

HAFTA I

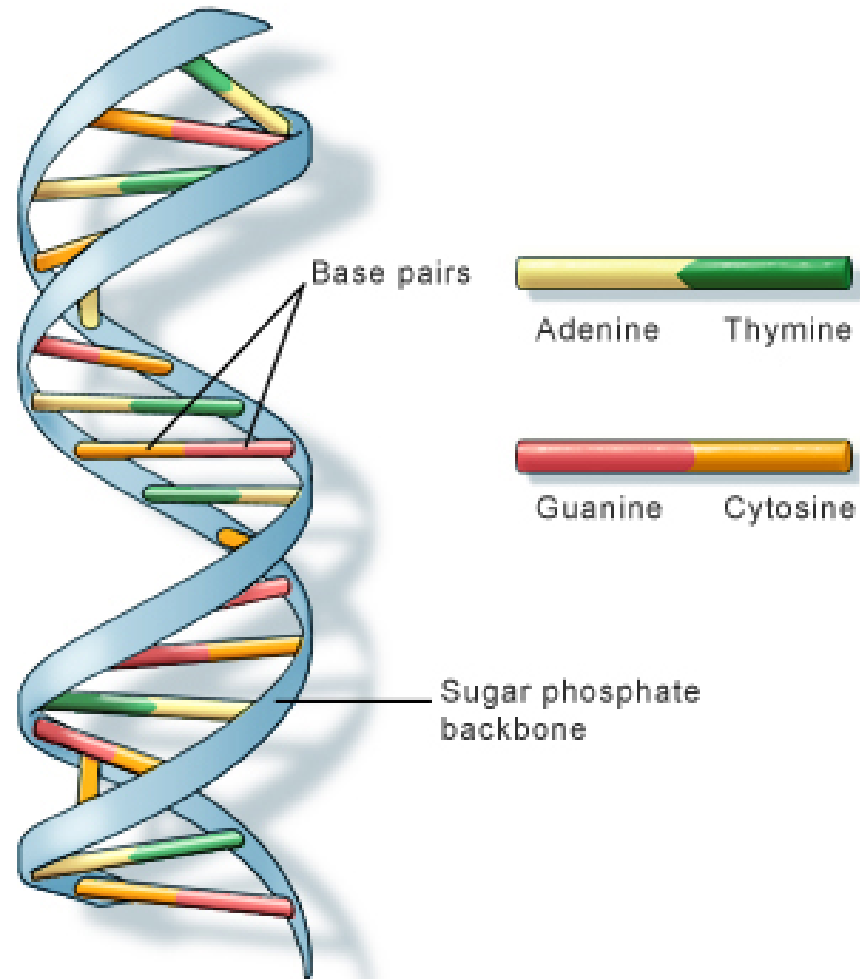
İn silico araçlar

DNA, protein, plazmid, cDNA kütüphane
bilgi bankaları, PubMed ve Ensembl
web araçlarının kullanımı

DNA

- Deoksiribonükleik asit insanlar ve neredeyse tüm canlıların kalıtım materyalidir. Bir insanın vücudunda neredeyse tüm hücreler aynı DNA'ya sahiptir. Çoğu DNA nükleusta konumlanıp ve nükleer DNA olarak adlandırılır. Nükleus dışında DNA mitokondride de bulunur ve mitokondriyal DNA olarak adlandırılır.
- DNA içerisinde bilgiler, dört kimyasal bazın, (adenin, guanin, sitozin, timin) oluşturduğu kodlar halinde saklanır.
- İnsan DNA'sında yaklaşık 3 milyar baz vardır ve bu bazların %99'dan fazlası tüm insanlarda aynıdır. Bu bazların sıralaması ya da dizisi bilginin ne olacağını belirler ve bu bilgi ile organizmanın yaşamı idame olur.
- DNA kendi kendine replike olarak kopyalarını oluşturabilir. Hücre her bölünmesinde yeni hücreye eski hücredeki DNA'nın birebir kopyası aktarılır.

DNA



Protein

- Proteinler büyük kompleks moleküllerdir.
- Bir çok kritik role sahiptirler.
- Hücre içerisindeki çoğu işi proteinler gerçekleştirir ve yapı fonksiyon ve dokuların organların regülasyonu için gereklidir.
- Proteinler, birbirine bağlanıp uzun zincirler oluşturan yüzlerce ya da binlerce aminoasitten meydana gelirler.
- 20 tip aminoasit vardır. Bu aminoasitler farklı kombinasyonlarla bir araya gelerek farklı özelliklere sahip proteinleri oluştururlar.
- Söz konusu aminoasit dizisi her proteinin kendine özgü üç boyutlu yapısını ve ona özgü fonksiyonunu oluşturur.

