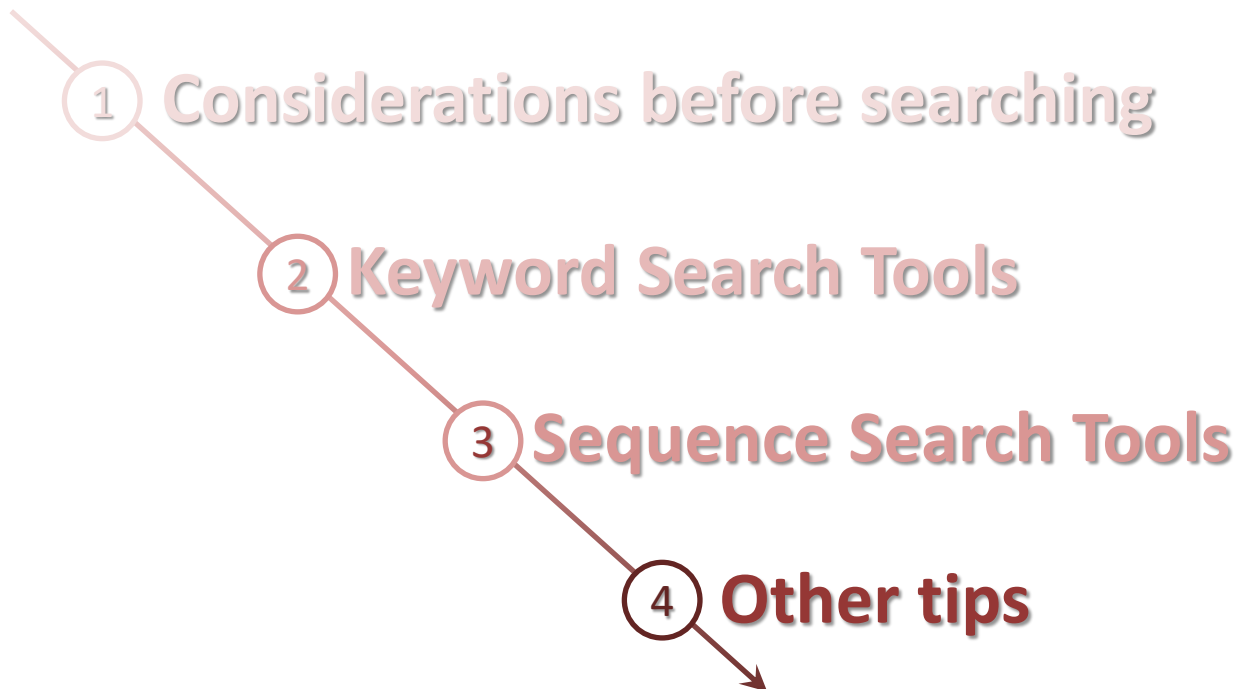


KIPO's Practices and Tools for Searching Inventions Related to Biosequences

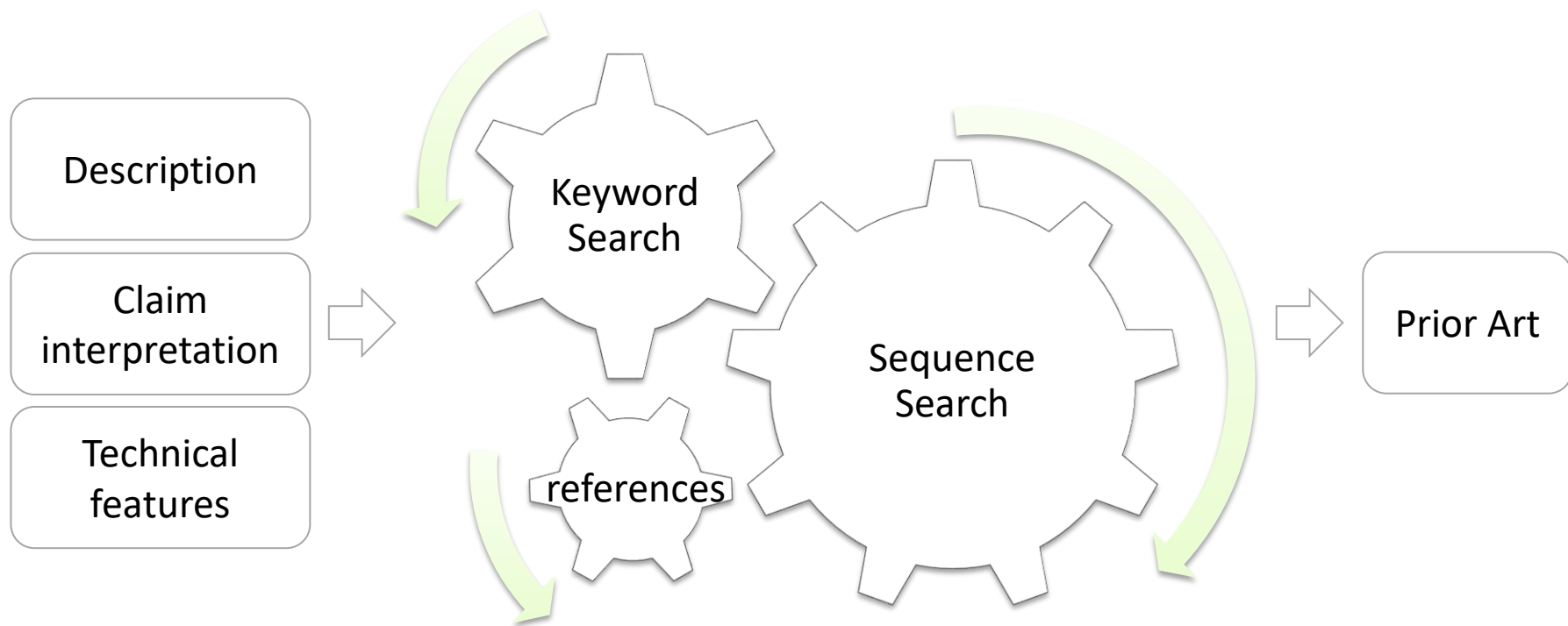
May 20, 2019

Eunyoung Kim
Patent Examiner / Ph.D.

