

IMGT® databases

Sequences



IMGT/LIGM-DB

IG and TR from human and 222 other vertebrate species
LIGM (Montpellier)
Lefranc, M.-P.,
Nucleic Acids Res., 34, D781-D784 (2006)

IMGT/LIGM-DB is the IMGT® comprehensive database of immunoglobulin (IG) and T cell receptor (TR) nucleotide sequences from human and other vertebrate species, created in 1989. IMGT/LIGM-DB is the first and the largest database of IMGT®. In September 2008, IMGT/LIGM-DB contained 126 667 sequences from 223 species. IMGT/LIGM-DB includes all germline and rearranged IG and TR genomic DNA (gDNA) and complementary DNA (cDNA). The Web interface allows searches according to immunogenetic specific criteria. The specific annotation of cDNA is performed by IMGT/Automat. The unique source of IMGT/LIGM-DB is the European Molecular Biology Laboratory (EMBL), which shares data with GenBank and DDBJ. IMGT/LIGM-DB data are also distributed by anonymous FTP servers at CINES and the European Bioinformatics Institute (EBI), and from many SRS (Sequence Retrieval System) sites.



IMGT/PRIMER-DB

IG and TR oligonucleotides
LIGM
Lefranc, M.-P.,
Nucleic Acids Res., 31, 307-310 (2003)

IMGT/PRIMER-DB is the IMGT® oligonucleotide database. IMGT/PRIMER-DB provides standardized information on oligonucleotides (or Primers) and combinations of primers (Sets, Couples) for IG and TR. Primers, Sets and Couples are described in IMGT/PRIMER-DB cards. In September 2008, IMGT/PRIMER-DB contained 1 864 entries. These primers are useful for combinatorial library constructions, scFv, phage display or microarray technologies.



IMGT/MHC-DB

HLA and MHC/NHP
ANRI, BPRC, hosted at EBI
Robinson, J. et al.,
Nucleic Acids Res., 31, 311-314 (2003)

IMGT/MHC-DB contains sequences of the major histocompatibility complex (MHC) and comprises IMGT/HLA-DB (for Human Leukocyte Antigen or human MHC) and IMGT/MHC-NHP (for MHC of nonhuman primates), hosted at EBI.

Genome



IMGT/GENE-DB

The international reference for IG and TR gene and allele nomenclature
LIGM
Giudicelli, V. et al., *Nucleic Acids Res.*, 33, D256-D261 (2005)

IMGT/GENE-DB is the IMGT® genome database. IMGT/GENE-DB is the official repository of all the IG and TR genes and alleles approved by the World Health Organization (WHO) /International Union of Immunological Societies (IUIS) Nomenclature Subcommittee for IG and TR. In September 2008, IMGT/GENE-DB contained 1 911 IG and TR genes from human, mouse and rat, and 2 909 alleles. All the human IMGT® gene names were approved by the HUGO Nomenclature Committee (HGNC) in 1999 and entered in IMGT/GENE-DB and in Entrez Gene at NCBI (USA). The mouse IG and TR gene names with IMGT reference sequences were provided by IMGT® to HGNC and to the Mouse Genome Informatics (MGI) in July 2002. Reciprocal links exist between IMGT/GENE-DB and HGNC and Entrez Gene databases.

IMGT/GENE-DB Query page

GENERAL CRITERIA:

Species: Homo sapiens
Locus: IGHV1-2
Gene type: Variable
Group: IGHV
Subgroup: J1-2
Essentiality: any
Restriction of genes which have been found: any

SHORT CUT : selection on gene or clone name

Species: Homo sapiens
IMGT gene name: IGHV1-2
Species: Homo sapiens
IMGT gene name: IGHV1-2
Species: Homo sapiens
IMGT gene name: IGHV1-2

List of resulting genes

Select, in the first column, the genes to view their detailed IMGT gene entry:

| Species | IMGT gene name | Gene functionality | IMGT gene definition | Number of alleles | Chromosome | Chromosomal localization | IMGT/LIGM-DB reference sequence(s) for allele '01' | |
|-------------------------------------|----------------|--------------------|----------------------|------------------------------------|------------|--------------------------|----------------------------------------------------|--------|
| <input checked="" type="checkbox"/> | Homo sapiens | IGHV1-2 | F | Immunoglobulin heavy variable 1-2 | 4 | 14 | 14q32.33 | X07448 |
| <input type="checkbox"/> | Homo sapiens | IGHV1-24 | F | Immunoglobulin heavy variable 1-24 | 1 | 14 | 14q32.33 | M99942 |

| IGHV1-2 allele names | Gene functionality | R | T | Pr | IMGT/LIGM-DB reference sequences | | |
|----------------------|--------------------|---|---|----|----------------------------------|-------------------|---------------|
| | | | | | Clone names | Accession numbers | Molecule type |
| IGHV1-2*01 | F | + | + | + | V35/VI-2b | X07448 | gDNA |
| IGHV1-2*02 | F | + | | | VI-2 | X62106 | gDNA |
| IGHV1-2*03 | F | | | | I-1 | X92208 | gDNA |
| IGHV1-2*04 | F | + | | | DP-8 | Z12310 | gDNA |

2D and 3D structures



IMGT/3Dstructure-DB

IG, TR, MHC and RPI structures
LIGM
Kaas, Q. et al., *Nucleic Acids Res.*, 32, D208-D210 (2004)

IMGT/3Dstructure-DB is the IMGT® 3D structure database specialized in immunoglobulins (IG), T cell receptors (TR), major histocompatibility complex (MHC) of human and other vertebrates species, immunoglobulin superfamily (IgSF), MHC superfamily (MhcSF) and related proteins of the immune system (RPI) with known 3D structures. In September 2008, IMGT/3Dstructure-DB contained 1 461 atomic coordinate files. These coordinate files extracted from the Protein Data Bank (PDB) are renumbered according to the standardized IMGT unique numbering. The IMGT/3Dstructure-DB cards provide IMGT® annotation on the amino acid sequences, 2D structures (IMGT Colliers de Perles) and 3D structures of IG, TR, MHC and RPI, contact analysis, downloadable IMGT/3Dstructure-DB flat files, visualization tools (Jmol and QuickPDB), and external links. IMGT Residue@Position cards provide detailed standardized information on the inter- and intra-domain contacts of each residue, based on the IMGT unique numbering.



Books



Lefranc, M.-P. and Lefranc, G.,
The Immunoglobulin FactsBook,
Academic Press, 458 pages (2001)



Lefranc, M.-P. and Lefranc, G.,
The T cell receptor FactsBook,
Academic Press, 398 pages (2001)

IMGT/LIGM-DB Other accesses

- **SRS:** EBI (UK), DDBJ (Japan), DKFZ (Germany), CSC (Finland), Institut Pasteur (France) or **MRS BEN** (Belgium)
- **FTP:** sequences in flat file format, weekly releases: CINES (Montpellier, France) and EBI (UK)
- **BLAST and FASTA:** EBI (UK)
- **LinkOut** (nucleotide) at NCBI (USA)