Protein

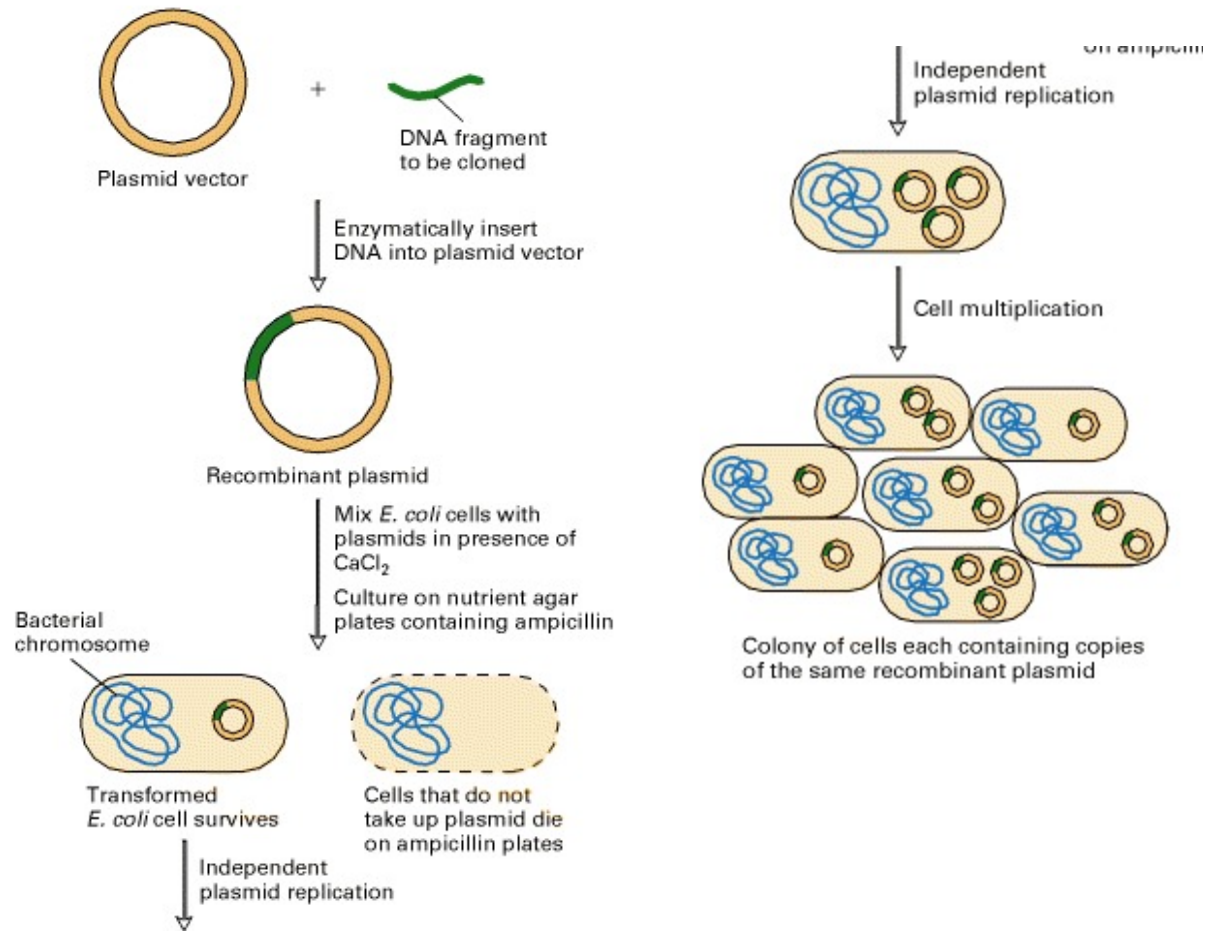
- Örnek protein fonksiyonları aşağıdaki tablodan incelenebilir.

Function	Description	Example
Antibody	Antibodies bind to specific foreign particles, such as viruses and bacteria, to help protect the body.	Immunoglobulin G (IgG)
Enzyme	Enzymes carry out almost all of the thousands of chemical reactions that take place in cells. They also assist with the formation of new molecules by reading the genetic information stored in DNA.	Phenylalanine hydroxylase
Messenger	Messenger proteins, such as some types of hormones, transmit signals to coordinate biological processes between different cells, tissues, and organs.	Growth hormone
Structural component	These proteins provide structure and support for cells. On a larger scale, they also allow the body to move.	Actin
Transport/storage	These proteins bind and carry atoms and small molecules within cells and throughout the body.	Ferritin

Plazmid

- Küçük, dairesel ekstrakromozomal DNA moleküllerine plazmid denir.
- Plazmidler otonomus olarak hücre içinde replikasyon yeteneğine sahiptir.
- Genellikle klonlama vektörleri olarak kullanılırlar.