Biotechnology Examination Division
Korean Intellectual Property Office



Considerations before searching





- **Genes, DNA or RNA fragments**
e.g. genes, primers, probes, siRNA, miRNA, SNP or vectors
 - **Proteins or peptides**
e.g. enzymes, antibodies or epitopes
 - **Microorganisms**
e.g. bacteria, fungi, virus or cell-line
 - **Animals excluding a human being or plants**
e.g. transgenic mouse
-
- **Medical use (Pharmaceutical Composition)**
 - **Detection or measurement method**

Products

Genes, DNA or RNA fragments



➤ Claimed using nucleotide sequences

Claim 1. A **gene** X consisting of a nucleotide sequence of SEQ ID NO: 1.

Claim 2. A recombinant **vector** containing a nucleotide sequence of claim 1.

Claim 3. An **oligonucleotide** having the nucleotide sequence SEQ NO. 2 - 5'-AGCTCCAGCTTCAATTTGCTCT-3.

```
Seq_1020147034356.txt - 메모장
파일(F) 편집(E) 서식(O) 보기(V) 도움말(H)
SEQUENCE LISTING
<110> Jiang, Ping
Karsunky, Holger
Tressler, Rob
Cellerant Therapeutics, Inc.
<120> Antibodies Specific for CLL-1
<130> 92950-874248
<140> WO Not yet assigned
<141> Not yet assigned
<150> US 61/643,739
<151> 2012-05-07
<150> US 61/699,134
<151> 2012-09-10
<150> US 13/794,525
<151> 2013-03-11
<160> 98
<170> FastSEQ for Windows Version 4.0
<210> 1
<211> 801
<212> DNA
<213> Homo sapiens
<220>
<223> human C-type lectin-like molecule 1 (CLL-1), C-type lectin domain
family 12 member A (CLEC12A), dendritic cell-associated lectin 2
(DCAL-2), myeloid inhibitory C-type lectin-like receptor (MIL),
C-type lectin protein
<400> 1
atgtctgaag aagtactta tgcagatctt caattccaga actccagtga gatggaaaaa 60
atcccagaaa ttggcaaat tgggaaaaaa gcacctccag ctccctctca tgatggcgt 120
ccagcagcct tgttctgac tcttctgtgc cttctgttgc tcattggatt gggagctttg 180
gcaagcatgt ttcattgtaac ttgaagata gaattgaaa aaatgaacaa actacaaaac 240
atcagtgaa agctccagag aaatatctc ctacaactga tgaatgaact gaatatctcc 300
aacaagatca ggaacctctc caccacactg caacaatag ccaccaaat atgtcgtgag 360
ctatatgca aagaacaaga gcacaatgt aagccttgtc caaggagatg gatttggcat 420
aaggacagct gttatttct aagtgatgat gtccaaacat ggcaggagag taaaatggcc 480
tgtctctc agaatgccag cctgttgaag ataaacaaca aaaatgcatt gaaatttata 540
aaatcccaga gtatgata tgaatttgg ctgggattat ctctgaaga agattccact 600
cgtggatga gaaggataa tataatcaac tctctgacct gggttataag aaacgacct 660
gacttaata acatgtattg tggatatata aatagactat atgttcaata ttatcactgc 720
acttataaac aaagaatgat atgtgagaag atggccaatc cagtgcagct tggttctaca 780
tattttaggg aggcattgagg c 801
```



➤ Claimed using amino acid sequences

Claim 4. A **peptide** Y consisting of an amino acid sequence of SEQ ID NO: 3.

Claim 5. A **protein** Z comprising an amino acid sequence of SEQ ID NO: 4.

Claim 6. An isolated **antibody or an antigen binding fragment thereof** that binds to human ROBO4 protein, wherein the antibody consists of (a) a heavy chain comprising CDR-H1 consisting of the amino acid sequence of SEQ ID NO: 5, CDR-H2 consisting of the amino acid sequence of SEQ ID NO: 6 and CDR-H3 consisting of the amino acid sequence of SEQ ID NO: 7, and (b) a light chain comprising CDR-L1 consisting of the amino acid sequence of SEQ ID NO: 8, CDR-L2 consisting of the amino acid sequence of SEQ ID NO: 9 and CDR-L3 consisting of the amino acid sequence of SEQ ID NO: 10.



Claim 7. A **pharmaceutical composition** comprising an **antibody** or an antigen binding fragment thereof according to claim 6 for use in treating or preventing **rheumatoid arthritis**.

Claim 8. The **method** for treating or preventing **rheumatoid arthritis** comprising administering to a subject in need thereof an effective amount of an **antibody** or an antigen binding fragment thereof according to claim 6 or administering a pharmaceutical composition according to claim 7 .



① Considerations before searching

② **Keyword Search Tools**

③ Sequence Search Tools

④ Other tips

Keyword Search Tools



- In-house search engine: KOMPASS
- Free search engines: Google Patent, WIPO PatentScope, PubMed, Naver, etc.
- Commercial services: STN, Derwent, etc.

1) Advantages

- more databases available & easy access
- finds documents having the same technical content
- both patent and NPL databases are available for Keyword searching
- used to identify a starting document for thread searching

2) Disadvantages

- technical knowledge of the field is required (+ jargon and synonyms)
- hard to search specific sequence

STN – Keyword Search



- **STN** is an online database service that provides global access to published research, journal literature, patents, structures, sequences, properties, and other data.
- A significant advantage as compared to free information services is the **value-add** generated by human experts: the original information is upgraded step by step with additional, more useful information and features.
- It allows for a much higher recall and precision of search results.



Retrieved from STN website



Chemical Abstracts Plus (CAplusSM)

CAplus covers patent and journal article references from all areas of chemistry, biomedical sciences, engineering, materials science and agricultural science. Coverage goes back to 1907. The file is updated daily.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s CD22 and antibod? and nemorubicin

