

NCI Resources for Researchers

Chamelli Jhappan, PhD

Cancer Immunology, Hematology and Etiology Branch (CIHEB)

Division of Cancer Biology (DCB)

NCI

NCI *Experimental Resources* for Researchers

Databases

Animal Models

Clinical Resources

NCI-Supported Databases

- SEER
- TCGA

The Surveillance, Epidemiology, and End Results Program (SEER)

(<https://seer.cancer.gov/>)

- Provides information on cancer statistics
- Cancer data from registries covering 35% of the U.S. population
- SEER is managed by the Surveillance Research Program (SRP) in the Division of Cancer Control and Population Science (DCCPS), NCI
- Data includes cancer incidence and population data associated by age, sex, race, year of diagnosis, and geographic areas
- Releases new research data every spring based on the previous November's submission of data

The Cancer Genome Atlas (TCGA)

(<https://cancergenome.nih.gov>)

- Collaboration between NCI and the National Human Genome Research Institute (NHGRI)
- Sequencing information from tumor and matched normal tissue from over 11,000 patients
- TCGA dataset is made up of more than two petabytes of genomic data
- Generated a tremendous amount of information on about 33 different types of cancer

The screenshot shows the homepage of the The Cancer Genome Atlas (TCGA) website. The header includes the NIH logo, the text "THE CANCER GENOME ATLAS", and the affiliations "National Cancer Institute" and "National Human Genome Research Institute". A search bar is located in the top right corner. Below the header is a navigation menu with links for Home, About Cancer Genomics, Cancers Selected for Study, Research Highlights, Publications, News and Events, and About TCGA. The main content area features a "Launch Data Portal" button and a section titled "About TCGA" which provides a brief overview of the project. A central infographic displays key statistics: 2.5 petabytes of data, 33 cancer types, 10 cancer types with the most data, 212,000 genes, 11,000 genes with mutations, and 7 cancer types with the most mutations. A sidebar on the right contains sections for "Questions About Cancer" (with a link to www.cancer.gov and a 1-800-4-CANCER number), "Multimedia Library" (with links for Images, Videos and Animations, Podcasts, and Interactive), and "Stay Connected" (with links for email updates, RSS newsfeeds, Twitter, and YouTube). The footer contains a list of links (Home, Contact Us, Web Site Policies, Accessibility, FDA, RSS) and the text "U.S. Department of Health and Human Services | National Institutes of Health | National Cancer Institute | National Human Genome Research Institute | USA.gov" and the NIH logo with the slogan "NIH - Turning Discovery Into Health®".

NCI Mouse Repository

(<https://frederick.cancer.gov/science/technology/mouserpository>)

Mouse cancer models

- Request frozen embryos or sperm
- Researchers are encouraged to submit their cancer models to the NCI mouse repository for archiving and distribution

miRNA Embryonic Stem Cell Collection

- ES cells overexpressing microRNAs
- MicroRNAs are GFP labeled
- MicroRNA expression is inducible

 **NATIONAL CANCER INSTITUTE**

Ordering miR ES Cells/requirements

- Must have NIH funding
- Distribution is prioritized
- Pay a shipping fee

Contact: Dr. Nancy Boudreau

Cell Lines

NCI-60 Human Tumor Cell line

(https://dtp.cancer.gov/discovery_development/nci-60/)

- NCI Developmental Therapeutics Program (DCT), NCI
- Representative cancers: leukemia, melanoma, lung, colon, brain, ovary, breast, prostate, and kidney cancers
- Used to identify and characterize novel compounds with growth inhibition or killing of tumor cell lines

Annotated Biospecimens

National Clinical Trials Network Navigator (NCTN Navigator) (<https://navigator.ctsu.org/navigator/login>)

- For cancer researchers interested in conducting studies using specimens and clinical data collected from cancer treatment trials
- Includes information about specimens, such as tumor and blood samples, donated by patients in NCI-sponsored clinical trials

Navigator Process Flow



NCI Patient-Derived Models Repository (PDMR)

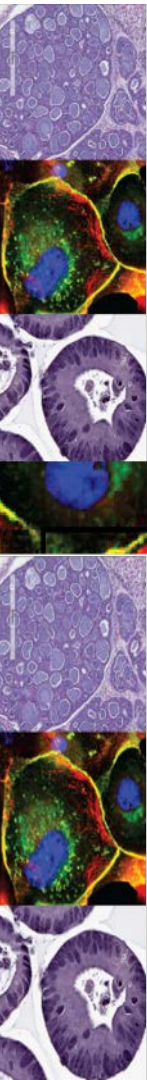
(<https://pdmr.cancer.gov/>)

Generated from primary and metastatic tumor tissues and blood specimens supplied by NCI-supported clinical trials and NCI-designated Cancer Centers

- Patient-derived xenografts
- Patient-derived tumor cell cultures
- Cancer associated fibroblasts
- Patient-derived organoids

Will include a limited amount of patient data:

- Previous clinical therapies
- Smoking history
- Race/ethnicity
- Representative sequence for a sub-set of PDXs for a targeted gene panel, whole exome, and RNASeq
- Will also accept previously derived PDX models developed at external sites



How are Experimental Resources Developed by NCI?

- Feedback from researchers
- Workshop or Think Tank asking leaders in cancer research to let us know how we can help them
- Approvals from NCI leadership
- PDMR process began in 2012, resource active 4/2018

Additional NCI Resources....

- Physical Sciences in Oncology Bioresource (<https://physics.cancer.gov/bioresources/>)
- Ras Initiative (<https://www.cancer.gov/research/key-initiatives/ras/outreach/reference-reagents>)
- Informatics Technology for Cancer Research (<https://itcr.cancer.gov/sites/default/files/ITCR>)
- Clinical Proteomic Tumor Analysis Consortium (<https://proteomics.cancer.gov/programs/cptac>)
- Cooperative Human Tissue Network (<https://www.chtn.org/>)



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