

IMGT, the international ImMunoGeneTics information system®

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<http://imgt.cines.fr>

- IMGT is a high-quality integrated knowledge resource specialized in the immunoglobulins (IG), T cell receptors (TR) and major histocompatibility complex (MHC) of human and other vertebrate species, and in the immunoglobulin superfamily (IgSF), MHC superfamily (MhcSF) and related proteins of the immune system (RPI)
- created in 1989 by Marie-Paule Lefranc (Université Montpellier II, CNRS), a European project since 1992
- provides a common access to all Immunogenetics data
- is the international reference in Immunogenetics and Immunoinformatics
- based on the axioms of IMGT-ONTOLOGY and on the IMGT Scientific chart rules
- consists of databases, interactive tools and Web resources

IMGT tools

Sequence analysis



IMGT/V-QUEST

LIGM

Giudicelli, V. et al., *Nucl. Acids Res.*, 32, W435-W440 (2004)



IMGT/JunctionAnalysis

LIGM

Yousfi Monod, M. et al., *Bioinformatics* 20 Supplement, 1, I379-I385 (2004)



IMGT/Allele-Align

LIGM

Lefranc, M.-P., *Molecular Immunology*, 40, 647-660 (2004)



IMGT/PhyloGene

LIGM

Elemento, O. and Lefranc, M.-P., *Dev. Comp. Immunol.*, 27, 763-779 (2003)

Genome analysis



IMGT/LocusView...

LIGM

Lefranc, M.-P., *Molecular Immunology*, 40, 647-660 (2004)



IMGT/GeneInfo

TIMC and ICH (Grenoble)

Baum, P. et al., *BMC Bioinformatics*, 7, 224 (2006)



IMGT/GeneFrequency

LIGM

Lefranc, M.-P. et al., *In Silico Biology*, 5, 45-60, *Epub* 2005, 5, 0006 (2004)

3D structure analysis



IMGT/DomainGapAlign

IMGT/Collier-de-Perles

IMGT/StructuralQuery

LIGM

Kaas, Q. and Lefranc, M.-P., *In Silico Biology*, 5, 505-528, *Epub* 2005, 5, 0046 (2005)

IMGT databases

Sequences



IMGT/LIGM-DB

IG and TR from human and 150 other vertebrate species
LIGM

Lefranc, M.-P., *Nucl. Acids Res.*, 33, D781-D784 (2006)



IMGT/PRIMER-DB

IG and TR oligonucleotides
LIGM and EUROGENTEC

Lefranc, M.-P., *Nucl. Acids Res.*, 33, D593-D597 (2005)



IMGT/MHC-DB

HLA and MHC/NHP
ANRI, BPRC and EBI

Robinson, J. et al., *Nucl. Acids Res.*, 31, 311-314 (2003)

Genome



IMGT/GENE-DB

The international reference for IG and TR gene and allele nomenclature
LIGM

Lefranc, M.-P., *Nucl. Acids Res.*, 33, D256-D261 (2005)

Lefranc, M.-P. In: *Antibody engineering: methods and protocols* (Lo B.K.C. ed), 248, 27-49 (2003)

Lefranc, M.-P. and Lefranc, G. In: *Molecular Biology of B cells* (Honjo, T., Alt F.W. and Neuberger M.S., eds) pp. 37-59 (2004)

2D and 3D structures



IMGT/3Dstructure-DB

IG, TR, MHC and RPI structures
LIGM

Kaas, Q. et al., *Nucl. Acids Res.*, 32, D208-D210 (2004)

IMGT Repertoire

Sequences



Alignments of alleles



Tables of alleles



Protein displays



Allotypes, Isotypes...

Lefranc, M.-P. et al., *In Silico Biology*, 4, 17-29 (2004)

Lefranc, M.-P. et al., *In Silico Biology*, 5, 45-60, *Epub* 2005, 5, 0006 (2004)

Lefranc, M.-P., *Molecular Immunol.*, 40, 647-660 (2004)

Genome



Chromosomal localizations



Locus representations



Gene tables...

Lefranc, M.-P., *Nucl. Acids Res.*, 33, D593-D597 (2005)

2D and 3D structures



2D Colliers de Perles

3D representations

FR-IMGT and

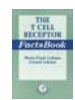
CDR-IMGT lengths...

Pommié, C. et al., *J. Mol. Recognit.*, 17, 17-32 (2004)

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), Institut Pasteur (France), CEINGE (Italy), CU (USA), DDBJ (Japan), DIC (India), IUBio (USA)
- **FTP**: weekly releases: CINES (Montpellier, France) and EBI (UK)
- **BLAST**: CINES (France), EBI (UK), Institut Pasteur (France)
- **LinkOut** (nucleotides) at NCBI (USA)

IMGT Other Web resources



IMGT Index
IMGT Scientific chart
IMGT Education



IMGT Medical page
IMGT Veterinary page
IMGT Bloc-notes

Lefranc, M.-P., *Nucl. Acids Res.*, 33, D593-D597 (2005)