2297 CD22

881424 ANTIBOD?

128 NEMORUBICIN

2 NEMORUBICINS

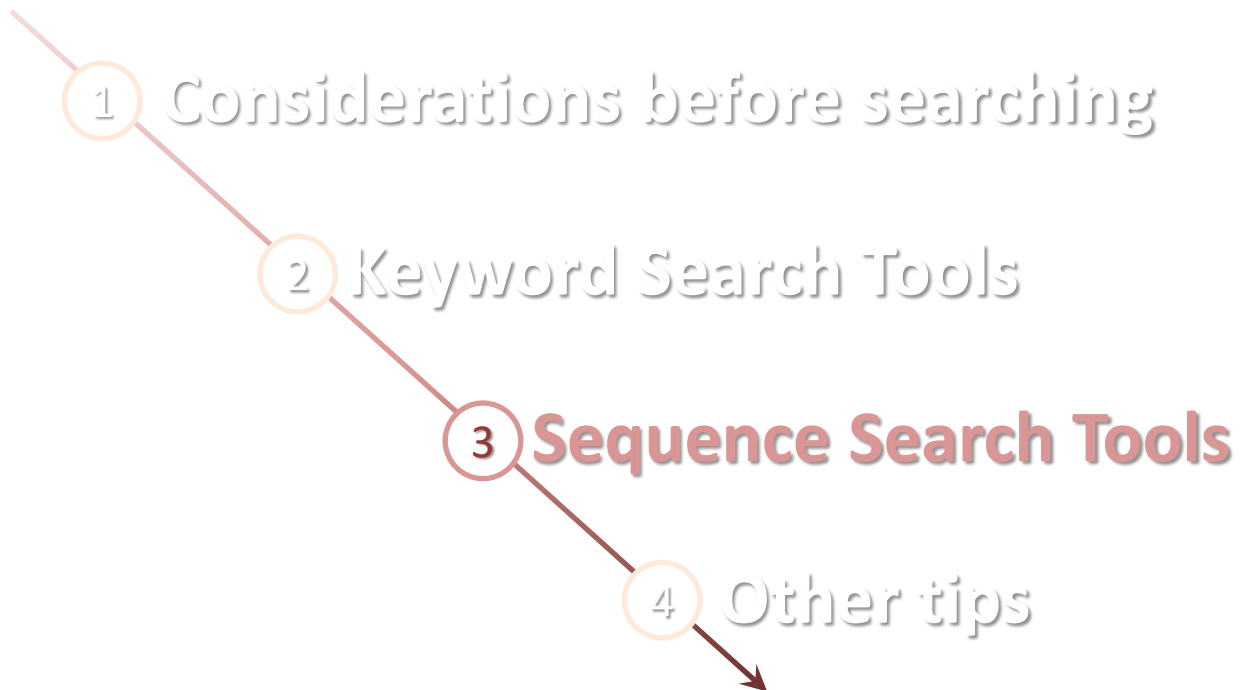
128 NEMORUBICIN

(NEMORUBICIN OR NEMORUBICINS)

L1

1 CD22 AND ANTIBOD? AND NEMORUBICIN

Data obtained using STN





Nucleotide or Amino Acid Sequence Search

- In-house search engine: KOMPASS
- Public DBs: NCBI, EMBL, DDBJ, etc
- Commercial DBs: DGENE, Registry, PCTGEN & USGENE used in STN

1) Advantages

- possible to conduct both identity and homology searching
- identified sequences are often hyperlinked to related documents
- does not require a detailed knowledge of the technology to which the sequence relates

2) Disadvantages

- cannot be limited to functions of gene or protein



Go to <https://blast.ncbi.nlm.nih.gov/Blast.cgi>

The screenshot displays the NCBI BLAST web interface. At the top, there are navigation links for 'Home', 'Recent Results', 'Saved Strategies', and 'Help'. The main heading is 'Standard Protein BLAST'. Below this, there are tabs for different BLAST programs: 'blastn', 'blastp', 'blastx', 'tblastn', and 'tblastx'. The 'blastp' tab is selected. The main form area includes a text input field for 'Enter Query Sequence' containing the text 'FASTA Seq. with one letter code'. There are also fields for 'Job Title' and 'Choose Search Set' (set to 'Non-redundant protein sequences (nr)'). A 'New Results page' notification is visible in the bottom right corner.



Three to One : conversion of three letter code to one letter code

(http://bioinformatics.org/sms2/three_to_one.html)

```
<210> 28
<211> 847
<212> PRT
<213> Homo sapiens
```

```
<400> 28
Met His Leu Leu Gly Pro Trp Leu Leu Leu Leu Val Leu Glu Tyr Leu
1          5          10          15
Ala Phe Ser Asp Ser Ser Lys Trp Val Phe Glu His Pro Glu Thr Leu
20          25          30
Tyr Ala Trp Glu Gly Ala Cys Val Trp Ile Pro Cys Thr Tyr Arg Ala
35          40          45
Leu Asp Gly Asp Leu Glu Ser Phe Ile Leu Phe His Asn Pro Glu Tyr
50          55          60
Asn Lys Asn Thr Ser Lys Phe Asp Gly Thr Arg Leu Tyr Glu Ser Thr
65          70          75          80
Lys Asp Gly Lys Val Pro Ser Glu Gln Lys Arg Val Gln Phe Leu Gly
85          90          95
Asp Lys Asn Lys Asn Cys Thr Leu Ser Ile His Pro Val His Leu Asn
100         105         110
```

Three to One

주소: bioinformatics.org/sms2/three_to_one.html

Sequence Manipulation Suite - Chrome

about:blank

Three to One results

```
>results for sequence "sequence 1" starting "MetHisLeuLeu"
MHL L G P W L L L L V L E Y L A F S D S S K W V F E H P E T L Y A W E G A C V W I P C T Y R A L D G D L E S F I L F H
N P E Y N K N T S K F D G T R L Y E S T K D G K V P S E Q K R V Q F L G D K N K N C T L S I H P V H L N D S G Q L G L R
M E S K T E K W M E R I H L N V S E R P F P P P H I Q L P P E I Q E S Q E V T L T C L L N F S C Y G Y P I Q L Q W L L E G
V P M R Q A A V T S T S L T I K S V F T R S E L K F S P Q W S H H G K I V T C Q L Q D A D G K F L S N D T V Q L N V K H
T P K L E I K V T P S D A I V R E G D S V T M T C E V S S S N P E Y T T V S W L K D G T S L K K Q N T F T L N L R E V T
K D Q S G K Y C C Q V S N D V G P G R S E E V F L Q V Q Y A P E P S T V Q I L H S P A V E G S Q V E F L C M S L A N P L
P T N Y T W Y H N G K E M Q G R T E E K V H I P K I L P W H A G T Y S C V A E N I L G T G O R G P G A E L D V Q Y P P K
K V T T V I Q N P M P I R E G D T V T L S C N Y N S S N P S V T R Y E W K P H G A W E E P S L G V L K I Q N V G W D N T
T I A C A R C N S W C S W A S P V A L N V Q Y A P R D V R V R K I K P L S E I H S G N S V S L Q C D F S S S H P K E V Q
F F W E K N G R L L G K E S Q L N F D S I S P E D A G S Y C W V N N S I G Q T A S K A W T L E V L Y A P R R L R V S M
S P G D Q V M E G K S A T L T C E S D A N P P V S H Y T W F D W N N Q S L P H S Q K L R L E P V K V Q H S G A Y W C Q
G T N S V G K G R S P L S T L T V Y Y S P E T I G R R V A V G L G S C L A I L I L A I C G L K L Q R R W K R T Q S Q Q G
L Q E N S S G Q S F F V R N K K V R R A P L S E G P H S L G C Y N P M M E D G I S Y T T L R F P E M N I P R T G D A E S
S E M Q R P P R T C D D T V T Y S A L H K R Q V G D Y E N V I P D F P E D E G I H Y S E L I Q F G V G E R P Q A Q E N V
D Y V I L K H
```



