GSLC Computational Biology Sesi 9

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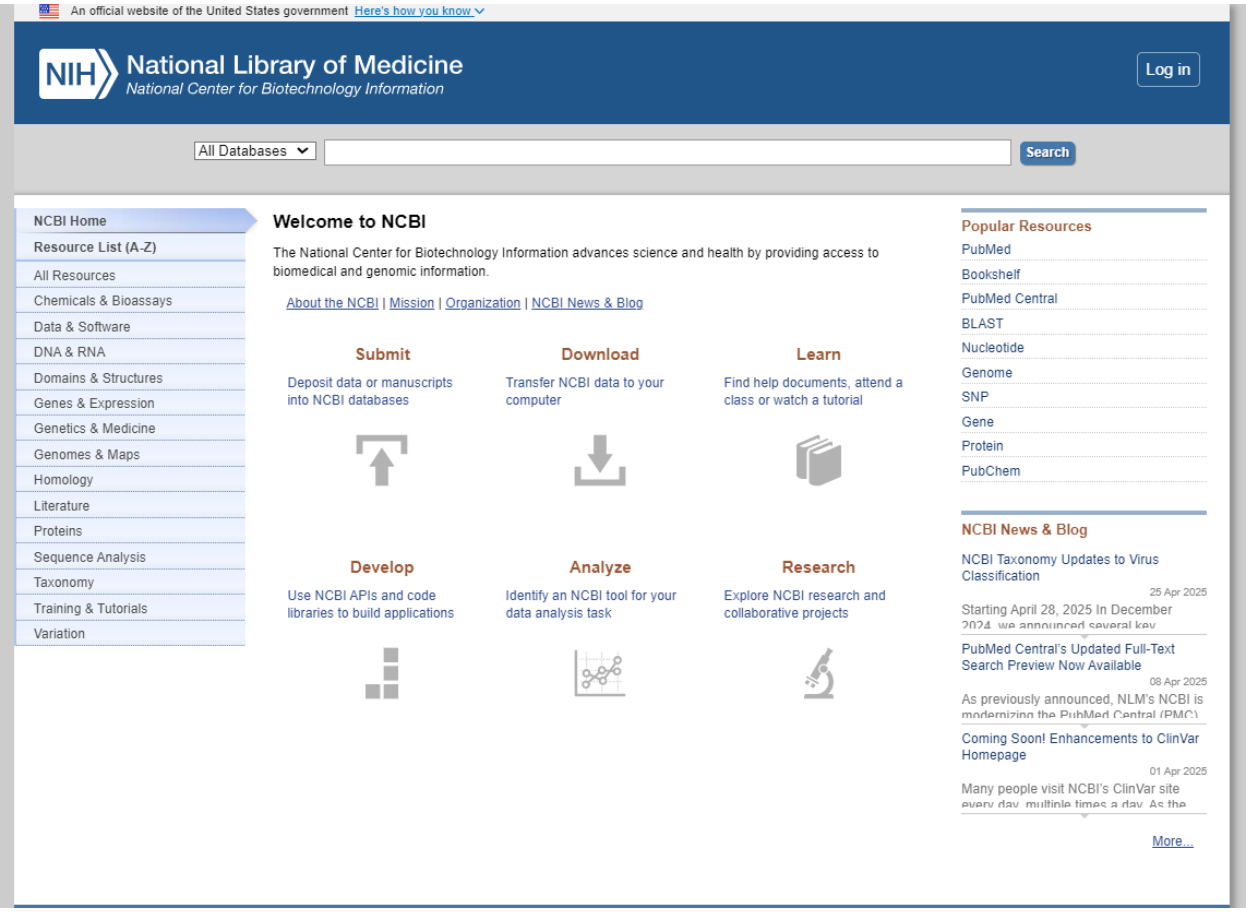
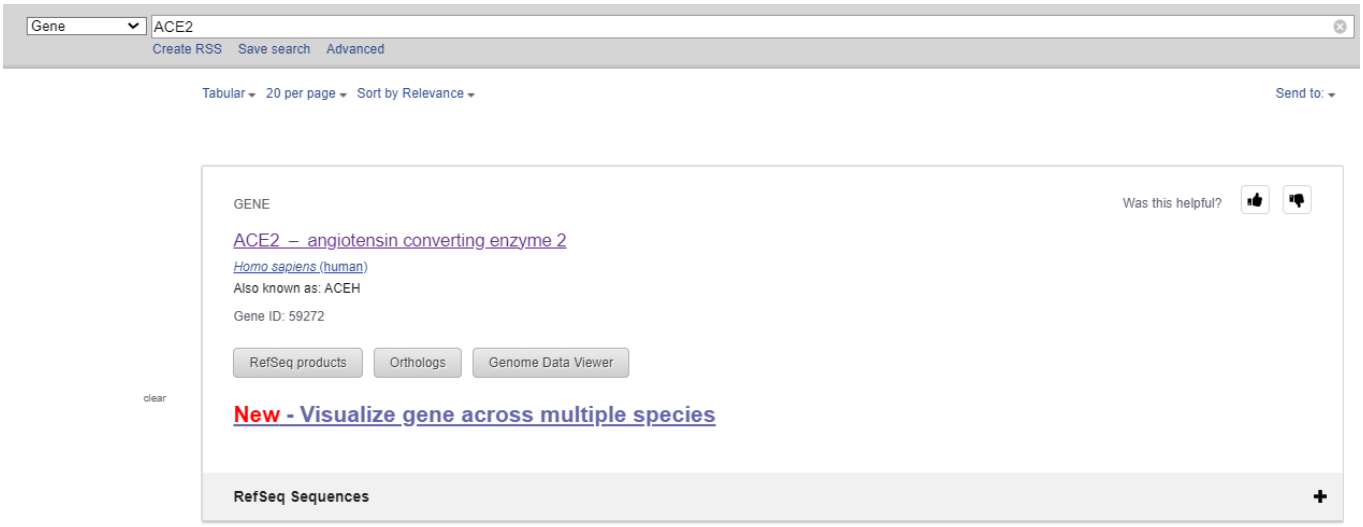
Kelas : LP01

