DDBJ] [AJ810111] Cloning vector pUC18 Mbol fragment, clone CFD14D10. AJ810112 [GenBank] [EMBL] [DDBJ] [AJ810112] Cloning vector pUC18 Mbol fragment, clone CFD14F08. AY599226 [GenBank] [EMBL] [DDBJ] [AY599226] Cloning vector pUC18-mini-Tn7, complete sequence. AY599227 [GenBank] [EMBL] [DDBJ] [AY599227] Cloning vector pUC18-mini-Tn7T, complete sequence. AY599228 [GenBank] [EMBL] [DDBJ] [AY599228] Cloning vector pUC18-R6K-mini-Tn7T, complete sequence. AY599229 [GenBank] [EMBL] [DDBJ] [AY599229] Cloning vector pUC18Pv-mini-Tn7T, complete sequence. AY599230 [GenBank] [EMBL] [DDBJ] [AY599230] Cloning vector pUC18T-mini-Tn7T, complete sequence. AY599231 [GenBank] [EMBL] [DDBJ] [AY599231] Cloning vector pUC18-mini-Tn7T-Gm, complete sequence. AY599232 [GenBank] [EMBL] [DDBJ]

[AY737006] Cloning vector pUC18-mini-Tn7T-Tp-Gateway, complete sequence. AY884832 [GenBank] [EMBL] [DDBJ] [AY884832] Cloning and suicide delivery vector pUC18R6KT, complete sequence. AY884834 [GenBank] [EMBL] [DDBJ] [AY884834] Cloning and Tn7 delivery vector pUC18R6K-mini-Tn7T-Km, complete sequence. DQ153108 [GenBank] [EMBL] [DDBJ] [DQ153108] Cloning vector pUC18R6K-mini-Tn7T-Gm, complete sequence. DQ493875 [GenBank] [EMBL] [DDBJ] [DQ493875] Cloning vector pUC18T-mini-Tn7T-Tp, complete sequence. DQ493876 [GenBank] [EMBL] [DDBJ] [DQ493876] Cloning vector pUC18T-mini-Tn7T-Zeo, complete sequence. SYNPUC18V [GenBank] [EMBL] [DDBJ] [L08752] pUC18 cloning vector. SYNPUC18CV [GenBank] [EMBL] [DDBJ] [L09136] pUC18c cloning vector (beta-galactosidase mRNA on complementary strand). X70275 [GenBank] [EMBL] [DDBJ] [X70275] pUC18 and phage f1 derivative cloning vector.

DBGET integrated database retrieval system

pUC18のDNA情報

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Disconserved of appendix and provide datage Taxonomy JOURNAL Gene 26 (1), 101-106 (1983) PUBMED <u>6323249</u> REFERENCE 2 (bases 1 to 2686) Title AUTHORS Gilbert,W. TITLE Obtained from VecBase 3.0 JOURNAL Unpublished (1991) COMMENT These data and their annotation were supplied to GenBank by Will Gilbert under the auspices of the GenBank Currator Program. pUC18 - Implication of the publication were supplied to GenBank by Will Consing vector #TYPE DNA CIRCULAR ENTRY PUC18 #TYPE DNA CIRCULAR TITLE pUC18 - Cloning vector Se DATE 17-SEP-1986 #sequence 16-DEC-1986 ACCESSION VB0025 SOURCE artificial COLLECTION ATCC 37253 REFERENCE #number 1 #authors Norrander J., Kempe T., Messing J. #journal Gene (1983) 26: 101-106 REFERENCE #number 2 #authors Pouwels P.H., Enger-Valk B.E., Brammar W.J.	TTTLE	Construction of improved M13 vectors using	PubMed	
JOURNAL Gene 26 (1), 101-106 (1983) PUDMED 63232249 REFERENCE 2 (bases 1 to 2686) AUTHORS Gilbert,W. TITLE Obtained from VecBase 3.0 JOURNAL Unpublished (1991) COMMENT These data and their annotation were supplied to GenBank by Will Gilbert under the auspices of the GenBank Currator Program. pUC18 - Cloning vector ENTRY PUC18 #TYPE DNA CIRCULAR TITLE pUC18 - Cloning vector DATE 17-SEP-1986 #sequence 16-DEC-1986 ACCESSION VB0025 SOURCE artificial COLLECTION ATCC 37253 REFERENCE #number 1 #authors Norrander J., Kempe T., Messing J. #journal Gene (1983) 26: 101-106 REFERENCE #number 2 #authors Pouwels P.H., Enger-Valk B.E., Brammar W.J.		oligodeoxynucleotide-directed mutagenesis	Taxonomy	
PUBMED 6323249 REFERENCE 2 (bases 1 to 2686) AUTHORS Gilbert,W. TITLE Obtained from VecBase 3.0 JOURNAL Unpublished (1991) COMMENT These data and their annotation were supplied to GenBank by Will Gilbert under the auspices of the GenBank Currator Program. pUC18 - Cloning vector ENTRY PUC18 #TYPE DNA CIRCULAR TITLE pUC18 - Cloning vector DATE 17-SEP-1986 #sequence 16-DEC-1986 ACCESSION VB0025 SOURCE artificial COLLECTION ATCC 37253 REFERENCE #number 1 #authors Norrander J., Kempe T., Messing J. #journal Gene (1983) 26: 101-106 REFERENCE #number 2 #authors Pouwels P.H., Enger-Valk B.E., Brammar W.J.	JOURNAL	Gene 26 (1), 101-106 (1983)		
REFERENCE 2 (bases 1 to 2686) AUTHORS Gilbert,W. TITLE Obtained from VecBase 3.0 JOURNAL Unpublished (1991) COMMENT These data and their annotation were supplied to GenBank by Will Gilbert under the auspices of the GenBank Currator Program. pUC18 - Cloning vector ENTRY PUC18 #TYPE DNA CIRCULAR TITLE pUC18 - Cloning vector DATE 17-SEP-1986 #sequence 16-DEC-1986 ACCESSION VB0025 SOURCE artificial COLLECTION ATCC 37253 REFERENCE #number 1 #authors Norrander J., Kempe T., Messing J. #journal Gene (1983) 26: 101-106 REFERENCE #number 2 #authors Pouwels P.H., Enger-Valk B.E., Brammar W.J.	PUBMED	<u>6323249</u>		
AUTHORS Glibert, W. Turn O TITLE Obtained from VecBase 3.0 JOURNAL Unpublished (1991)	REFERENCE	2 (bases 1 to 2686)	Recent activity	•
JOURNAL Unpublished (1991) COMMENT These data and their annotation were supplied to GenBank by Will Gilbert under the auspices of the GenBank Currator Program. pUC18 - Cloning vector ENTRY PUC18 #TYPE DNA CIRCULAR TITLE pUC18 - Cloning vector DATE 17-SEP-1986 #sequence 16-DEC-1986 ACCESSION VB0025 SOURCE artificial COLLECTION ATCC 37253 REFERENCE #number 1 #authors Norrander J., Kempe T., Messing J. #journal Gene (1983) 26: 101-106 REFERENCE #number 2 #authors Pouwels P.H., Enger-Valk B.E., Brammar W.J.	AUTHORS	Oltained from VecBase 3.0		Turn Off Clear
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Gilbert under the auspices of the GenBank Currator Program. pUC18 - Cloning vector ENTRY PUC18 #TYPE DNA CIRCULAR TITLE pUC18 - Cloning vector DATE 17-SEP-1986 #sequence 16-DEC-1986 ACCESSION VB0025 SOURCE artificial COLLECTION ATCC 37253 REFERENCE #number 1 #authors Norrander J., Kempe T., Messing J. #journal Gene (1983) 26: 101-106 REFERENCE #number 2 #authors Pouwels P.H., Enger-Valk B.E., Brammar W.J.	COMMENT	These data and their annotation were supplied to GenBank by Will	B .	Nucleotide
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ENTRY PUC18 #TYPE DNA CIRCULAR TITLE pUC18 - Cloning vector DATE 17-SEP-1986 #sequence 16-DEC-1986 ACCESSION VB0025 SOURCE artificial COLLECTION ATCC 37253 REFERENCE #number 1 #authors Norrander J., Kempe T., Messing J. #journal Gene (1983) 26: 101-106 REFERENCE #number 2 #authors Pouwels P.H., Enger-Valk B.E., Brammar W.J.		Cloning vector		See more
TITLE pUC18 - Cloning vector DATE 17-SEP-1986 #sequence 16-DEC-1986 ACCESSION VB0025 SOURCE artificial COLLECTION ATCC 37253 REFERENCE #number 1 #authors Norrander J., Kempe T., Messing J. #journal Gene (1983) 26: 101-106 REFERENCE #number 2 #authors Pouwels P.H., Enger-Valk B.E., Brammar W.J.		ENTRY PUC18 #TYPE DNA CIRCULAR		
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ACCESSION VB0025 SOURCE artificial COLLECTION ATCC 37253 REFERENCE #number 1 #authors Norrander J., Kempe T., Messing J. #journal Gene (1983) 26: 101-106 REFERENCE #number 2 #authors Pouwels P.H., Enger-Valk B.E., Brammar W.J.		#sequence 16-DEC-1986		
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<pre>#number 1 #authors Norrander J., Kempe T., Messing J. #journal Gene (1983) 26: 101-106 REFERENCE #number 2 #authors Pouwels P.H., Enger-Valk B.E., Brammar W.J.</pre>		REFERENCE		
<pre>#authors Norrander J., Kempe T., Messing J. #journal Gene (1983) 26: 101-106 REFERENCE #number 2 #authors Pouwels P.H., Enger-Valk B.E., Brammar W.J.</pre>		#number 1		
REFERENCE #number 2 #authors Pouwels P.H., Enger-Valk B.E., Brammar W.J.		#authors Norrander J., Kempe T., Messing J. #journal Gene (1983) 26: 101-106		
#number 2 #authors Pouwels P.H., Enger-Valk B.E., Brammar W.J.		REFERENCE		
#authors Pouwels P.H., Enger-Valk B.E., Brammar W.J.		#number 2		
		#authors Pouwels P.H., Enger-Valk B.E., Brammar W.J.		
テキスト保存しておく		エキス	ト1天 イ子し ()	5