NCBI Search Results

Protein BLAST: search protein d x +
https://blast.ncbi.nlm.nih.gov/Blast.cgi?PROGRAM=blastp&PAGE_TYPE=...
 NIH U.S. National Library of Medicine NCBI National Center for Biotechnology Information

BLAST >> blastp suite

blastn blastp blastx tblastn tblastx

Enter Query Sequence

Enter accession number(s), gi(s), or FASTA sequence(s)

```
> IPOPHL Case 2 - Seq. NO. 28
MHLLGPIILLLLVLEVLAFSDSKWVFEHPETLYAWEGACWII PCTYRALDGOLESF ILFH
NPEYKNKNTSKFDGTRLYVESTKDGKVPSEQKRVQFLGDKNNKNTLSIHPVHLNDSQGLLR
MESKTEKIMMERIHLNVSEKPPPPHILQPPHIDESQEVTLTCLLNFSCYGYPIQLQWLLLEG
VPMRQAAVTS3LTIKSVFTRSELKFSPOWSHHGKIVTCQLQDADGKFLSNDTVQLNVKH
```

Or, upload file: 파일 선택 선택된 파일 없음

Job Title: Enter a descriptive title for your BLAST search

Align two or more sequences

Choose Search Set

Database: Non-redundant protein sequences (nr)

Organism: Optional

Exclude: Optional

Program Selection

Algorithm

- Quick BLASTP (Accelerated protein-protein BLAST)
- blastp (protein-protein BLAST)
- PSI-BLAST (Position-Specific Iterated BLAST)
- PHI-BLAST (Pattern Hit Initiated BLAST)
- DELTA-BLAST (Domain Enhanced Lookup Time Accelerate)

Choose a BLAST algorithm

BLAST Search database nr using Blastp (protein-protein BLAST)

Show results in a new window

BLAST >> blastp suite >> RID-DFT1MW4B015 Home Recent Results Saved Strategies

BLAST Results

Edit and Resubmit Save Search Strategies Formatting options Download

Job title: results for [YouTube](#) [How to read this page](#) [Blast report description](#) **NEW** [Click here to see the new BL](#)

RID [DFT1MW4B015](#) (Expires on 05-13 17:15 pm)

Query ID: IcdQuery_132602
 Description: results for sequence "Untitled" starting "MetHisLeuLeu"
 Database Name: nr
 Description: All non-redundant GenBank CD translations+PDB+SwissProt+P environmental samples from W
 Molecule type: amino acid
 Query Length: 847
 Program: BLASTP 2.9.0+ [Citation](#)

Other reports: [Search Summary](#) [Taxonomy reports](#) [Distance tree of results](#) [Multiple alignment](#) [MSA viewer](#)

Analyze your query with [SmartBLAST](#)

Graphic Summary

Show Conserved Domains

Putative conserved domains have been detected, click on the image below for detailed results.

Query seq. Specific hits Superfamilies

Distribution of the top 103 Blast Hits on 100 subject sequences

Mouse over to see the title, click to show alignments

Color key for alignment scores

- <40 (black)
- 40-50 (blue)
- 50-80 (green)
- 80-200 (magenta)
- >=200 (red)



Sequences producing significant alignments:

Select: [All](#) [None](#) Selected: 0

[Alignments](#)
[Download](#)
[GenPept](#)
[Graphics](#)
[Distance tree of results](#)
[Multiple alignment](#)

	Description	Max Score	Total Score	Query Cover	E value	Per. Ident	Accession
<input type="checkbox"/>	B Cell membrane protein CD22 [Homo sapiens]	1766	1766	100%	0.0	100.00%	CAA42006.1
<input type="checkbox"/>	B-cell receptor CD22 isoform 1 precursor [Homo sapiens]	1756	1756	100%	0.0	99.53%	NP_001762.2
<input type="checkbox"/>	unnamed protein product [Pan paniscus]	1715	1715	100%	0.0	97.05%	XP_008967442.1
<input type="checkbox"/>	B-cell receptor CD22 isoform X2 [Pan troglodytes]	1714	1820	100%	0.0	96.93%	XP_016791164.1
<input type="checkbox"/>	B-cell receptor CD22 isoform X6 [Pan troglodytes]	1712	1712	100%	0.0	96.93%	XP_009433584.2

[Download](#)
[GenPept](#)
[Graphics](#)

B Cell membrane protein CD22 [Homo sapiens]

Sequence ID: [CAA42006.1](#) Length: 847 Number of Matches: 1

Range 1: 1 to 847 [GenPept](#) [Graphics](#)

[Next Match](#)
[Previous Match](#)

Score	Expect	Method	Identities	Positives	Gaps
1766 bits(4575)	0.0	Compositional matrix adjust.	847/847(100%)	847/847(100%)	0/847(0%)
Query 1	MHLLGPWLLLLLVLEVLAFSDSSKWWFEHPETLYAWEGACYWI PCTYRALDGDLESFLLFH	60			
Sbj ct 1	MHLLGPWLLLLLVLEVLAFSDSSKWWFEHPETLYAWEGACYWI PCTYRALDGDLESFLLFH	60			
Query 61	NPEYKNTSKFDGTRLYESTKDGKVPSEQKRVQFLGDKNKNTLSIHPVHLNDSGQLGLR	120			
Sbj ct 61	NPEYKNTSKFDGTRLYESTKDGKVPSEQKRVQFLGDKNKNTLSIHPVHLNDSGQLGLR	120			
Query 121	MESKTEKWMERHLNYSERFFPPHQLPPEIQESQEVTLTQLNFSYGVPIQLQWLLLEG	180			
Sbj ct 121	MESKTEKWMERHLNYSERFFPPHQLPPEIQESQEVTLTQLNFSYGVPIQLQWLLLEG	180			
Query 181	VPMRQAAVTSTSLTIKSVFTRSELKFSPOWSHHGKIYTCQLQDADGKFLSNDTVQLNVKH	240			
Sbj ct 181	VPMRQAAVTSTSLTIKSVFTRSELKFSPOWSHHGKIYTCQLQDADGKFLSNDTVQLNVKH	240			