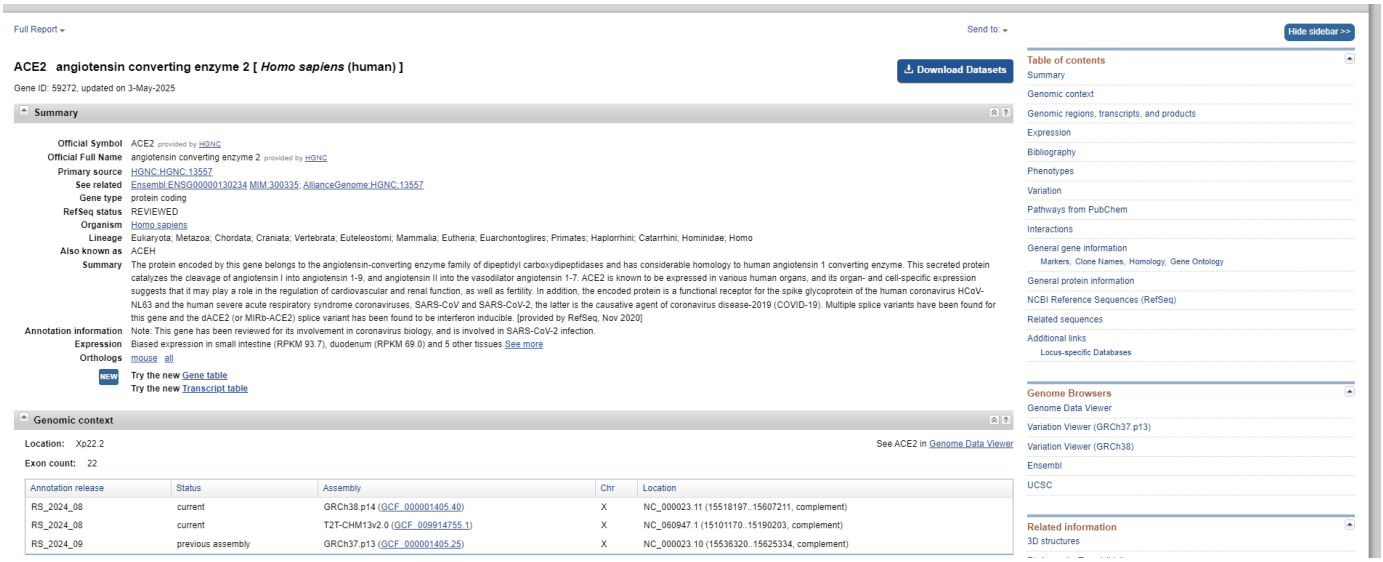
Berdasarkan video PPT Bioinformatics Database (sesi 8) slide ke 19 (https://youtu.be/RPyhYraPcog?si=0bTW4agTxOt8A4Zt) tentang cara mengakses data dan mencari nukleotida di GenBank NCBI, kita dapat melakukan beberapa langkah berikut:

