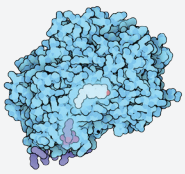
Supporting NIH in Medical Research

RCSB PDB PROTEIN DATA BANK

rcsb.org

PDB data and RCSB PDB Services expand fundamental scientific knowledge and improve health

Tackling Our Biggest Health Challenges

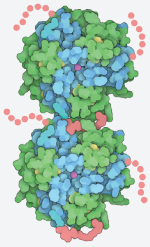


Heart Disease

Oxidosqualine cyclase forms the unusual fused rings of cholesterol molecules

Cancer

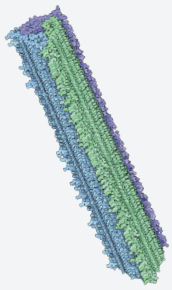
Mutation of the growth-controlling ras protein leads to many human cancers



Diabetes

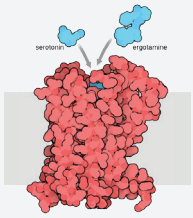
Engineered insulins have been developed to improve treatment of diabetes

Understanding the Healthy Mind



Alzheimer's Disease

Alzheimer's disease and prion diseases both involve unnatural aggregation of proteins into amyloid fibrils



Mental Health

Serotonin receptors control mood, emotion, and other behaviors, and are targets for important neuropsychiatric drugs

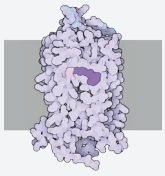
Research for Healthy Living

Obesity/ Nutrition

Problems with the appetite-controlling hormone leptin can lead to obesity

Oral Health

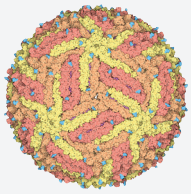
Bacteria use the enzyme glucansucrase to build sticky sugar chains that help them adhere to our teeth



Vision

All animals use the eye protein rhodopsin to detect light and see the outside world

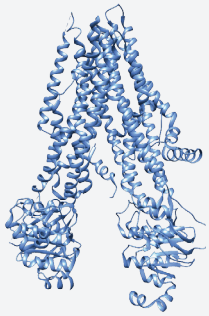
Access to Transformative Technologies



Electron Microscopy

Groundbreaking structures captured by EM, such as the Zika virus, are made available to all from the PDB

The Promise of Precision Medicine



Rare diseases

Cystic fibrosis, the most common inherited disease in the US, is caused by structural abnormalities in the CFTR protein

Securing the Future of Biomedicine

Tomorrow's Scientists

Outreach and education efforts broaden access and engagement with the biomolecules of life

Value for NIH

- RCSB PDB safeguards structural biology data generated with NIH funding:
  - » $4.7 Billion worth of NIH data over the lifetime of the PDB
- PDB structures have contributed data to nearly **1 million published research papers**
- Connects NIH-funded research and scientists with worldwide structural biology data from public and private sector research
- 2nd most heavily used online data resource after ClinicalTrials.gov for NIH-funded researchers
- Ensures rigor and reproducibility across biomedical research
- Enables structure-guided drug discovery