Why sequence searching on STN

- Comprehensiveness: largest collection of sequence data
 - **DGENE (Derwent Geneseq™)**
 - **CAS REGISTRYSM**
 - **USGENE**
 - **PCTGEN**
- Reliability: value-added data
- Flexibility:
 - Different search algorithms (BLAST, GETSIM, GETSEQ)
 - Combination with text searching in DWPI, CAplus, and INPADOC
 - STN's sophisticated search language including script language

Retrieved from STN website



- **Searching for nucleic acid and amino acid Sequence**

- **Exact and Pattern Searching**

Search Type	Proteins	Nucleic Acids
Exact	/SQEP	/SQEN
Exact Family	/SQEFP	Not Applicable
Subsequence	/SQSP	/SQSN
Subsequence Family	/SQSFP	Not Applicable

Retrieved from STN website

- **BLAST Search**

STN Sequence Search



Nucleic acid Sequence Search

The screenshot shows the STNNext web interface with two browser tabs. The left tab shows the search results for the sequence SCACCAGGGTCTGGAATATGT/SQSN. The right tab shows the search results for the sequence CACCAGGGTCTGGAATATGT/SQSN. The interface includes a search bar, a 'Submit' button, and a 'Session' history panel on the right.

Left Tab (STNNext):

- Transcript ON IPOP HL Sa
- File REGISTRY <http://www.cas.org/training/s>
- => `scaccaggggtctggaatagt/sqs`
- SCACCAGGGTCTGGAATATGT IS NOT
- The previous command name ent
- For a list of commands availa
- "HELP COMMANDS" at an arrow p
- => `s scaccaggggtctggaatagt/s`
- L1 0 SCACCAGGGTCTG
- => `s caccaggggtctggaatagt/sq`
- L2 2 CACCAGGGTCTGG
- =>
- ^ => |enter command

Right Tab (STNNext):

- Transcript ON IPOP HL Sample Case1
- File CAPLUS
- REVISED CLASS FIELDS (/NCL) LAST RELOADED: Dec 2015
- USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Dec 2015
- CAPLUS now includes the comprehensive Cooperative Patent Classification (CPC). See [HELP CPC](#) for details.
- CAS Information Use Policies apply and are available at:
- <http://www.cas.org/legal/infopolicy>
- This file contains CAS Registry Numbers for easy and accurate substance identification.
- => `s 12`
- L3 2 L2
- =>
- ^ => |d abs bib l3 1-2 hitseq|
- Submit

Session History:

- Entered HOME 05:14:27 ON 11 MAY 2019
- Entered REGISTRY 05:15:10 ON 11 MAY 2019
- L1 0 S SCACCAGGGTCTGGAATATGT/SQSN
- L2 2 S CACCAGGGTCTGGAATATGT/SQSN
- Entered CAPLUS 05:22:38 ON 11 MAY 2019
- L3 2 S L2

Data obtained using STN

STN Sequence Search



L3 2 L2

=> d abs bib l3 1-2 hitseq

L3 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2019 ACS on STN

AB DNA probes of varying lengths and amplified product sizes for use in simultaneous and comprehensive detection of different bacterial pathogens are described. A qPCR assay successfully detected the individual species in single or mixed DNA conditions. Multi-species specificity tests proved

the high specificity of each probe to specific bacter. Optimized qPCR conditions enabled discrimination on t specificity of each probe. The DNA probe kits are al form integral components in qPCR assay along with the protocols for bacterial pathogen detection. The curr also utilized for comprehensive clin. diagnosis in hu organisms.

PatentPak PDF

AN 2018:1315613 CAPLUS [Full-text](#)

DN 169:480497

TI Use of oligonucleotides probes for detection of bacte milkfish using real time PCR

IN Barlaan, Edward A.

PA Philippines

SO Philipp. Pat. Appl., 26pp.

CODEN: PHXXAQ

DT Patent

LA English

FAN.CNT 1

PPPI

PATENT NO.	KIND	DATE	LANGUAGE	PatentPak
PH 1201600444	A1	20180604	English	PDF
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PH 1201600444	A1	20180604	PH 2016-1201600444	20161129
PRAI PH 2016-1201600444		20161129		
IT 2248026-43-7				
RL: BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)				
(probe sequence; use of oligonucleotides probes for detection of bacterial pathogens in milkfish using real time PCR)				
RN 2248026-43-7 CAPLUS				
CN DNA, d(C-A-C-C-A-G-G-G-G-T-C-T-G-G-A-A-T-A-T-G-T) (CA INDEX NAME)				

SEQ 1 caccaggggt ctggaatag t

Data obtained using STN

STN Sequence Search



Amino acid Sequence Search - antibody

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

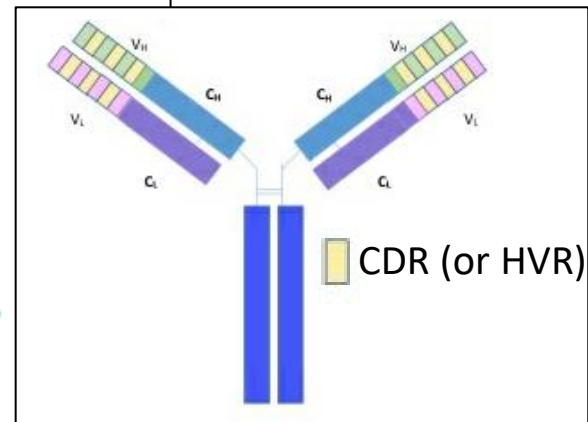
<http://www.cas.org/training/stn/database-specific>

=> S **CDR-H1** **CDR-H2** **CDR-H3**
GYEFSRSWMN.+GRIYPGDGD TNYSGKFKG.+DGSSWDWYFDV/SQSP

L1 31 GYEFSRSWMN.+GRIYPGDGD TNYSGKFKG.+DGSSWDWYFDV/SQSP

=> S **CDR-L1** **CDR-L2** **CDR-L3**
RSSQSIVHS[NVAQSDI]G[NIQ]TFLE.+KVS NRFS.+FQGSQFPYT/SQSP

L2 30 RSSQSIVHS[NVAQSDI]G[NIQ]TFLE.+KVS NRFS.+FQGSQFPYT/SQSP



Data obtained using STN

STN Sequence Search



=> D L1 CN SQL SEQ 28-31

L1 ANSWER 28 OF 31 REGISTRY COPYRIGHT 2019 ACS on STN

CN Immunoglobulin, chimeric, anti-(Human CD22 (antigen)) (synthetic Mus musculus clone ch10F4 heavy chain V region) (CA INDEX NAME)