NCBI database

- PubMed(先週学習した)
- Nucleotide Database (GenBank)
- Protein Database
- Genome Database
- Taxonomy Database(分類学情報デー タベース)
- SNP(一塩基多型)データベース
 など

NCBI databaseにアクセスする

http://www.ncbi.nlm.nih.gov

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Search NCBI databases			Help
			Search
Literature		Genes	
Books	books and reports	EST	expressed sequence tag sequences
MeSH	ontology used for PubMed indexing	Gene	collected information about gene loci
NLM Catalog	books, journals and more in the NLM Collections	GEO DataSets	functional genomics studies
PubMed	scientific & medical abstracts/citations	GEO Profiles	gene expression and molecular abundance profiles
PubMed Central	full-text journal articles	HomoloGene	homologous gene sets for selected organisms
Health		PopSet	sequence sets from phylogenetic and population studies
ClinVar	human variations of clinical significance	UniGene	clusters of expressed transcripts
dbGaP	renotyne/nhenotyne interaction studies	Brotaina	
GTR	genetic testing registry	Proteins	
MedGen	medical genetics literature and links	Conserved Domains	conserved protein domains
OMIM	online mendelian inheritance in man	Protein	protein sequences
PubMed Health	clinical effectiveness, disease and drug reports	Protein Clusters	sequence similarity-based protein clusters
		Structure	experimentally-determined biomolecular structures
Genomes		- Chemicals	
Assembly	genomic assembly information		
BioProject	biological projects providing data to NCBI	BioSystems	molecular pathways with links to genes, proteins and
BioSample	descriptions of biological source materials		chemicals
Clone	genomic and cDNA clones	PubChem BioAssay	bloactivity screening studies
dbVar	genome structural variation studies	PubChem Compound	chemical information with structures, information and links
Epigenomics	epigenomic studies and display tools	PubChem Substance	deposited substance and chemical information
Genome	genome sequencing projects by organism		
GSS	genome survey sequences		
Nucleotide	DNA and RNA sequences		
Probe	sequence-based probes and primers		

short genetic variations

SNP



- ovalbuminのDNAデータを入手する。
- 卵白の主要タンパク質。
- NCBI databaseのサーチボックスに入力、検索。

検索結果1



catalog

検索結果2 (PubMed)