1. Akses link berikut terlebih dahulu: https://www.ncbi.nlm.nih.gov/.




2. Sekarang kita akan ganti database nya menjadi gene lalu kita masukkan nama gene yang kita ingin cari. Disini saya akan gunakan ACE2 (Angiotensin-Converting Enzyme 2) karena gen ini memiliki peran penting dalam sistem kardiovaskular dan menjadi sangat relevan dalam studi virologi, khususnya sejak pandemi COVID-19. ACE2 merupakan reseptor utama yang digunakan oleh virus SARS-CoV-2 untuk masuk ke dalam sel manusia.


Gene
ACE2
Create RSS
Save search
Advanced
Tabular
20 per page
Sort by Relevance
Send to:
GENE
Was this helpful?
ACE2 – angiotensin converting enzyme 2
Homo sapiens (human)
Also known as: ACEH
Gene ID: 59272
RefSeq products
Orthologs
Genome Data Viewer
clear
New - Visualize gene across multiple species
RefSeq Sequences


Full Report
Send to:
Hide sidebar >>
ACE2 angiotensin converting enzyme 2 [ Homo sapiens (human) ]
Download Datasets
Gene ID: 59272, updated on 3-May-2025
Summary
Official Symbol ACE2 provided by HGNC
Official Full Name angiotensin converting enzyme 2 provided by HGNC
Primary source HGNC:HGNC:13557
See related Ensembl:ENSG00000130234 MIM:300335; AllianceGenome:HGNC:13557