OTHER NAMES:

CN 45: PN: W02007140371 SEQID: 34 claimed protein

SQL 120

```
SEQ      1 QVQLQQSGPE LVKPGASVKI SCKASGYEFS RSWMNWVKQR PGQGREWIGR
          =====
          51 IYPGDGDTNY SGKFKGKATL TADSSSSTAY MQLSSLTSVD SAVYFCARDG
          =====
          101 SSWDWYFDVW GAGTTVTVSS
          =====
```

HITS AT: 26-109

HVR H1 : GYEFSSWMMN
HVR H2 : GRIYPGDGDTNYSKFKG
HVR H3 : DGSSWDWYFDV

Data obtained using STN

STN Sequence Search



CAS Registry BLAST Search

Data obtained using Blast Client

Similar Sequences
File Edit Help

Result Name (optional): IPOPHL_case 2_Seq No 28

Sequence to be searched:

```
MHLLGPWLLLLLVEYLAFSDSSKIIWFHEHPETLYAWEGACVWIPCTYR  
NPEYKNKNTSKFDGTRLVESTKDGKVPSEQKRVQFLGDKNKNCTLSIH  
MESKTEKIIMERIHNLVNSERPFPPHQLLPEIQESQEVTLTCLLNFS  
VPMRQAAVTSTSLTIKSVFTRSELKFSPIQSHHGKI VTCQLQDADGK  
TPKLEIKVTPSDAIVREGDSVTMTCEVSSSNPEYTTVSWLKDGTSLK
```

Example #1: a nucleotide sequence
tcccctctcc ctatgcaggt tcctcgtgc aggcagcgc
gactcattat cagcaaatct gggagaaact gtcaggata
aggtagctat gattatggtt ggcaccagca gaatcacc
ctgtcactgt gatctatagc aacaacaaga gaccctcgg

Example #2: a protein sequence
TYDQHLGSHLYEALYSVWVYHEAKGLPRAAAGAPGVRALWL
QLFWAERHFHEALPPARRLSRLRGLGPGSAVLGRVALALEE
PLLGAPAGAALRARIRARRLRVLPSEYKELAEFLTFHYARL

OK

CAS Registry BLAST® Report - IPOPHL_case 2_Seq No 28
File Edit View Search Tools Help

Unique Sequences: 1,000 Redundant: 978 Selected Results: 0

Alignment Scores

<40 40-50 **50-80** 80-200 >=200

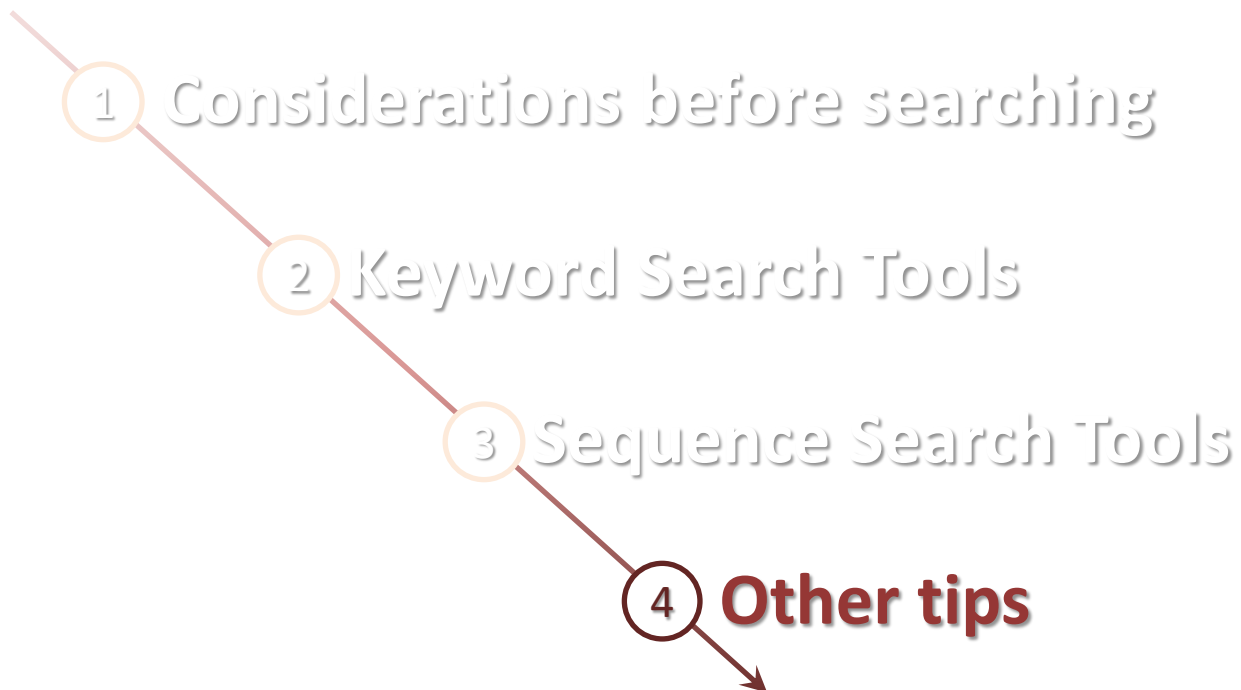
Alignment Summary

1 213 424 636 847

Alignment Details

<input type="checkbox"/>	<input checked="" type="checkbox"/>	1766	0.0	(1537228-13-9)	Sialic acid-binding Ig-like lectin 2 (human clone WO2014/011518-SEQID-28 precursor)
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1764	0.0	(133483-02-0)	Antigen CD 22 (human clone 66,2 precursor protein moiety reduced)
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1761	0.0	(1092877-75-2)	6: PN: WO2008156069 SEQID: 8 unclaimed protein
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1756	0.0	(1458204-08-4)	12: PN: WO2013139789 SEQID: 12 unclaimed protein
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1754	0.0	(1203771-89-4)	360: PN: WO2010006215 SEQID: 360 unclaimed protein
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1753	0.0	(1537926-49-0)	37: PN: WO2014014821 SEQID: 37 unclaimed protein
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1751	0.0	(595620-10-3)	CD22 (antigen) (human)
<input type="checkbox"/>	<input type="checkbox"/>	1727	0.0	(1537228-18-4)	Sialic acid-binding Ig-like lectin 2 (human clone WO2014/011518-SEQID-29)

Get STN Data Script Cancel





Single Nucleotide Polymorphism(SNP)

SNPs are single base pair positions in genomic DNA at which different sequence alternatives (alleles) exist in normal individuals in some population(s), wherein the least frequent allele has an abundance of 1% or greater.