SINCER Resources		Sign in to NOBI
Publiced.gov US National Library of Medicine National Institutes of Health	PubMed Image: Ovalburnin Create RSS Create alert Advanced	Search Help
Article types Clinical Trial	Summary - 20 per page - Sort by Most Recent - Send to: -	Filters: Manage Filters
Review Customize Text availability Abstract Free full text Full text	See 54 articles about Serpinb2 (OVALBUMIN) gene function See also: <u>Serpinb2 (OVALBUMIN) serine (or cysteine) peptidase inhibitor, clade B, member 2</u> in the Gene database ovalbumin in <u>Mus musculus (3)</u> <u>All 54 Gene records</u>	New feature Try the new Display Settings option - Sort by Relevance
PubMed Commons Reader comments Trending articles	Search results Items: 1 to 20 of 25013 << First < Prev	Results by year
Publication dates 5 years 10 years Custom range	 Short-term hyperprolactinemia decreases allergic inflammatory response of the lungs. Ochoa-Amaya JE, Hamasato EK, Tobaruela CN, Queiroz-Hazarbassanov N, Anselmo Franci JA, Palermo-Neto J, Greiffo FR, de Britto AA, Vieira RP, Ligeiro de Oliveira AP, Massoco Salles- Gomes CO, Felicio LF. 	Download CSV
Species Humans Other Animals	Life Sci. 2015 Oct 15. pii: S0024-3205(15)30042-4. doi: 10.1016/j.lfs.2015.10.016. [Epub ahead of print] PMID: 26477293 Similar articles	Related searches ovalbumin mice asthma ovalbumin ovalbumin ovalbumin
Clear all Show additional filters	 Mouse Invariant Monoclonal Antibody NKT14: A Novel Tool to Manipulate iNKT Cell Function In Vivo. Scheuplein F, Lamont DJ, Poynter ME, Boyson JE, Serreze D, Lundblad LK, Mashal R, Schaub R. PLoS One. 2015 Oct 16;10(10):e0140729. doi: 10.1371/journal.pone.0140729. eCollection 2015. PMID: 26474487 Free Article 	ovalbumin mouse ovalbumin immunization ovalbumin rat
	Anti-Tumor Effects after Adoptive Transfer of IL-12 Transposon-Modified Murine Splenocytes in the OT-I-Melanoma Mouse Model. Galvan DL, O'Neil RT, Foster AE, Huye L, Bear A, Rooney CM, Wilson MH. PLoS One. 2015 Oct 16;10(10):e0140744. doi: 10.1371/journal.pone.0140744. eCollection 2015. PMID: 26473608 Free Article Similar articles	PMC Images search for ovalbumin
	Design and Development of Immunomodulatory Antigen Delivery Systems Based on 4. Peptide/PEG-PLA Conjugate for Tuning Immunity.	

4. Peptide/PEG-PLA Conjugate for Tuning Immunity.

検索結果3 (Protein)

SINCEI Resources		<u>Sign in</u>	TO NCBI
Protein	Protein Ovalbumin Create alert Advanced	Search	Help
Species Animals (2,254) Plants (17)	Display Settings: - Summary, 20 per page, Sorted by Default order Send to: -	Filters: <u>Manage Filters</u>	
Fungi (2) Bacteria (23) Archaea (4) Viruses (2) Customize	See <u>Serpinb2 (OVALBUMIN) serine (or cysteine) peptidase inhibitor, clade B,</u> <u>member 2 in the Gene database</u> ovalbumin reference sequences <u>Transcript (3)</u> <u>Protein (3)</u>	Top Organisms [Tree] Mus musculus (260) Homo sapiens (252) synthetic construct (58) Bos faurus (57)	
Source databases PDB (112) RefSeq (1,460)	Items: 1 to 20 of 2414 << First < Prev Page 1 of 121 Next > Last >>	Gallus gallus (57) All other taxa (1730) More	
Prot (44) Customize	ovalbumin [Gallus gallus] 1. 386 aa protein Accession: AAB59956.1 GI: 212505	Find related data Database: Select	• •
Genetic compartments Plasmid (1)	GenPept Identical Proteins FASTA Graphics ovalbumin [Gallus gallus]		
Sequence length Custom range	2. 386 aa protein Accession: AAA48998.1 GI: 212503 GenPept Identical Proteins FASTA Graphics	Search details	
Molecular weight Custom range	ovalbumin [Gallus gallus] 3. 386 aa protein		
Release date Custom range	Accession: AAO43266.1 GI: 28566340 GenPept Identical Proteins FASTA Graphics	Search	e more
Revision date Custom range	 ovalbumin [Meleagris gallopavo] 386 aa protein 	Recent activity	

検索結果4 (Structure)

S NCBI Resources 🗹 How To 🖂	Sign in to NCBI
Structure Structure ovalbumin Save search Advanced	Search Help
Display Settings: Summary, 20 per page, Sorted by Default order	Filter your results:
Results: 1 to 20 of 53 < Prev Page 1 of 3 Next > Last >>	All (53) NMR (1)
Crystal Structure Of Uncleaved Ovalbumin At 1.95 Angstroms Resolution[Serpin]	<u>X-ray (52)</u>
1. Taxonomy: Gallus gallus Proteins: 2 Chemicals: 3 modified: 2013/01/13 00:00 MMDB ID: 106415 PDB ID: 10VA	<u>Manage Filters</u>
View in Cn3D Similar Structures PubMed Proteins Conserved Domains PubChem Compound	Refine your results • What's this?
2. Crystal Structure Of S-ovalbumin At 1.9 Angstrom Resolution[Allergen]	Protein Domain Families Families (43) Superfamilies (52)
Proteins: 1 Chemicals: 4 modified: 2013/02/06 00:00 MMDB ID: 24399 PDB ID: 1UHG View in Cn3D Similar Structures PubMed Proteins Conserved Domains PubChem	Complexes Protein-Protein (33) Protein-Chemical (15)
Compound Loop-Inserted Structure Of P1-P1' Cleaved Ovalbumin Mutant R339t[Allergen]	Literature PubMed (50) PMC (21)
3. Taxonomy: Gallus gallus Proteins: 1 modified: 2011/05/25 00:00 MMDB ID: 17073 PDB ID: 1JTI	Taxonomy (53)
View in Cn3D Similar Structures PubMed Proteins Conserved Domains	Find related data
4. Crystal Structure Of Human Squamous Cell Carcinoma Antigen 1[Hydrolase Inhibitor]	Database: Select
Proteins: 1 modified: 2011/05/26 00:00 MMDB ID: 69811 PDB ID: 2ZV6	Search details



- ニワトリのovalbumin遺伝子を調べてみよう。
- 塩基配列を含むデータを探し、テキストファイル で保存する。
- 来週、使用します。

演習 (nucleotide databaseを開く)

Health

ClinVar	99	human variations of clinical significance
dbGaP	4	genotype/phenotype interaction studies
GTR	14	genetic testing registry
MedGen	8	medical genetics literature and links
OMIM	55	online mendelian inheritance in man
PubMed Health	0	clinical effectiveness, disease and drug reports
Genomes		
Assembly	0	genome assembly information
BioProject	45	biological projects providing data to NCBI
BioSample	6	descriptions of biological source materials

BioSample	0	descriptions of biological source materials		
Clone	0	genomic and cDNA clones		
dbVar	867	genome structural variation studies		
Epigenomics	0	epigenomic studies and display tools		
Genome	0	genome sequencing projects by organism		
GSS	0	genome survey sequences		
Nucleotide	5,171	DNA and RNA sequences		
Probe	2,869	sequence-based probes and primers		
SNP	11,889	short genetic variations		
SRA	6	high-throughput DNA and RNA sequence read archive		

organisms sequence sets from phylogenetic and PopSet 7 population studies UniGene 145 clusters of expressed transcripts Proteins Conserved 7 conserved protein domains Domains protein sequences Protein 2.414 **Protein Clusters** sequence similarity-based protein clusters 1 experimentally-determined biomolecular Structure 53 structures Chemicals molecular pathways with links to genes, **BioSystems** 692 proteins and chemicals PubChem 1,312 bioactivity screening studies BioAssay chemical information with structures, PubChem 3 Compound information and links PubChem deposited substance and chemical 874 Substance information