Gene type protein coding
RefSeq status REVIEWED
Organism Homo sapiens
Lineage Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Primates; Haplorrhini; Catarrhini; Hominidae; Homo
Also known as ACEH
Summary The protein encoded by this gene belongs to the angiotensin-converting enzyme family of dipeptidyl carboxydipeptidases and has considerable homology to human angiotensin 1 converting enzyme. This secreted protein catalyzes the cleavage of angiotensin I into angiotensin 1-9, and angiotensin II into the vasodilator angiotensin 1-7. ACE2 is known to be expressed in various human organs, and its organ- and cell-specific expression suggests that it may play a role in the regulation of cardiovascular and renal function, as well as fertility. In addition, the encoded protein is a functional receptor for the spike glycoprotein of the human coronavirus HCoV-NL63 and the human severe acute respiratory syndrome coronaviruses, SARS-CoV and SARS-CoV-2, the latter is the causative agent of coronavirus disease-2019 (COVID-19). Multiple splice variants have been found for this gene and the dACE2 (or MIRb-ACE2) splice variant has been found to be interferon inducible. [provided by RefSeq, Nov 2020]
Annotation information Note: This gene has been reviewed for its involvement in coronavirus biology, and is involved in SARS-CoV-2 infection.
Expression Biased expression in small intestine (RPKM 93.7), duodenum (RPKM 69.0) and 5 other tissues See more
Orthologs mouse all
NEW
Try the new Gene table
Try the new Transcript table
Genomic context
Location: Xp22.2
See ACE2 in Genome Data Viewer
Exon count: 22
Annotation release | Status | Assembly | Chr | Location
RS_2024_08 | current | GRCh38.p14 (GCF_000001405.40) | X | NC_000023.11 (15518197..15607211, complement)
RS_2024_08 | current | T2T-CHM13v2.0 (GCF_009914755.1) | X | NC_060947.1 (15101170..15190203, complement)
RS_2024_09 | previous assembly | GRCh37.p13 (GCF_000001405.25) | X | NC_000023.10 (15536320..15625334, complement)
Table of contents
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General protein information
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Genome Data Viewer
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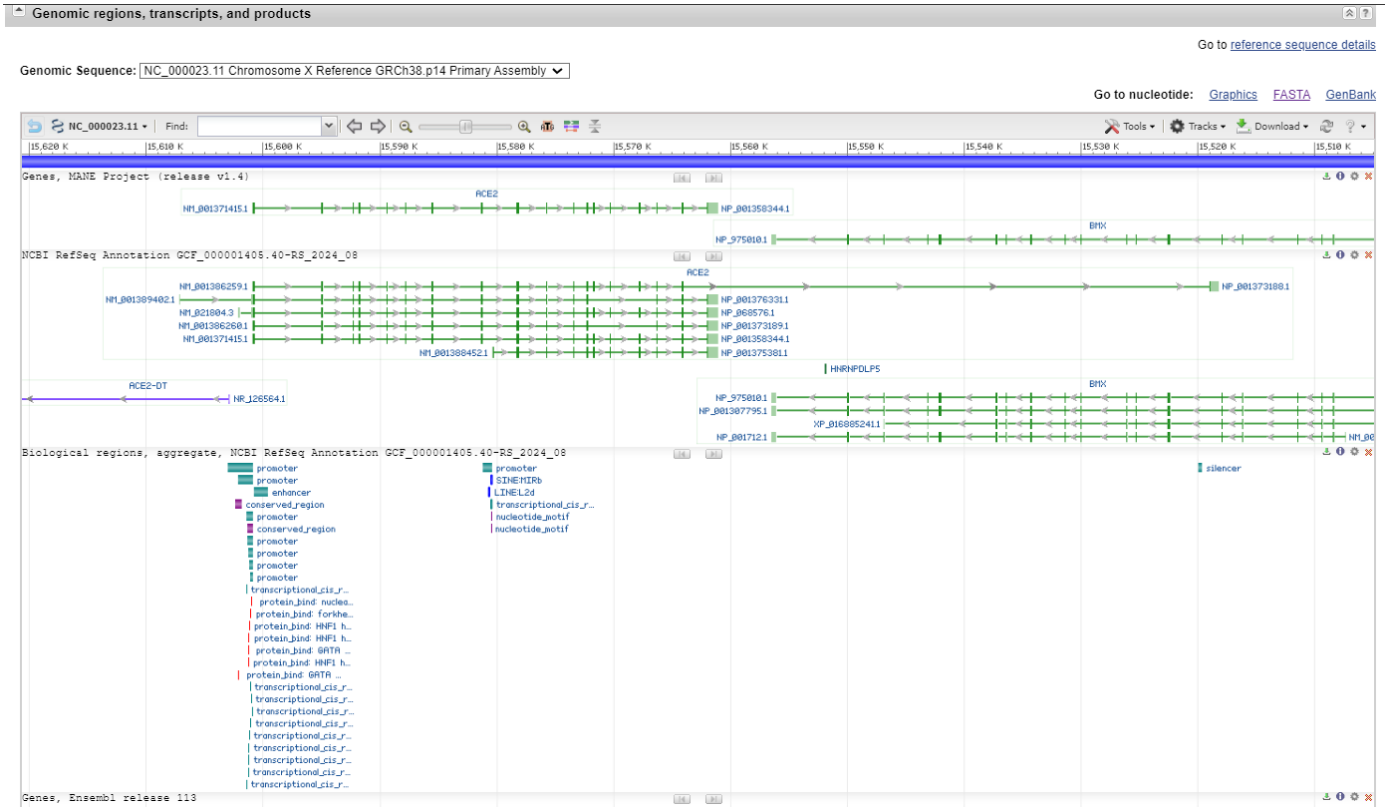
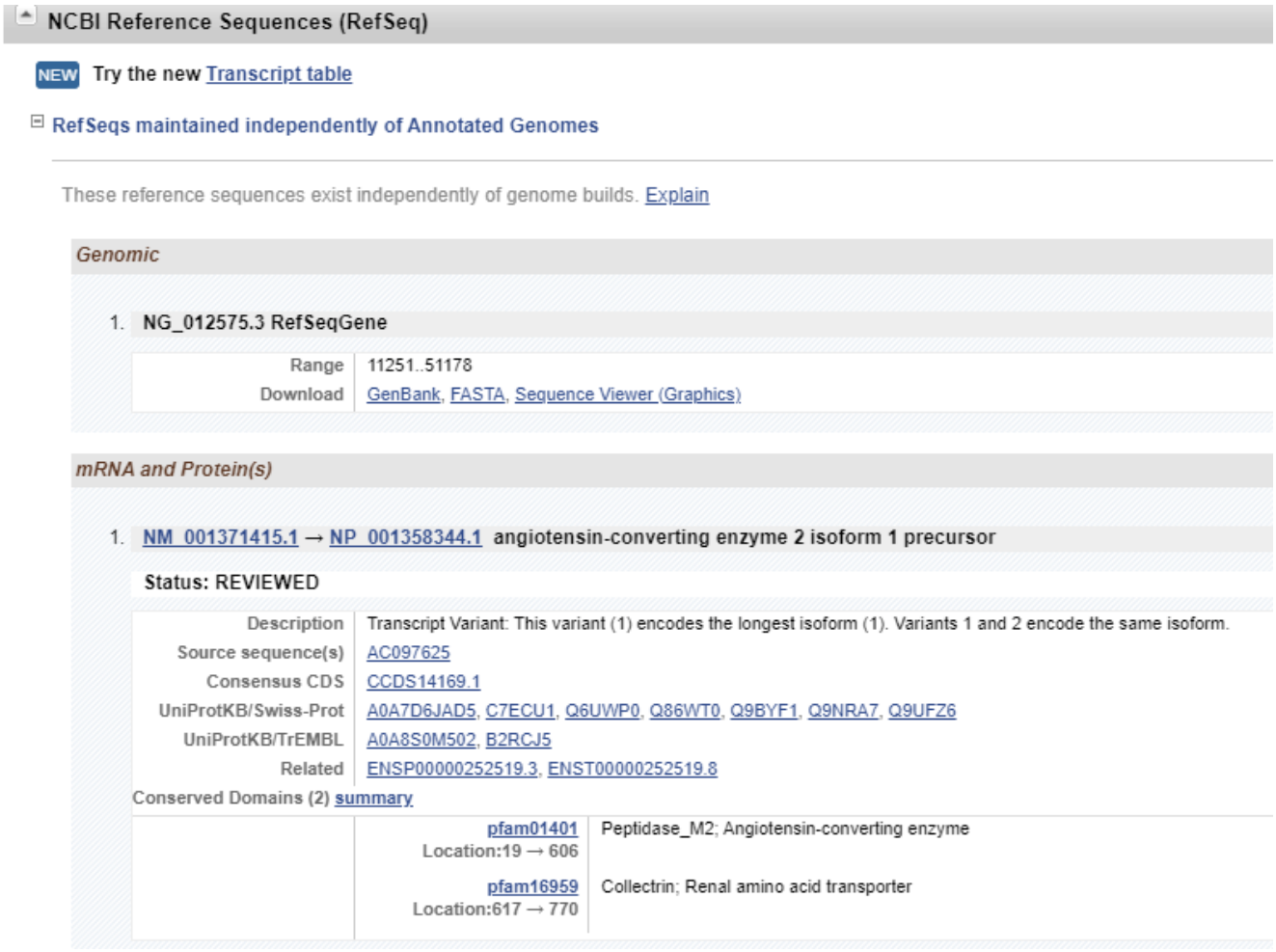
Variation Viewer (GRCh38)
Ensembl
UCSC
Related information
3D structures