DBs frequently used for SNP searching

Database	Keyword Search	Sequence Search
STN Registry	○	○
dbSNP	○	○
GWAS Central	○	○
Genecards	○	
OMIM	○	
HAP™ Database	○	



- dbSNP: NCBI's SNP database. It covers amongst many other species, human, rodents, pig, cattle and plant species. (<https://www.ncbi.nlm.nih.gov/snp/>)
- GWAS central: summarizes all known SNPs and other variants from public databases such as dbSNP and the DBGV, facilitating genotype-phenotype association analyses. (<https://www.gwascentral.org/>)
- Genecards: a database of human genes, their products, functions and their involvement in diseases. (<https://www.genecards.org/>)
- OMIM: Online Mendelian Inheritance in Man, an online catalog of human genes and genetic disorders. The database contains textual information and references. It also contains links to MEDLINE and other databases. (<https://www.omim.org/>)

KIPRIS - Korean Patent Search



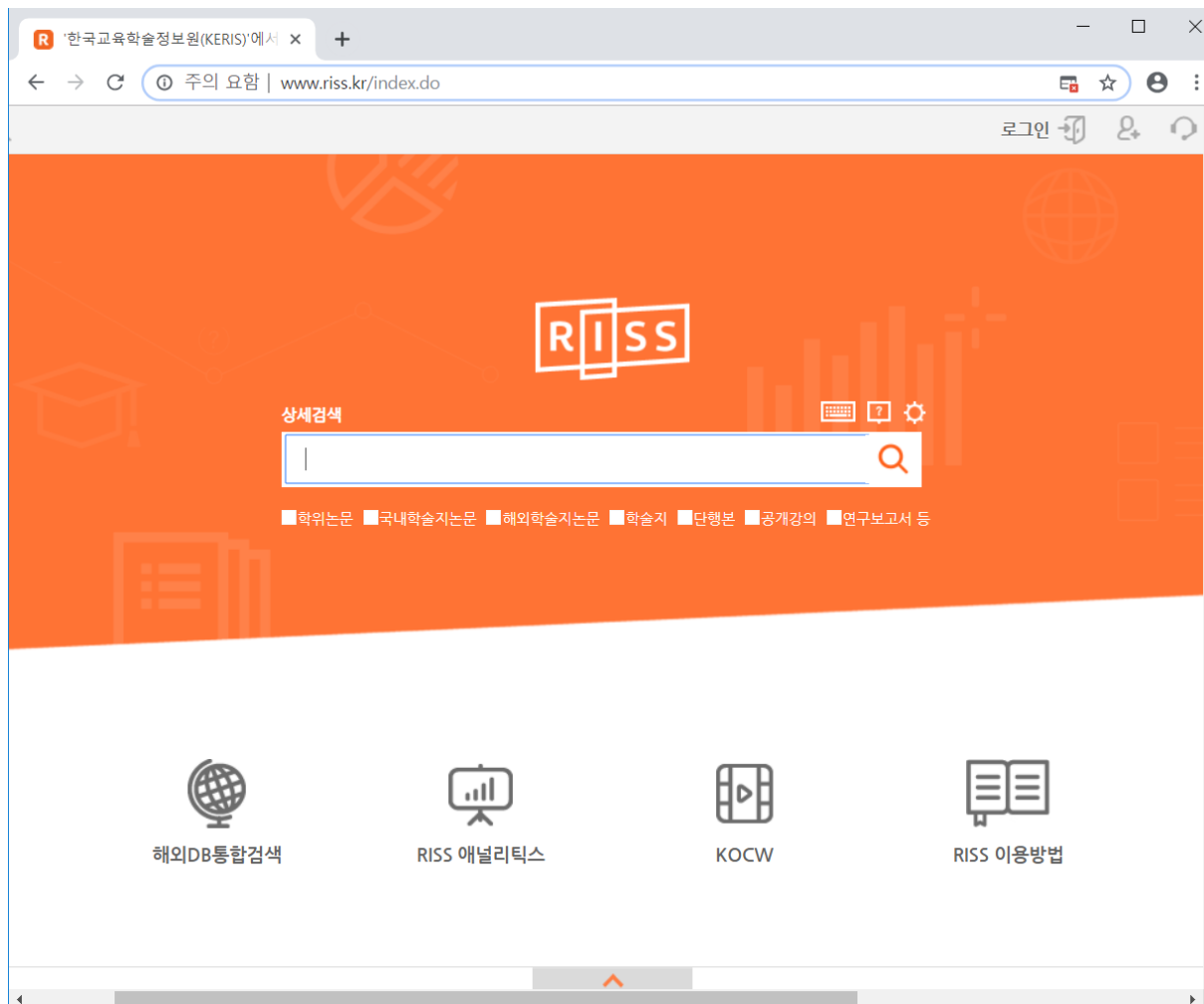
Korean Intellectual Property Rights Information Service (www.kipris.or.kr)

The screenshot displays the KIPRIS website interface for a patent search. The search term 'CD22' is entered in the search bar. The interface includes a navigation menu with 'Patent', 'Design', 'Trademark', and 'KPA' options. A search history section is visible below the search bar. The main search results area shows a list of filters and search criteria:

- Right:** Patent Utility model
- Status:** Entire Unexamined Withdrawn Ended Abandoned Invalidated Rejected Registered
- Free Search (Full Text):** CD22
- IPC:** ex) G06Q + H04Q
- CPC:** ex) G06Q
- Title of Invention (TL):** ex) phone touch screen, electronic*cash, "cellularPhone"
- Abstract (AB):** ex) car + clutch, "dataSignal"
- Number:** Application No. (AN) ex) 1020150123456, Unex. Pub. No. (OPN) ex) 1020160123456, Int'l Application No. (FON) ex) PCT/US1995/012345, Registration No. (GN) ex) 1012345670000, Publication No. (PN) ex) 1019960012345, Int'l Unex. Pub. No. (FON) ex) WO2014123456
- Date:** Publication Date (PD) ex) 20101130, Application Date (AD), Registration Date (GD), Unex. Pub. Date (CFD)

RISS – Korean NPL Search

Visit to www.riss.or.kr



Traditional Knowledge Search




Korean Traditional Knowledge Portal (KTKP)