演習 (キーワードを追加して絞り込む)

S NCBI Resources	☑ How To ☑	<u>Sign in</u>	to NCBI
Nucleotide	Nucleotide Image: Ovalbumin description Create alert Advanced	Search	Help
Species Animals (4,943) Protists (2) Bacteria (18)	Display Settings: - Summary, 20 per page, Sorted by Default order Send to: -	Filters: <u>Manage Filters</u> Results by taxon	
Archaea (4) Viruses (1) Customize Molecule types	See <u>Serpinb2 (OVALBUMIN) serine (or cysteine) peptidase inhibitor, clade B,</u> <u>member 2</u> in the Gene database ovalbumin reference sequences <u>Transcript (3)</u> <u>Protein (3)</u>	Top Organisms [Tree] Homo sapiens (264) Mus musculus (224) synthetic construct (119) Bos taurus (106)	
genomic DNA/RNA (1,796) mRNA (3,315) Customize	Items: 1 to 20 of 5171 << First < Prev Page 1 of 259 Next > Last >> Equal 5477 publication acquirements	Pan troglodytes <i>(88)</i> All other taxa <i>(4370)</i> More	
Source databases INSDC (GenBank) (1,093) RefSeq (4,065) Customize	 Mus musculus strain C57BL/6J chromosome 1, GRCm38.p3 C57BL/6J 1. 195,471,971 bp linear DNA Accession: NC_000067.6 GI: 372099109 GenBank FASTA Graphics 	Find related data Database: Select Find items	
Genetic compartments Plasmid (1) Sequence length Custom range	 Mus musculus strain C57BL/6J chromosome 1 genomic contig, GRCm38.p3 C57BL/6J MMCHR1_CTG9_2 70,671,640 bp linear DNA Accession: NT_078297.7 GI: 372099041 GenBank FASTA Graphics 	Search details	
Release date Custom range Revision date Custom range	 Mus musculus strain mixed chromosome 1, alternate assembly Mm_Celera, whole genome shotgun sequence 202,526,509 bp linear DNA Accession: AC_000023.1 GI: 83274080 Comparise EASTA Complete 	Search Se	e more

演習 (Advanced searchを使う)

S NCBI Resources 🗵	How To 🖂	<u>Sign in</u>	to NCBI
Nucleotide	Nucleotide Image: Ovalbumin chicken Create alert Advanced	Search	Help
Species Animals (2,072) Viruses (1) Customize	Display Settings: - Summary, 20 per page, Sorted by Default order Send to: -	Filters: <u>Manage Filters</u> Results by taxon	
Molecule types genomic DNA/RNA (886) mRNA (1,189) Customize	See <u>Serpinb2 (OVALBUMIN) serine (or cysteine) peptidase inhibitor, clade B,</u> <u>member 2</u> in the Gene database ovalbumin reference sequences <u>Transcript (3)</u> <u>Protein (3)</u>	Top Organisms [Tree] Homo sapiens (101) Gallus gallus (71) Mus musculus (55) Danio rerio (42)	
Source databases INSDC (GenBank) (404) RefSeq (1,683)	Items: 1 to 20 of 2092 << First < Prev Page 1 of 105 Next > Last >> Image: The sequences of th	Bos taurus <i>(28)</i> All other taxa <i>(1795)</i> More	
Customize Sequence length Custom range	 <u>Chicken ovalbumin gene</u> 2,098 bp linear DNA in 8 segments This entry is a segmented set 	Find related data Database: Select Find items	÷
Release date Custom range	Accession: AH002406.1 GI: 212502 GenBank FASTA Graphics	Search details	
Custom range	2. 226 bp linear DNA Accession: M34346.1 GI: 212495 GenBank FASTA Graphics	<pre>ovalbumin[All Fields] A ("Gallus gallus"[Organi OR chicken[All Fields])</pre>	AND Lsm])
Show additional filters	 Chicken ovalbumin gene, exon 7 3. 196 bp linear DNA Accession: M34351.1 GI: 212500 GenBank FASTA Graphics 	Search Se	e more
		Recent activity	



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Nucleotide Advanced Search Builder

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Builder All Fields		
AND (All Fields)	Show index list	
	Show index list	
Search or Add to history		

History

Download history Clear history

Search	Add to builder	Query	ltems found	Time
<u>#26</u>	Add	Search ovalbumin chicken	1767	06:20:47
<u>#23</u>	Add	Search ovalbumin	<u>4216</u>	06:17:22



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Use the	builder below to create y	our search						
Edit								Clea
Builder								
	Accession	÷		-				
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AND	BioProject BioSample	¢.			Ohann in dans lint			
	Breed		9	90	Show index list			
Search	Cultivar							
Search	Division EC/RN Number							
	Feature key							
	Filter Gene Name							
History	lsolate Issue					Download his	story <u>Cl</u>	ear history
Search	Keyword Modification Date		Query			l f	tems ound	Time
#26	Organism Page Number	min chicken					1767	06:20:47
#23	Primary Accession	umin					4216	06:17:22
	Primary Organism Properties Protein Name							



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Nucleotide I	lome	Help	

Nucleotide Advanced Search Builder

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Builder		
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	Show index list	
	C Show index list	
Search or <u>Add to history</u>		

History

Download history Clear history

Search	Add to builder	Query	ltems found	Time
<u>#26</u>	Add	Search ovalbumin chicken	1767	06:20:47
<u>#23</u>	Add	Search ovalbumin	<u>4216</u>	06:17:22

演習 (タンパク質名の入力)

S NCBI Re	esources 🗹) How To 🗹		Sign in to NCB
Nucleotide I	Home H	lelp		
Nucleotide	Advan	Accession All Fields Assembly Author BioProject		_
	chicker	BioSample		
	<u>Edit</u>	Component Accession Cultivar Division	Clea	ar
	Builder	EC/RN Number Feature key Filter		
	chicker	Gene Name	Show index list	
	AND	Isolate Issue	Show index list	
	Searc	Keyword Modification Date Organism Page Number		
	History	Primary Organism Properties Protein Name	Download history Clear histor	Ŷ
	Search	Publication Date SeqID String Sequence Length	Query Items found Time	
	<u>#26</u>	Strain Search ovalbu	min chicken <u>1767</u> 06:20:47	7
	<u>#23</u>	Substance Name Text Word	min <u>4216</u> 06:17:22	2
		Title Volume		

演習 (タンパク質名の入力)

