Oncogenes and cell proliferation Web alert

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The Cancer Genome Anatomy Project
http://www.ncbi.nlm.nih.gov/ncicgap/
The 'Cancer Genome Anatomy Project' (CGAP) is an interdisciplinary program to establish the information and technological tools needed to decipher the molecular anatomy of the cancer cell. One way that CGAP pinpoints the genetic differences among normal cells, precancerous cells, and cancer cells is by constructing libraries from various cell types and identifying differences in gene expression between these libraries. Some of the analysis tools can be used online.

CancerNet
http://cancernet.nci.nih.gov/
'CancerNet', managed by the National Cancer Institute at the National Institutes of Health, provides recent and accurate cancer information for patients, caregivers, healthcare professionals, researchers and others.

The Tumor Gene Database
http://condor.bcm.tmc.edu/oncogene.html
'The Tumor Gene Database' contains information about genes that are targets for cancer-causing mutations: proto-oncogenes and tumor supressor genes. Its goal is to provide a standard set of facts (e.g. protein size, biochemical activity and chromosomal location) about all known tumor genes. At present, the database contains >2600 facts on >300 genes.

The Genetics of Cancer
http://www.cancergenetics.org/home.htm

'The Genetics of Cancer Site' provides an information resource to help patients and healthcare providers understand the genetic basis of cancer and to be able to interpret new discoveries in the field of cancer genetics. The site is provided by the Robert H Lurie Comprehensive Cancer Center of Northwestern University in Illinois.

Genes and Disease: Cancer Subsection
http://www.ncbi.nlm.nih.gov/disease/Cancer.html
These pages contain information about human genetic diseases for which a gene has been identified and mapped. For each disease, the site provides a brief description, as well as links to the protein sequence, mapping data, and relevant literature. The cancer subsection deals specifically with 13 human cancers.

RNA Helicases from the Baker's Yeast *Saccharomyces cerevisiae*
http://www.expasy.ch/linder/RNA_helicases.html
This page is dedicated to information about RNA helicases from *Saccharomyces cerevisiae*. It contains description of helicase, list of helicases, and proteins with helicases activity plus links to the Online Mendelian Inheritance in Man (OMIM) database and to other helicase-related references. The references data are updated every month.

APOPTOSIS Online
http://www.apopnet.com/index.htm
'APOPTOSIS Online' is a multifunctional website created by ApopNet to foster international scientific communication. The primary purpose of this website is to provide a cohesive collection of information regarding apoptosis research. The site, through its 'Apoptosis Forum', also provides an interactive discussion about viewpoints related to apoptosis studies.

Cell-Cycle Control of S phase: a Comparison of Two Yeasts
http://mcbio.med.buffalo.edu/CMB/huberman/Cell_Cycle_Review.html
This page describes cell cycle control of S phase in *Saccharomyces cerevisiae* and *Schizosaccharomyces pombe*. Although a little bit outdated, this site provides good information and links to related papers.

Oncogenes and Tumor Suppressor Genes
http://www.ncbi.nlm.nih.gov/CBBresearch/Boguski/Windows2/CGcancer.html
The site presents comprehensive information on oncogenes and tumor suppressor genes selected from "The Oncogene and Tumor Suppressor Gene FactsBook" by Robin Hesketh. Each gene has a link to Gene Symbol, GenBank record, OMIM description, and map location.

RAS Pathway and EGF Receptor–Ligand Complex
http://flybase.bio.indiana.edu:82/allied-data/lk/interactive-fly/aignfam/egfr&ras.htm
The 'RAS Pathway and EGF Receptor–Ligand Complex' web page, a part of 'The Inter*active* Fly', contains a list of genes of the *ras* pathway and EGFR–ligand complex and a list of Ras pathway signaling proteins. Each gene and protein has a broad description which includes links to FlyBase entries.

The Eucaryotic Cell Cycle and the Genetics of Cancer
http://www.ndsu.nodak.edu/instruct/mcclean/plsc431/cellcycle/cellcycl1.htm
This page provides basic information about cell cycle and genetics of cancer. It includes information about distribution of oncogenes, cancer genes, and list of tumor suppressor genes in the human genome with links to the OMIM database. This site is designed as a tutorial for college students.

Cell Cycle Controlling Pathways
http://www.genome.ad.jp/brite/brite.html
The 'Cycle Cell Controlling Pathways' site is part of the 'Biomolecular Relations in Information Transmission and Expression' (BRITE) database. It includes cell cycle pathways for human, fission yeast, and budding yeast. Each pathway has links to BRITE entries describing proteins taking part in cell-cycle control.

The Biology Project — The Cell Cycle & Mitosis Tutorial
http://www.biology.arizona.edu/cell_bio/tutorials/cell_cycle/main.html
The Biology Project at the University of Arizona provides this tutorial on the cell cycle and mitosis, designed for students at college and high school level.

NEOPLASIA
http://edcenter.med.cornell.edu/CUMC_PathNotes/Neoplasia/Neoplasia_TOC.html
This page, in textbook format, is maintained by Robert C Mellors. It provides information about the nature of cancer, carcinogenesis, cancer predisposition, chromosomal abnormalities and much more.

Oncogenes and Tumor Suppressor Genes: the Ying and Yang of Cell Proliferation
http://views.vcu.edu/ana/OB/cytology/index.htm
Molecular Biology of Cancer
http://www.stanford.edu/~lipsick/OncSup99Lo/index.htm
These two websites are designed as educational slideshow-style presentations.

Cellular oncogenes. Published by Modified over 5 years ago.Â 5 Homology between transfected oncogenes and retroviral oncogenes Figure 4.5 The Biology of Cancer (Â© Garland Science 2007) NIH3T3 cell lines transfected with DNA extracted from a human bladder carcinoma cell line Untransfected NIH3T3 Probe used: H-ras oncogene present in Harvey rat sarcoma virus. 6 ONCOGENES, PROTOONCOGENES, AND THEIR FUNCTIONS Oncogenes can be classified into five groups based on functional and biochemical properties of their normal counterparts (proto-oncogenes). growth factors growth factor receptors signal transducers transcription factors others, including programmed cel... Oncogenes. Stimulatory genes, increased expression/activity in cancer. Another definition is any gene able to transform cells in culture. Naming of oncogenes. Depends on discovery method. Many were discovered from viruses causing cancer, or from cloning. Some have several names in use. The normal sequence of a gene affected in cancer is called.. A proto-oncogene (does not become oncogene until it is mutated). 3 general changes to oncogenes that can cause cancer. 1. Over-expression of the normal protein 2. Mutations in the gene (abnormal protein) 3. Viral copies/homologues of the original gene, Assays to measure cellular proliferation, cell viability, and cytotoxicity are commonly used to monitor the response and health of cells in culture after treatment with various stimuli. The proper choice of an assay method depends on the number and type of cells used as well as the expected outcome. Assays for cell proliferation may monitor the number of cells over time, the number of cellular divisions, metabolic activity, or DNA synthesis. Cell counting using viability dyes such as trypan blue or Calcein-AM can provide both the rate of proliferation as well as the percentage of viable cells. Oncogenes and cell proliferation. Curr Opin Genet Dev. 1996 Feb;6(1):1-3. doi: 10.1016/s0959-437x(96)90002-7. Proliferating cell nuclear antigen (PCNA) is a DNA clamp that acts as a processivity factor for DNA polymerase Î´ in eukaryotic cells and is essential for replication. PCNA is a homotrimer and achieves its processivity by encircling the DNA, where it acts as a scaffold to recruit proteins involved in DNA replication, DNA repair, chromatin remodeling and epigenetics.