3. Pergi ke reference sequence details.



4. Sekarang kita pergi saja ke mRNA and Proteins yang pertama (angiotensin-converting enzyme 2 isoform 1 precursor).



NCBI Reference Sequences (RefSeq)

NEW Try the new Transcript table

RefSeqs maintained independently of Annotated Genomes

These reference sequences exist independently of genome builds. Explain

*Genomic*

1. NG_012575.3 RefSeqGene

| | |
|---|---|
| Range | 11251..51178 |
| Download | GenBank, FASTA, Sequence Viewer (Graphics) |

*mRNA and Protein(s)*

1. NM_001371415.1 → NP_001358344.1 angiotensin-converting enzyme 2 isoform 1 precursor

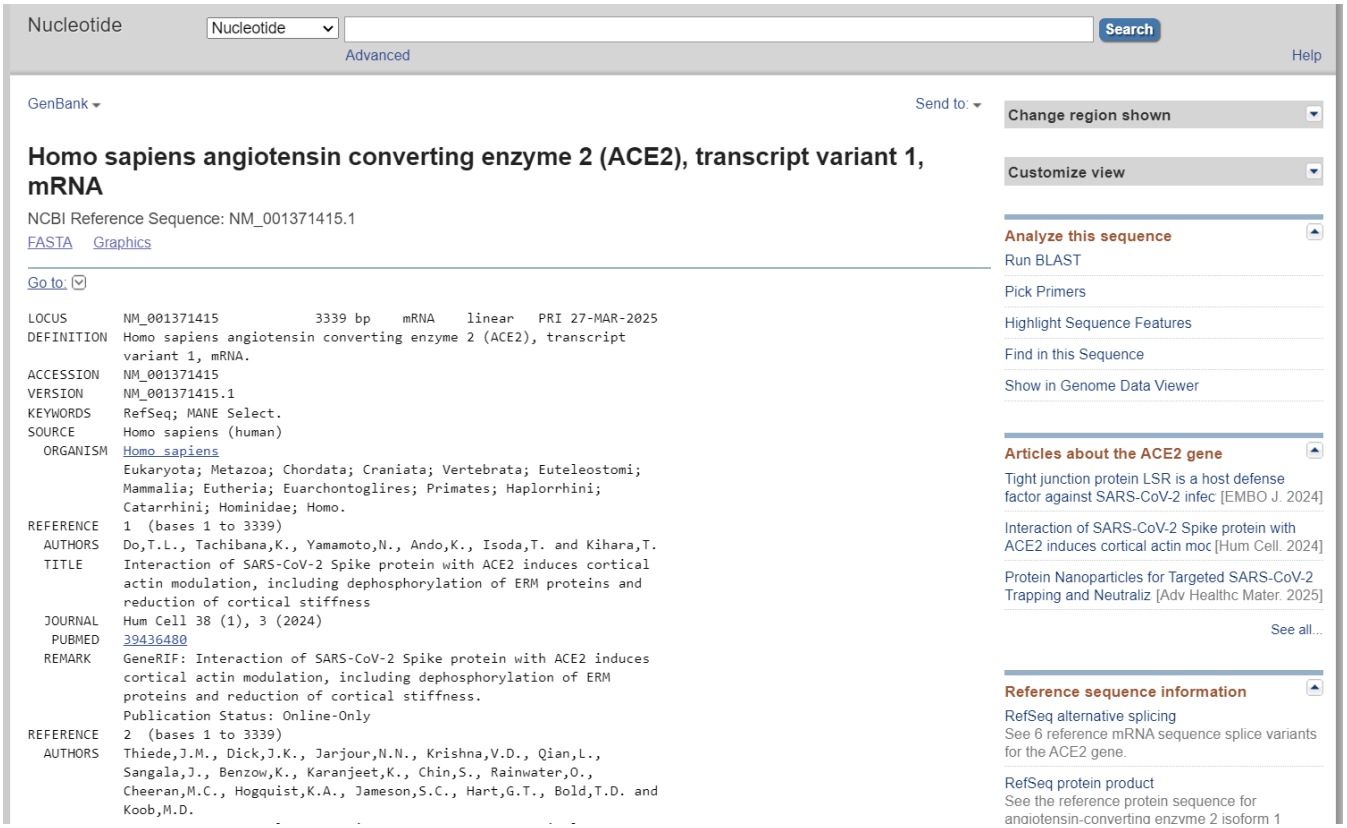
Status: REVIEWED

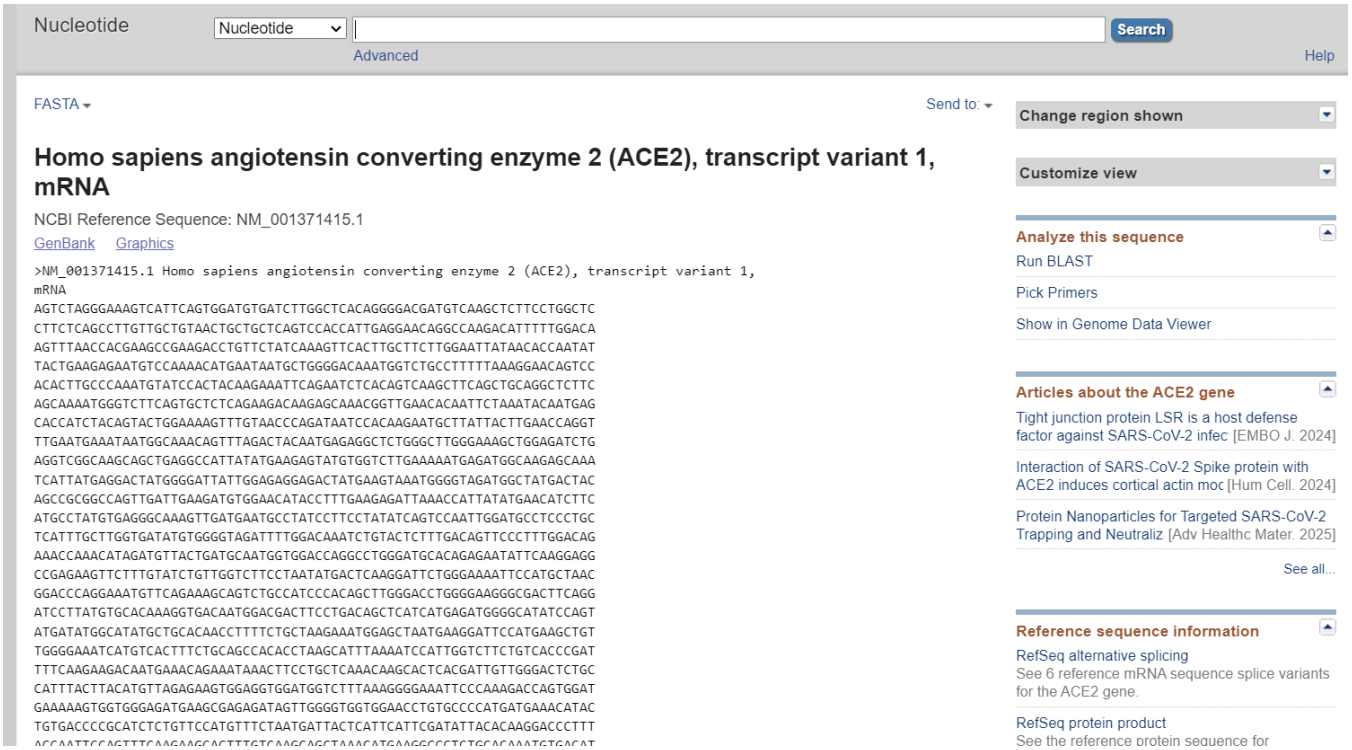
| | |
|---|---|
| Description | Transcript Variant: This variant (1) encodes the longest isoform (1). Variants 1 and 2 encode the same isoform. |
| Source sequence(s) | AC097625 |
| Consensus CDS | CCDS14169.1 |
| UniProtKB/Swiss-Prot | A0A7D6JAD5, C7ECU1, Q6UWP0, Q86WT0, Q9BYF1, Q9NRA7, Q9UFZ6 |
| UniProtKB/TrEMBL | A0A8S0M502, B2RCJ5 |
| Related | ENSP00000252519.3, ENST00000252519.8 |

Conserved Domains (2) summary

| | | |
|---|---|---|
| | pfam01401<br>Location:19 → 606 | Peptidase_M2; Angiotensin-converting enzyme |
| | pfam16959<br>Location:617 → 770 | Collectrin; Renal amino acid transporter |

5. Sekarang kita klik saja FASTA untuk melihat Sequence nya.



6. Terakhir kita tinggal mendownloadnya (send to) lalu pilih format nya dalam FASTA, nantinya kita dapat melihat isi file FASTA tersebut menggunakan notepad.

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