S NCBI Resource	s 🗹 Hov	r To ☑ Sign in to NCB
Nucleotide Home	Help	

Nucleotide Advanced Search Builder

(chicken[Organism]) AND ovalbumin[Protein Name]			
Edit	•		Clear
Builder			
Organism 🛟			
chicken	0	Show index list	
AND Crotein Name			
ovalbumin	0	Show index list	
AND CAll Fields			
	0 0	Show index list	
Search or <u>Add to history</u>			

History

Download history Clear history

Search	Add to builder	Query	ltems found	Time
<u>#26</u>	Add	Search ovalbumin chicken	1767	06:20:47
<u>#23</u>	Add	Search ovalbumin	<u>4216</u>	06:17:22



S NCBI Resources 🖸	How To 🖂	Sign in to NCBI
Nucleotide	Nucleotide (chicken[Organism]) AND ovalbumin[Protein Name] Create alert Advanced	Search Help
Species Animals (12) Customize Molecule types genomic DNA/RNA (11)	Display Settings: - Summary, 20 per page, Sorted by Default order Send to: Items: 12	Filters: <u>Manage Filters</u> Analyze these sequences Run BLAST
mRNA (1) Customize Source databases INSDC (GenBank) (12) Customize	Chicken ovalbumin gene 1. 2,098 bp linear DNA in 8 segments Image: This entry is a segmented set Accession: AH002466.1 GI: 212502 GenBank FASTA Graphics	Find related data Database: Select Find items
Sequence length Custom range Release date Custom range	 Chicken ovalbumin gene, exon 8 2. 1,030 bp linear DNA Accession: M34352.1 GI: 212501 GenBank FASTA Graphics 	Search details "Gallus gallus"[Organism] AND ovalbumin[Protein Name]
Revision date Custom range Clear all	Chicken ovalbumin gene, exon 7 3. 196 bp linear DNA Accession: M34351.1 Gl: 212500 GenBank FASTA Graphics	Search See more
Show additional filters	 Chicken ovalbumin gene, exon 6 4. 183 bp linear DNA Accession: M34350.1 GI: 212499 GenBank FASTA Graphics 	Recent activity <u>Turn Off</u> <u>Clear</u> (chicken[Organism]) AND ovalbumin[Protein Name] (<u>Nucleotide</u> ovalbumin chicken (2092)
	Chicken ovalbumin gene, exon 5	Nucleotide



Display Settings: \bigtriangledown GenBank Send: Change region shown • Gallus gallus ovalbumin gene, complete cds GenBank: J00895.1 **Customize view** -FASTA Graphics Go to: 🖂 Analyze this sequence . LOCUS CHKOVAL 9206 bp DNA linear VRT 29-MAR-Run BLAST 2007 Pick Primers DEFINITION Gallus gallus ovalbumin gene, complete cds. J00895 M24999 ACCESSION **Highlight Sequence Features** J00895.1 GI:212504 VERSION Find in this Sequence KEYWORDS SOURCE Gallus gallus (chicken) ORGANISM Gallus gallus Articles about the OVAL gene • Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Testudines + Archosauria group; Archosauria; Dinosauria; Restricted aeroallergen access to airway Saurischia; Theropoda; Coelurosauria; Aves; Neognathae; mucosal dendritic cells [J Immunol. 2011] Galliformes; Phasianidae; Phasianinae; Gallus. Strong stabilization of amorphous 1 (bases 1343 to 8906) REFERENCE calcium carbonate [J Am Chem Soc. 2011] AUTHORS McReynolds, L., O'Malley, B.W., Nisbet, A.D., Fothergill, J.E., Antigen localization controls T cell-Givol, D., Fields, S., Robertson, M. and Brownlee, G.G. mediated tumor immuni [J Immunol. 2011] TITLE Sequence of chicken ovalbumin mRNA JOURNAL Nature 273 (5665), 723-728 (1978) See all... PUBMED 661981 REFERENCE 2 (bases 1357 to 1389; 2941 to 3052) AUTHORS Breathnach, R., Benoist, C., O'Hare, K., Gannon, F. and Chambon, P. Reference sequence information TITLE Ovalbumin gene: evidence for a leader sequence in mRNA and DNA sequences at the exon-intron boundaries RefSeg mRNA See reference mRNA sequence for the JOURNAL Proc. Natl. Acad. Sci. U.S.A. 75 (10), 4853-4857 (1978) OVAL gene (NM 205152.2). PUBMED 283395 3 (bases 5576 to 5624) REFERENCE AUTHORS Lai, E.C., Woo, S.L., Dugaiczyk, A. and O'Malley, B.W. TITLE The ovalbumin gene: alleles created by mutations in the More about the OVAL gene * intervening OVAL gene

sequences of the natural gene



nucleotic	ies [3].
FEATURES	Location/Qualifiers
source	19206
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mian difference	1 5 3 3



ニワトリovalbuminをコードする遺伝子のエキソン・イントロン構造



エキソン:mRNAとして発現する領域

CDS:タンパク質のアミノ酸配列を指定している領域



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VLQPSSVDSQTAMVLVNAIVFKGLWEKAFKDEDTQAMPFRVTEQESKPVQMMYQIGLF

RVASMASEKMKILELPFASGTMSMLVLLPDEVSGLEQLESIINFEKLTEWTSSNVMEE

RKIKVYLPRMKMEEKYNLTSVLMAMGITDVFSSSANLSGISSAESLKISQAVHAAHAE

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•	/note="oval intron B"
exon	34153465
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演習 データの見方(5)

ORIGIN

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演習 データの見方(6)