Visit to <http://www.koreantk.com/ktkp2014/?lang=en>



Hi. KPO Logout



Hi. KPO Logout · Mypage · Board · Sitemap · About KTKP Korean

Scholarly Article
Traditional Medicine
Traditional Food
Livelihood Tech
Creative Cultural Tech

Search Result

All (686)

Articles (230)

Herbs (6)

Prescriptions (432)

Diseases (0)

Dictionary (2)

Local Foods (5)

Arts of Living (11)

Agricultures (0)

Intangible Cultural Heritage (0)

Recently data

- No data

All

Search result by keyword(s): **Schizandra chinensis**

	TITLE / CONTENT
A	Effects of Schizandra chinensis BAILL on Lipid Lowering and Antiox... Plant Resources Vol.7 No.3(216-221), 2004-12-)
	The present study examined the effects of Schizandra chinensis extract on th... rats in which obesity was induced through high fat diet. Fifty male Sprague-... were adjusted to basic diet and laboratory environment and were fed with h...
D	Omija It is the fruit of Schizandra chinensis (=Maximowiczia sinensis). Schizandra sp... The drug has effects on nourishing the liver-gi, generating the body fluid, an...
A	Immunocytochemical study on effect of Schizandra chinensis on en... induced by Alloxan The Journal of Korean Oriental Medicine Vol.12 No.1(139-146), 1975-03-)
	In order to study the effect of Schizandra chinensis on the pancreatic ducts c... Dawley white rats within the weight of 200g were divided into Normal grou... 100mg/kg of Alloxan monohydrate was injected into the caudal artery ve...
A	Biochemical Study on the Effects of the Omija(Schizandra chinensis by Aluminum The Korean Journal of Food And Nutrition Vol.24 No.1(28-36), 2011-03-30)
	To investigate the protective effect of omija(Schizandra chinensis Baillon) tea... Dawley rats(100±10 g) were divided into 6 groups consisting of a control g... extract group, a 1,000 and 2,000 ppm aluminum group, and a 1,000 and 2...

Search Result

All (686)

Articles (230)

Herbs (6)

Prescriptions (432)

Diseases (0)

Dictionary (2)

Local Foods (5)

Arts of Living (11)

Agricultures (0)

Intangible Cultural Heritage (0)

Recently data

- No data

Prescriptions

Search result by keyword(s): **Schizandra chinensis**

1 - 15 / 428, Total 29 Pages

	TITLE / CONTENT
P	황울오미자고(黃栗五味子膏), Donguisasangsinpyeon(東醫四象新編)(1929) Crush and mix the medicines to use.. Omija(五味子)A
P	오미자산(五味子散)A, Donguibogam(東醫寶鑑)(1613) Roast all the medicines until it smells sweet and then crush to fine powder. Mix 7.5g per dose in thin rice gruel to eat on an empty stomach.. Omija(五味子)A, Osuyu(吳茱萸)A
P	생맥산(生脈散)G, Donguisasangsinpyeon(東醫四象新編)(1929) Crush the medicines to use.. Maengmundong(麥門冬)A, Omija(五味子)A
P	이감탕(二甘湯)A, Donguibogam(東醫寶鑑)(1613) Add RHIZOMA ZINGIBERIS RECENS and boil.. Gamcho(甘草)A, Gamcho(甘草)A, Omae(烏梅)A, Omija(五味子)A
P	황울고기탕(黃栗固氣湯), Donguisasangsinpyeon(東醫四象新編)(1929) Slice the medicines and then decoct in water to drink.. Gilgyeong(桔梗), Omija(五味子)A, Jeogeunpi(槿根皮)
P	윤폐환(潤肺丸)A, Donguibogam(東醫寶鑑)(1613)



Go to <https://patentscope.wipo.int/search/en/search.jsf>

WO2013169625 ANTIBODIES SP x +

World Intellectual Property Organization [CH] | <https://patentscope.wipo.int/search/en/detail.jsf?docId...>

Mobile | Deutsch | Español | Français | 日本語 | 한국어 | Português | Русский | 中文 | العربية

WIPO **PATENTSCOPE**
Search International and National Patent Collections

WORLD INTELLECTUAL PROPERTY ORGANIZATION

Search | Browse | Translate | News

Home > IP Services > PATENTSCOPE

1. (WO2013169625) ANTIBODIES SPECIFIC FOR CLL-1

PCT Biblio. Data | Description | Claims | Drawings | **National Phase** | Notices | Documents

Available information on National Phase entries(more information)

Office	Entry Date	National Number	National Status
Australia	03.11.2014	2013259850	Published: 20.11.2014 Granted: 01.02.2018
Canada	03.11.2014	2872513	
Japan	06.11.2014	2015511563	
European Patent Office (EPO)	02.12.2014	2013787381	Published: 18.03.2015 Granted: 26.09.2018
Israel		235397	Granted: 01.04.2019

File Wrappers of Family Patent Application



EPO : <https://register.epo.org>

USPTO : <https://portal.uspto.gov/pair/PublicPair>

JPO : <https://aipn.j-platpat.inpit.go.jp/AI2/cgi-bin/AIPNSEARCH>

The screenshot shows the EPO website interface for a patent application. The main content area displays a list of documents with the following columns: Date and Document type. The list includes various documents such as 'Transmission of the certificate', 'Decision to grant a European patent', '(Electronic) Receipt', 'Filing of the translations of the claims', 'French translation of claims', 'German translation of the claims', 'Letter accompanying subsequently filed items', 'Bibliographic data of the European patent application', 'Communication about intention to grant a European patent', 'Intention to grant (signatures)', 'Text intended for grant', 'Text intended for grant (clean copy)', 'Text intended for grant (sequence listing)', 'Amended claims with annotations', 'Claims', and 'Letter accompanying subsequently filed items'.

Date	Document type
08.10.2018	Transmission of the certificate
30.08.2018	Decision to grant a European patent
13.08.2018	(Electronic) Receipt
13.08.2018	Filing of the translations of the claims
13.08.2018	French translation of claims
13.08.2018	German translation of the claims
13.08.2018	Letter accompanying subsequently filed items
04.04.2018	Bibliographic data of the European patent application
04.04.2018	Communication about intention to grant a European patent
04.04.2018	Intention to grant (signatures)
04.04.2018	Text intended for grant
04.04.2018	Text intended for grant (clean copy)
04.04.2018	Text intended for grant (sequence listing)
04.08.2017	(Electronic) Receipt
04.08.2017	Amended claims with annotations
04.08.2017	Claims
04.08.2017	Letter accompanying subsequently filed items



THANK YOU!