Selected Bioinformatics Data Resources and Tools

Here are some data resources and tools that you may encounter in the molecular case studies available from Molecular CaseNet.

If you know about a resource that you used in a molecular case study and it is not listed here please email the resource name, context you learned about/used it, and web-link/access resources to Shuchi Dutta at sdutta@rcsb.rutgers.edu. Thanks.

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| **Website/Resource (with links)** | **Description** |
| [CourseSource](https://www.coursesource.org/courses/bioinformatics) | A resource that provides links to bioinformatics learning framework (there are links to genetics and cell biology learning frameworks as well as others) |
| [Drugbank.ca](https://go.drugbank.com/) | A database that provides information on drugs, its targets, interactions, side-effects and much more.  |
| [iCn3D](https://www.ncbi.nlm.nih.gov/Structure/icn3d/full.html) | A molecular visualization tool for viewing and manipulating PDB files |
| KEGG | The Kyoto Encyclopedia of Genes and Genomes provides genomic, chemical, and functional information about biological molecules. It shows excellent summaries of various metabolic and signaling pathways diagrams. It also has  |
| [MemProt](http://memprotmd.bioch.ox.ac.uk/)MD | Databases of membrane proteins embedded in lipid bilayersLinks to this resource and other membrane protein resources are available from the PDB too. |
| [OPM](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjzz4iAgZPzAhVRU98KHXbkCq4QFnoECAYQAw&url=https%3A%2F%2Fopm.phar.umich.edu%2F&usg=AOvVaw04CUust7oLazsjUO5Kb0-N) |
| [mpstruc](https://blanco.biomol.uci.edu/mpstruc/) |
| [PDBTM](http://pdbtm.enzim.hu/) |
| [Mol\* (Read Mol star](https://molstar.org/)) | A molecular visualization tool for viewing and manipulating 3D structures (e.g., PDB files) and manipulation. (linked in RCSB but also separate) |
| [NCBI](https://www.ncbi.nlm.nih.gov/) | A bioinformatics resource with a variety data about gene/protein sequence, ligands, functions, and links to the scientific literature. The data, tools, and resources available here are useful for many reasons and you can use these to search for structures too (in addition to searching in RCSB) |
| [NCCSTS](https://sciencecases.lib.buffalo.edu/) | Buffalo case studies collection.  |
| [Nextstrain](https://nextstrain.org/) | A data resource with scientific and public health data on genomes of potential pathogens. Phylogenetic analysis of viruses and other pathogens. Look at Nextclade as well. |
| [OMIM](https://omim.org/) | Online Mendelian inheritance in man website has lots of genetic information and links to other resources |
| [Online Macromolecular Museum](https://earth.callutheran.edu/Academic_Programs/Departments/BioDev/omm/exhibits.htm) | A resource to exploring interactive images and information about protein structures and molecular stories.  |
| [PubChem](https://pubchem.ncbi.nlm.nih.gov/) | A resource that shows 2D and 3D images of chemical molecules, drugs, ligands, inhibitors etc.  |
| [PubChem](https://pubchem.ncbi.nlm.nih.gov/) | This resource shows 2D and 3D images of chemicals |
| [PyMol](https://pymol.org/2/) | A molecular visualization tool for viewing and manipulating PDB files |
| [QUBESHub](https://qubeshub.org/) | QUBESHub resources |
| [RCSB Molecule of the Month](https://pdb101.rcsb.org/motm/motm-by-title) | Articles describing the structure and functions of one or a collection of molecules in an easy-to-read format. This is a good resource for beginning exploration of specific proteins of interest. |
| [RCSB](https://www.rcsb.org/) PDB | RCSB Protein Data Bank – Website for finding and exploring 3D structural data on macromolecules (PDB files) and more. |
| [Robetta](https://robetta.bakerlab.org/) | Performs predictions of protein structure based on primary amino acid sequence and creates a PDB format file that can be uploaded into Mol\* for visualization |
| [UCSF Chimera](https://www.cgl.ucsf.edu/chimera/) | A molecular visualization tool for viewing and manipulating PDB files |
| [Uniprot.org](https://www.uniprot.org/) | The mission of [UniProt](https://www.uniprot.org/help/about) is to provide the scientific community with a comprehensive, high-quality, and freely accessible resource of protein sequence and functional information. |