Protein database: SWISS-PROT

Protein information: experimental data or predicted

1. Protein maturation

- Cuts within the amino acid chain
- Removal of fragments of the amino acid chain
- Chemical modification of specific amino acids
- Addition of lipid molecules
- Addition of glycosidic molecules

2. Protein destination

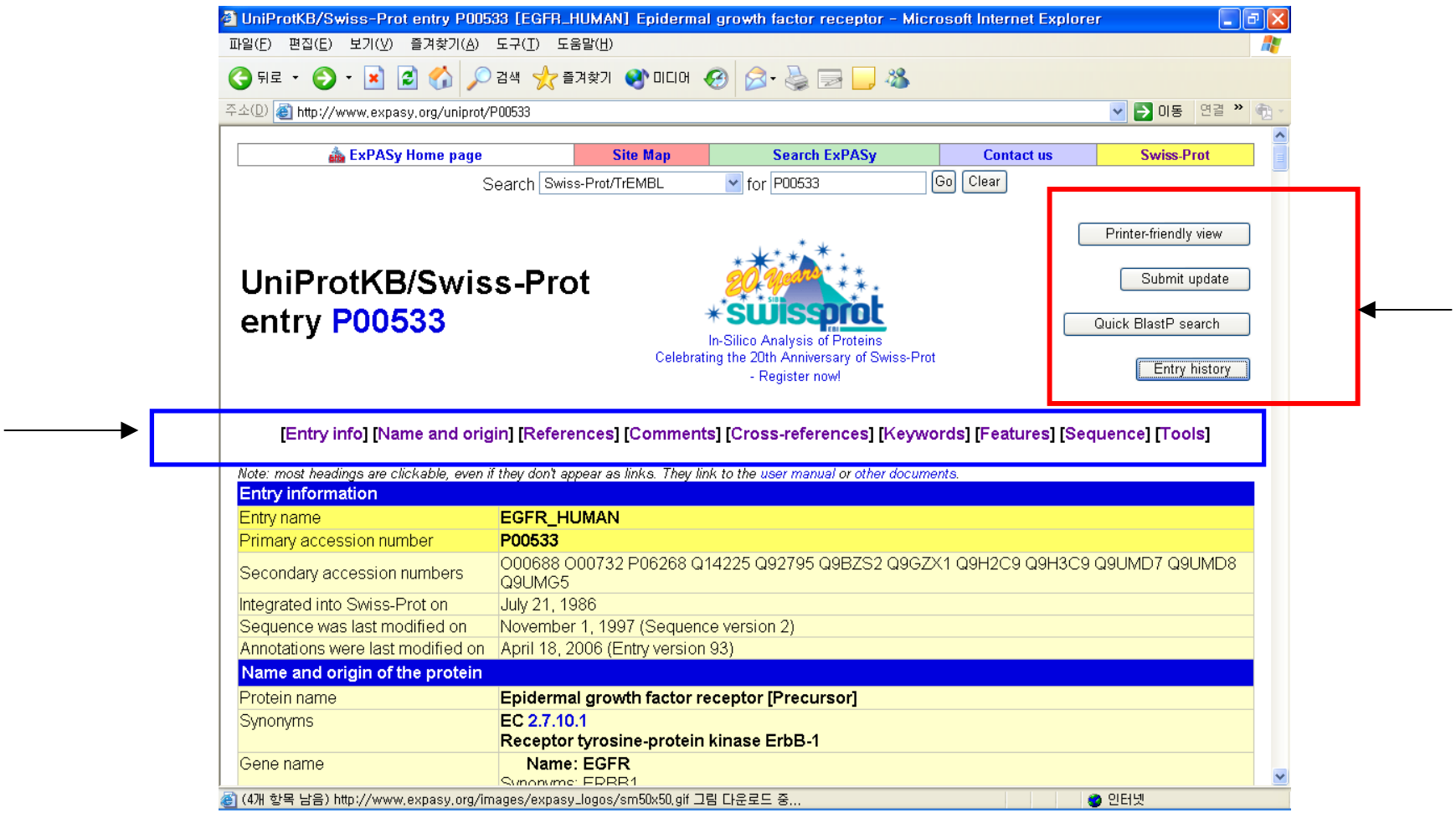
Getting attached to the cell membrane
Being secreted outside the cell
Being transported into the periplasm (for bacteria)
Being transported to the mitochondria or any other organelle
Being transported into the cell nucleus

3. Protein structure

The recognition and the definition of protein folds

SWISS-PROT: www.expasy.ch/sprot/

Explore with EGF-R (human receptor of EGF)
: accession number P00533



1. Entry Info
   - Entry-number: *EGFR_HUMAN*
   - Primary accession number
   - Secondary accession number: old accession numbers

2. Name and origin
   - Protein name: general description
   - Synonyms: EC number
   - Gene name: for nucleotide search
   - From: the origin of the protein
   - Taxonomy: taxonomic classification of the source organism

3. The references

A list of bibliographical references

4. The comments

Any information that doesn’t fit anywhere else
function, catalytic activity, subcellular location, etc

5. Cross references

Links to other databases

6. Keywords

A simple list of terms relevant to your protein

7. Features

Information on the protein is precisely mapped onto the sequence

Finding out more about proteins

1. modified amino acids
   pir.georgetown.edu/pirwww/dbinfo/resid.html
   www.glycosuite.com
   lipid.bio.m.u-tokyo.ac.jp
   chem.sis.nlm.nih.gov/chemidplus

2. Biochemical pathways
   www.genome.ad.jp/kegg
   brenda.bc.uni-koeln.de
   www.chem.qmul.ac.uk/iubmb
   www.ecocyc.org

3. Protein structure

www.rcsb.org/pdb

www.ncbi.nlm.nih.gov/Structure

scop.mrc-lmb.cam.ac.uk/scop

www.biochem.ucl.ac.uk/bsm/cath_new

www.expasy.ch/swissmod/SWISS-MODEL.html

4. Protein families

immunogetics proteins: imgt.cines.fr

restriction enzymes: rebase.neb.com

glycosidic bonds: afmb.cnrs-mrs.fr/CAZY

proteases: www.meros.co.uk

protein kinases: pkr.sdsc.edu/html/index.shtml

nuclear receptors: nrr.georgetown.edu

neural processes: senselab.med.yale.edu/senselab

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

Assignments

Study your protein on SWISS-PROT

: everything you have to know about your protein