

Information Resources for genes & proteins.

("Bioinfo. & Mol. Evolutn", P. G. Higgs & T. K. Attwood, Blackwell Pub.)

Primary Databases: Primary DNA sequence repositories
EMBL, GenBank, DDBJ, dbEST, PIR-PSD,
Swiss-Prot, MZPS, TrEMBL

Secondary Databases: Combine info from several
diff. primary resources & provide added
information not present there.
PDB, eMOTIF, PROSITE, PRINTS, Blocks, Pfam,
~~PIR-PSD~~, InterPro, SCOP.

Principal nucleotide databases: EMBL, GenBank, DDBJ

Int. Nucleotide Sequence Database
(INSD).

Primary dBase for protein seq.: PIR-PSD, Swiss-Prot
UniProt ← TrEMBL
(Manual annotation, small) (Poor annotation, large)

Secondary Protein Dbase: (i) Protein classification
PROSITE, PRINTS, Pfam → (ii) structural grouping, fn. grouping
(iii) sharing conserved sequence motifs & domains.

InterPro

Databases for Protein Structure: PDB (from X-ray crystallography & NMR)
SCOP, CATH → use str. to fn. class.

Database for: protein-protein interaction, metabolic
reaction pathways, gene signaling
network.

List of Web addresses:

~~Nucleotide~~

EMBL: www.ebi.ac.uk/embl/

Gen Bank: www.ncbi.nlm.nih.gov/GenBank/

DDBJ: www.ddbj.nig.ac.jp

INSD: www.ncbi.nlm.nih.gov/projects/colab/

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

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

Protein Seq.:

PIR: pir.georgetown.edu

MIPS: mips.gsf.de

Swiss-Prot: www.expasy.org/sprot

NRL-3D: www-nbrf.georgetown.edu/pirwww/dbinfo/nrl3d.html

UniProt: www.uniprot.org

Prot. Family:

PROSITE: www.expasy.org/prosite/

PRINTS: www.bioinf.man.ac.uk

Blocks: www.blocks.fhcrc.org

Profiles: hsts.isb-sib.ch/cgi-bin/PFS_CAN/

Pfam: www.sanger.ac.uk/Software/Pfam
(HMM Models)

eMOTIF: fold.stanford.edu/emotif/

InterPro: www.ebi.ac.uk/interpro/

Prot. Structure:

PDB:	www.rcsb.org/pdb/
SCOP:	scop.mrc-lmb.cam.ac.uk/scop/
CATH:	www.biochem.ucl.ac.uk/bsm/cath
PDBsum	www.biochem.ucl.ac.uk/bsm/pdbsum
CDD	www.ncbi.nlm.nih.gov/Structure/cdd/ cdd.shtml

Metabolic / Pathway.

KEGG	www.genome.ad.jp
WIT	www-wit.mcs.anl.gov/Gongxin
EcoCyc	ecocyc.org
UMBD	umbdd.ahc.umn.edu/

Organism:

FlyBase	flybase.bio.indiana.edu/
SGD	yeastgenome.org
WormBase	www.wormbase.org
MGD	www.informatics.jax.org
TAIR	www.arabidopsis.org
Ensembl	www.ensembl.org
TDB	www.tigr.org/tdb/

<u>Other:</u> DDB Cat	www.infobiogen.fr/services/dbcat
OMIM	www3.ncbi.nlm.nih.gov/entrez/ query.fcgi?db=OMIM
BIND	www.blueprint.org/bind/bind.php
GO	www.geneontology.org/
NAR	nar.sagepub.com