2/01	cacycayayy	Caactyyett	Cryyyacayr	LLYCLACCCA	aaayacaact	yaatycaaat	
2761	acataaatag	atttatgaat	atggttttga	acatgcacat	gagaggtgga	tatagcaaca	L
2821	gacacattac	cacagaatta	ctttaaaact	acttgttaac	atttaattgc	ctaaaaactg	ſ
2881	ctcgtaattt	actgttgtag	cctaccatag	agtaccctgc	atggtactat	gtacagcatt	
2941	ccatccttac	attttcactg	ttctgctgtt	tgctctag <mark>ac</mark>	aactcagagt	tcaccatggg	し、のペーンをエ
3001	ctccatcggt	gcagcaagca	tggaattttg	ttttgatgta	ttcaaggagc	tcaaagtcca	
3061	ccatgccaat	gagaacatct	tctactgccc	cattgccatc	atgtcagctc	tagccatggt	ファイルで促ち
3121	atacctgggt	gcaaaagaca	gcaccaggac	acaaataaat	aaggtgagcc	tacagttaaa	レングイル し 休1 ナ
3181	gattaaaacc	tttgccctgc	tcaatggagc	cacagcactt	aattgtatga	taatgtccct	1
3241	tggaaactgc	atagctcaga	ggctgaaaat	ctgaaaccag	agttatctaa	aagtgtggcc	1
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3601	cactgttcat	aagaacagag	aaaaagaagg	aagtaacagg	ggattcagaa	caaacagaag	ſ
3661	ataaaactca	ggacaaaaat	accgtgtgaa	tgaggaaact	tgtggatatt	tgtacgctta	L
3721	agcaagacag	ctagatgatt	ctggataaat	gggtctggtt	ggaaaagaag	gaaagcctgg	ſ
3781	ctgatctgct	ggagctagat	tattgcagca	ggtaggcagg	agttccctag	agaaaagtat	:
3841	gagggaatta	cagaagaaaa	acagcacaaa	attgtaaata	ttggaaaagg	accacatcag	ſ
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4261	gtttcactaa	gaaaatttct	ttttctcttg	tttttacaaa	tgaaagagag	gacaaataac	
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4441	agcatgtagt	aatacagtgt	aaaatagctt	tttacactac	tatattatta	atatctgtta	L
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4681	agtcagacaa	atggtaaggt	agaacatgct	ttgtacatag	tgagagttgg	t join(1343.	.1389,29793163,34153465,40474175,
4741	tactgagaac	ttggatatag	ctcagccagc	gtgctttgcg	ttcaagctta	c 45764693	3,56525794,61266281,78648906)
4801	tgtatgcctg	ttaagcaggg	catacagtca	tgaggetett	gaaaaatctt	a /product="	'ovalbumin"
4861	ggggaatgga	aaatcogagt	taagggatgg	tagggataaa	atgcatagaa	a	

ページをテキスト イルで保存しておく



大腸菌のRNAポリメラーゼのサブユニットのアミノ 酸配列を集めよ。

- 大腸菌のRNAポリメラーゼ $\alpha_2\beta\beta'\omega(+\sigma)$
- 遺伝子名 rpoA: αサブユニット (329 aa.) rpoB: βサブユニット (1342 aa.) rpoC: β' サブユニット (1407 aa.) rpoZ: ωサブユニット (91 aa.)
- complete cds. を探すこと。partial sequenceではない。
- protein data baseを検索する方が絞り込みが効果的
- メールの本分にこれらの配列を整理し(書式を整える)
- 件名は「講義3課題1」

キーワードの代わりに配列で検索する

- ニワトリのOvalbuminに似たアミノ酸配列を持つ タンパク質は人にも存在するの?
 - Human, ovalbumin などのキーワードでデー タベースを検索する。
 - ニワトリovalbuminのアミノ酸配列に似たヒト のタンパク質を検索する。

BLASTサーチ:塩基配列やアミノ酸配列のデータベース を検索して、似た配列を持つ遺伝子やタンパク質を選 抜することができる。

(芦苅先生の講義で詳細に説明される。)



 nucleotide blast
 Search a nucleotide database using a nucleotide query

 Algorithms:
 blast

 protein blast
 Search protein database using a protein query

 Algorithms:
 blastx

 blastx
 Search protein database using a translated nucleotide query

thlasta

Coards translated nucleatide database using a protein query

キーワードの代わりに配列で検索する

human genomic database **^**

S BLAST ®	Basic Local Alignment Search Tool	My NCBI 2	
Home Re	cent Results Saved Strategies Help	[Sign In] [Register]	
NCBI/ BLAST Ho	me	Your Pecent Results Neul	
BLAST finds	regions of similarity between biological sequences. more	My NCB ? [Sign In] [Register] Your Recent Results New! Image: All Recent results Image: All Recent results News Find Genomic BLAST pages You can now find Genomic BLAST pages using the search box from the BLAST homepage. Thu, 02 Oct 2014 11:00:00 EST Image: More BLAST news Tip of the Day Image: More tips	
	New DELTA-BLAST, a more sensitive protein-protein search	All Recent results	
	combled Conomeo	News	
Find Genomic	BLAST pages:	Find Genomic BLAST pages	
Enter orga	ame or id-completions will be suggested	You can now find Genomic	
□ <u>Human</u>	Rabbit Zebrafish	search box from the BLAST homepage.	
□ <u>Mouse</u> □ <u>Rat</u>	• Chimp • Clawed frog • Guinea pig • Arabidopsis	Thu, 02 Oct 2014 11:00:00	
□ <u>Cow</u> □ <u>Pig</u>	Fruit fly Rice Honey bee Yeast Chicken	More BLAST news	
<u>Dog</u>	<u>Cnicken</u> <u>Microbes</u>		
Basic BLA	ST	Tip of the Day	
Choose a BLA	ST program to run.	More tips	
nucleotide k	last Search a nucleotide database using a nucleotide query Algorithms: blastn, megablast, discontiguous megablast		
protein t	last Search protein database using a protein query Algorithms: blastp, psi-blast, phi-blast, delta-blast		

blastx

Search protein database using a translated nucleotide query

キーワードの代わりに配列で検索する Blast検索のページ(blastpに入る)

BLAST®	Basic Local Alignment Search Tool	
Home Rece	nt Results Saved Strategies Help	[Sign In] [Register]
NCBI/ BLAST/ blastn	suite BLAST Human Sequences	
blastn <u>blastp</u> blas	tx tblastn tblastn	
Enter very S	BLASTN programs search nucleotide databases using a nucleotide query. more	Reset page Bookmark
Enter ac ssion n	umber(s), gi(s), or FASTA sequence(s) 🛞 <u>Clear</u> Query subrange 🚱	
	From	
	То	
Or, upload file		
Job Title		
	Enter a descriptive title for your BLAST search 😡	
Choose Searc	ch Set	
Database	Genome (all assemblies) \$\$4900 sequences	
Exclude	□ Models (XM/XP) □ Uncultured/environmental sample sequences	
Entrez Query		
Optional	Enter an Entrez query to limit search 🛞	
Program Sele	ction	
Optimize for	Highly similar sequences (megablast)	
	O More dissimilar sequences (discontiguous megablast)	
	O Somewhat similar sequences (blastn)	
	Choose a BLAST algorithm 😡	
BLAST	Search database Human Genome (all assemblies) using Megablast (Optimize for highly similar sequences)	
	Show results in a new window	
+ Algorithm parame	eters and a second s	

キーワードの代わりに配列で検索する ニワトリovalbuminのアミノ酸配列をコピー

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	RVASMASEKMKILELPFASGTMSMLVLLPDEVSGLEQLESIINFEKLTEWTSSNVMEE
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キーワードの代わりに配列で検索する データベースを指定

NCBI/ BLAST/ blastp s	ulte BLAST Human Sequences	
blastn blastp blastx	tblastn tblastx	
Enter Query Se	QUENCE BLASTP programs search protein databases using a protein query. more	Reset page Bookmark
Enter accession nu	mber(s), gi(s), or FASTA sequence(s) 😡 <u>Clear</u> Query subrange 🛞	
121 cvkelyrggl 181 fkglwektfk 241 smlvllpdev 301 mgitdvfss 361 adhpflfcik	epinfqtaad qarelinswy esqtngiirn vlqpssvdsq tamvlvnaiv k dedtqampfr vteqeskpvq mmyqiglfrv asmasekmki lelpfasgtm v sgleqlesii nfekltewts snvmeerkik vylprmkmee kynltsvlma s anlsgissae slkisqavha ahaeineagr evvgsaeagv daasvseefr hiatnavlff grcvsp	
Or, upload file	(ファイルを選択) ファイル…いません 😢	
Job Title	CAA34470:calmodulin-independent adenylate	
	Enter a descriptive title for your BLAST search 🛞	
Choose Search	n Set	
Database	RefSeq protein 29376 sequences	
Exclude Optional Entrez Query Optional	□ Models (XM/XP) I Uncultured/environmental sample sequences	
Program Select	tion	
Algorithm	 blastp (protein-protein BLAST) PSI-BLAST (Position-Specific Iterated BLAST) PHI-BLAST (Pattern Hit Initiated BLAST) Choose a BLAST algorithm () 	
BLAST	Search database RefSeq protein using Blastp (protein-protein BLAST)	
Algorithm paramet	ers	

キーワードの代わりに配列で検索する 検索プログラムを指定

BLAST [®] Home Recen	Basic Local Alignment Search Tool t Results Saved Strategies Help	My NCBI ? [Sign In] [Register]
NCBI/ BLAST/ blastp s	uite BLAST Human Sequences	
blastn blastp blastx	tblastn tblastx	
Enter Query Se	BLASTP programs search protein databases using a protein query. more	eset page Bookmark
Enter accession nu	mber(s), gi(s), or FASTA sequence(s) 🛞 <u>Clear</u> Query subrange 🛞	
121 cvkelyrgg 181 fkglwektf 241 smlvllpde 301 mgitdvfss 361 adhpflfcik	l epinfqtaad qarelinswy esqtngiirn vlqpssydsq tamylynaiv k dedtqampfr yteqeskpyq mmyqiglfry asmasekmki lelpfasgtm y sgleqlesii nfekltewts snymeerkik yylprmkmee kynltsylma s anlsgissae slkisqayha ahaeineagr evygsaeagy daasyseefr hiatnavlff grcysp	
Or, upload file	ファイルを選択 ファイル…いません 🔞	
Job Title	CAA34470:calmodulin-independent adenylate	
	Enter a descriptive title for your BLAST search 🛞	
Choose Searc	n Set	
Database	RefSeq protein 29376 sequences	
Exclude Optional Entrez Query Optional	□ Models (XM/XP)	
Program Selec	tion	
Algorithm	blastp (protein-protein BLAST) O DOL DL ACT (Decision Second DLAST)	
	PHI-BLAST (Position-Specific Iterated BLAST)	
	Choose a BLAST algorithm 🛞	
BLAST	Search database RefSeg protein using Blasto (protein-protein BLAST)	
DEAST	Show results in a new window	
+Algorithm paramet	ers	

A V



 Query ID
 lcl|Query_66824

 escription
 None

 ecule type
 amino acid

 try Length
 386

 Database Name
 RefSeq protein

 Description
 Homo sapiens RefSeq protein

 Program
 BLASTP 2.2.32+ ▷ Citation

r reports: > Search Summary [Taxonomy reports] [Distance tree of results] [Multiple alignment]

New Analyze your query with SmartBLAST

hic Summary

ow Conserved Domains



Distribution of 71 Blast Hits on the Query Sequence @



検索結果の表示(2)

Sequences producing significant alignments:

Select: All None Selected:0

Description	Max score	Total score	Query cover	E value	Ident	Accession
serpin B3 [Homo sapiens]	316	316	100%	2e-103	41%	NP_008850.1
serpin B11 isoform a [Homo sapiens]	314	314	100%	1e-102	39%	NP_536723.2
PREDICTED: serpin B11 isoform X2 [Homo sapiens]	314	314	100%	1e-102	39%	XP_011524552.1
serpin B10 [Homo sapiens]	310	310	100%	4e-101	40%	NP_005015.1
serpin B4 isoform 1 [Homo sapiens]	307	307	100%	4e-100	40%	NP_002965.1
PREDICTED: serpin B13 isoform X2 [Homo sapiens]	292	292	100%	3e-94	39%	XP_011524331.1
serpin B13 [Homo sapiens]	291	291	100%	9e-94	39%	NP_036529.1
serpin B13 isoform 1 [Homo sapiens]	289	289	100%	6e-93	38%	NP_001294852.1
serpin B4 isoform 2 [Homo sapiens]	286	286	100%	4e-92	39%	NP_778206.1
serpin B9 [Homo sapiens]	273	273	100%	9e-87	37%	NP_004146.1
serpin B12 isoform 2 [Homo sapiens]	272	272	100%	3e-86	37%	NP_536722.1
plasminogen activator inhibitor 2 [Homo sapiens]	269	269	100%	8e-85	37%	NP_002566.1
leukocyte elastase inhibitor [Homo sapiens]	266	266	100%	3e-84	38%	NP_109591.1
serpin B12 isoform 1 [Homo sapiens]	266	266	100%	7e-84	36%	NP_001294857.1
PREDICTED: serpin B12 isoform X2 [Homo sapiens]	267	267	100%	8e-84	36%	XP_011524548.1
PREDICTED: serpin B12 isoform X1 [Homo sapiens]	266	266	100%	1e-83	36%	XP_005266835.2
serpin B7 isoform 1 [Homo sapiens]	264	264	100%	2e-83	35%	NP_003775.1
serpin B6 isoform a [Homo sapiens]	258	258	100%	3e-81	35%	NP_004559.4
serpin B6 isoform b [Homo sapiens]	258	258	100%	4e-81	35%	NP_001182220.2
serpin B6 isoform d [Homo sapiens]	258	258	100%	4e-81	35%	NP_001258752.1
serpin B6 isoform c [Homo sapiens]	258	258	100%	5e-81	35%	NP_001258751.1
PREDICTED: serpin B6 isoform X2 [Homo sapiens]	258	258	100%	4e-80	35%	XP_011512974.1

247 247 669/ 20 79 479/ 20 044504220.4



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🗄 Down	load	<u>Gept</u> Graphics	▼ Next	🔺 Previous 🛕 Descri
serpin	B3 [H	om sapiens]		
Sequend	ce ID: I	ef[NP_008850.1 Length: 390 Number of Matches: 1	-	Related Informatio
Range 1	: 1 to	390 GenPept Graphics Vext Match 📥 Previous Matc	h	Gene - associated gene
Score 316 bit	s(810	ExpectMethodIdentitiesPositivesGaps2e-103Compositional matrix adjust.162/391(41%)237/391(60%)6/391(1%)		Map Viewer - aligned ge
Query	1	MGSIGAASMEFCFDVFKELKVHHANENIFYCPIAIMSALAMVYLGAKDSTRTQINKVVRF 60		CONTEXT
Sbjct	1	M S+ A+ +F FD+F++ + N NIFY PI+I SAL MV LGAND+T QI KV+ F MNSLSEANTKFMFDLFQQFRKSKEN-NIFYSPISITSALGMVLLGAKDNTAQQIKKVLHF 59		
Query	61	DKLPGFGDSIEAQCGTSVNVHSSLRDILNQITKPNDVYSFSLASRLYAEERYPILPEY 118		
Sbjct	60	D++ G + S NVH + +L + K D Y +A++L+ E+ Y L EY DQVTENTTGKAATYHVDRSGNVHHQFQKLLTEFNKSTDAYELKIANKLFGEKTYLFLQEY 119		
Query	119	LQCVKELYRGGLEPINFQTAADQARELINSWVESQTNGIIRNVLQPSSVDSQTAMVLVNA 178		
Sbjct	120	L +K+ Y+ +E ++F A +++R+ INSWVESQTN I+N++ ++ S T +VLVNA LDAIKKFYQTSVESVDFANAPEESRKKINSWVESQTNEKIKNLIPEGNIGSNTTLVLVNA 179		
Query	179	IVFKGLWEKAFKDEDTQAMPFRVTEQESKPVQMMYQIGLFRVASMASEKMKILELPFASG 238		
Sbjct	180	I FKG WEK F EDT+ F + K +QMM Q F AS+ + K+LE+P+ IYFKGQWEKKFNKEDTKEEKFWPNKNTYKSIQMMRQYTSFHFASLEDVQAKVLEIPYKGK 239		
Query	239	TMSMLVLLPDEVSGLEQLESIINFEKLTEWTSSNVMEERKIKVYLPRMKMEEKYNLTSVL 298		
Sbjct	240	+SM+VLLP+E+ GL++LE + EKL EWTS M E ++ ++LPR K+EE Y+L L DLSMIVLLPNEIDGLQKLEEKLTAEKLMEWTSLQNMRETRVDLHLPRFKVEESYDLKDTL 299		
Query	299	MAMGITDVFSSSANLSGISSAESLKISQAVHAAHAEINEAGREVVGSAEAGVDAASV 355		
Sbjct	300	MG+ D+F+ A+LSG++ + L +S +H A E+ E G E + G S RTMGMVDIFNGDADLSGMTGSRGLVLSGVLHKAFVEVTEEGAEAAAATAVVGFGSSPTST 359		
Query	356	SEEFRADHPFLFCIKHIATNAVLFFGRCVSP 386		
_		+EEF +HPFLF I+ TN++LF+GR SP		

Bownload - GenPept Graphics

Vext 🔺 Previous 🛕 Description

serpin B11 isoform a [Homo sapiens] Sequence ID: <u>ref|NP_536723.2</u>| Length: 392 Number of Matches: 1 <u>See 1 more title(s)</u>

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Ovalbuminに似たヒトのタンパク質

C INCOL RE			
Protein	Protein		Search
	Λυναιιόου		
Display Setting	is: - GenPept	Send to: -	Change region shown
serpin B3 [Homo sapiens]			Customize view
NCBI Referen	ce Sequence: NP 008850.1		Customize view
Identical Proteins FASTA Graphics			
			Analyze this sequence
<u>Go to:</u> 🖂			Run BLAST
LOCUS	NP 008850 390 aa linear PRI 15-MAR-2015		Identify Conserved Domain
DEFINITION	serpin B3 [Homo sapiens].		Highlight Sequence Featur
ACCESSION	NP_008850		
VERSION	NP_008850.1 GI:5902072		Find in this Sequence
DBSOURCE	REFSEQ: accession <u>NM_006919.2</u>		
SOURCE	Homo sapiens (human)		Protoin 2D Structure
ORGANISM	Homo sapiens		Protein 3D Structure
	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;		Psoria:
	Mammalia; Eutheria; Euarchontoglires; Primates; Haplorrhini;		Compa
DEEDDWGD	Catarrhini; Hominidae; Homo.		PDB: 4
AUTHORS	I (residues I to 390) Turato C. Simonato D. Quarta S. Catta A and Pontisso P.		Source
TITLE	MicroRNAs and SerpinB3 in hepatocellular carcinoma		Metho
JOURNAL	Life Sci. 100 (1), 9-17 (2014)		Resolution: 2 Å
PUBMED	24496037		Resolution: 2 A
REMARK	GeneRIF: SERPINB3 may enhance its oncogenic potential through		
	inhibition of several tumor suppressive miRNAs. [Review]		
DEFEDENCE	Review article		
AUTHORS	Heit C. Jackson BC. McAndrews M. Wright MW. Thompson DC. Silverman		Articles about the SERF
	GA, Nebert DW and Vasiliou V.		Prognostic significance of s
TITLE	Update of the human and mouse SERPIN gene superfamily		ceil carcinoma antigen [Act
JOURNAL	Hum. Genomics 7, 22 (2013)		The molecular signature of
PUBMED	24172014 Publication Statuce Online Only		wound healing identifies se
REMARK	Publication Status: Online-Only		OF DDIND2 and a from a



- 大腸菌のRNAポリメラーゼ βサブユニットに似し た配列を持つヒトのタンパク質は?
 - 先ほど保存したrpoBのテキストファイルを開き、アミノ酸配列をコ ピーする。
 - NCBI-Blastへ、さらにhuman genomic blast databaseに入り、サー
 チボックスにペーストする。
 - Refseq protein (database), BLASTP (program)を選択し、検索開始。
 - ヒットしたタンパク質名のリスト(Descriptionというタイトルのついた 表)を含む画面を画像ファイルとして保存し、メールに添付して提 出。
 - 最もよく似たタンパク質の名称、サイズ(アミノ酸数)、アミノ酸配
 列をメールに本文に整理して記載
 - 件名は「「講義3課題2」
 - 余裕があれば、α, β'サブユニットについても調べてみよう。

スクリーンショット

モニタで見えている画面を画像ファイルとして保存する

1. 撮りたい画面が表示された状態にします。

2. キーボードの「Print Screen」キーを押下します。

3.「スタート」メニューから、「プログラム」→「アクセサリ」と選択して「ペイント」を起動し ます。

4. ペイントが起動したら、「編集」メニューから「貼り付け(<u>P)」(またはCtrl+V)を選択して</u> <u>貼り付けます。</u>

5.トリミングした後、JPEG, TIFFなどの互換性のあるファイル形式で保存

■ pUC19の遺伝子情報もテキスト保存しておく。

- やり方は同じ。
- DBGETを使っても、NCBI databaseを使っても良い。
- 先ほど保存したpUC18を同じ塩基配列から始まるものを選ぶこと