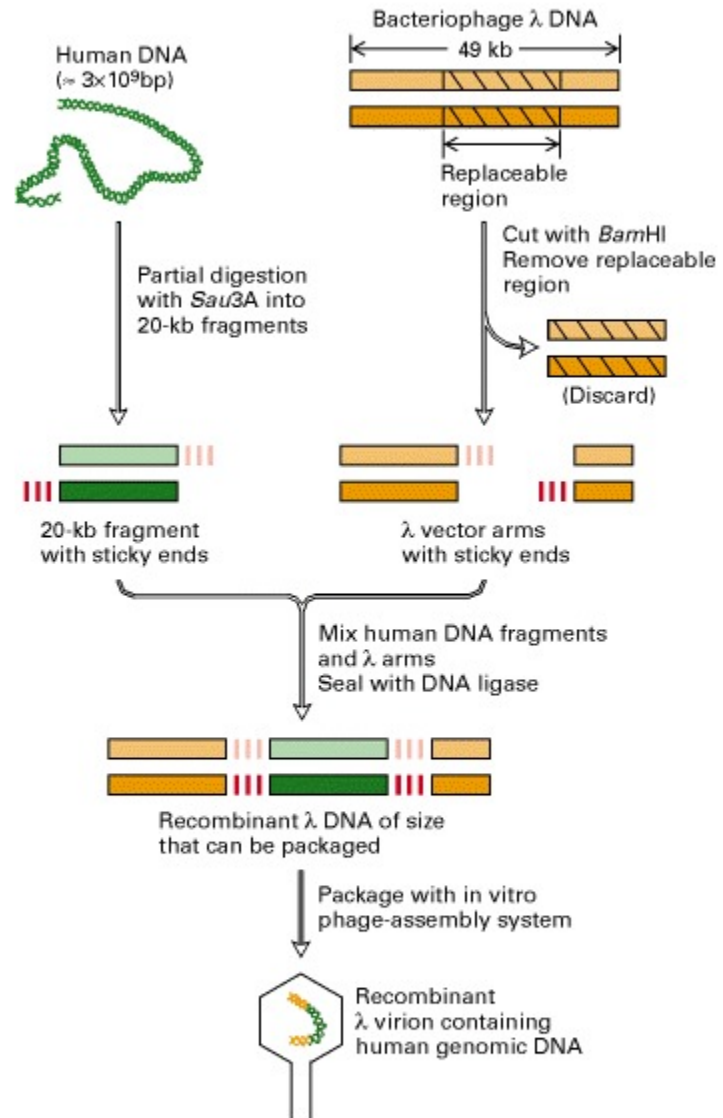
DNA Fragmanının Plasmid Vektöre Klonlanması



cDNA kütüphaneleri

- cDNA kütüphaneleri klonlanmış cDNA fragmanlarının kombine halde konak hücre topluluklarına sokulması ile elde edilmiştir.
- cDNA nükleusta bulunan ve tamamıyla transkribe olmuş mRNA'lardan üretilmiştir ve bu sayede organizmanın sadece eksprese olan genlerini içerir.
- Ancak cDNA kütüphanelerinde, genomik DNA kütüphanelerinin aksine enhansırlar, intronlar ve diğer regülatör elementlere ait bilgiler bulunmaz.
- Spesifik gen dizilerinin potansiyel fonksiyonel çalışmaları için tam uzunlukta cDNA kütüphaneleri oluşturulması, biyoteknoloji ve biyomedikal araştırmalarda çoğu molekül için esansiyeldir.

Genomik Kütüphane Oluşturulması



PubMed ve Ensembl web araçlarının kullanımı

Biyolojik arařtırmaların en büyük yardımcısı web tabanlı sitelerdir. Bu sitelerden en çok kullanılanları güvenilirlik ve bilgi ađı geniřliđi ile NCBI ve Ensembl veritabanlarıdır.

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The National Center for Biotechnology Information advances science and health by providing access to biomedical and genomic information.

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Genome

1000 prokaryotic genomes are now completed and available in the Genome database.



|| 1 2 3 4

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- [Determine conserved synteny between the genomes of two organisms](#)
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Popular Resources

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NCBI News

[dbVar officially launched](#)

04 Oct 2010

[NCBI's Database of Genomic Structural Variation is available to](#)

[MyNCBI supports OpenID and InCommons IDs](#)

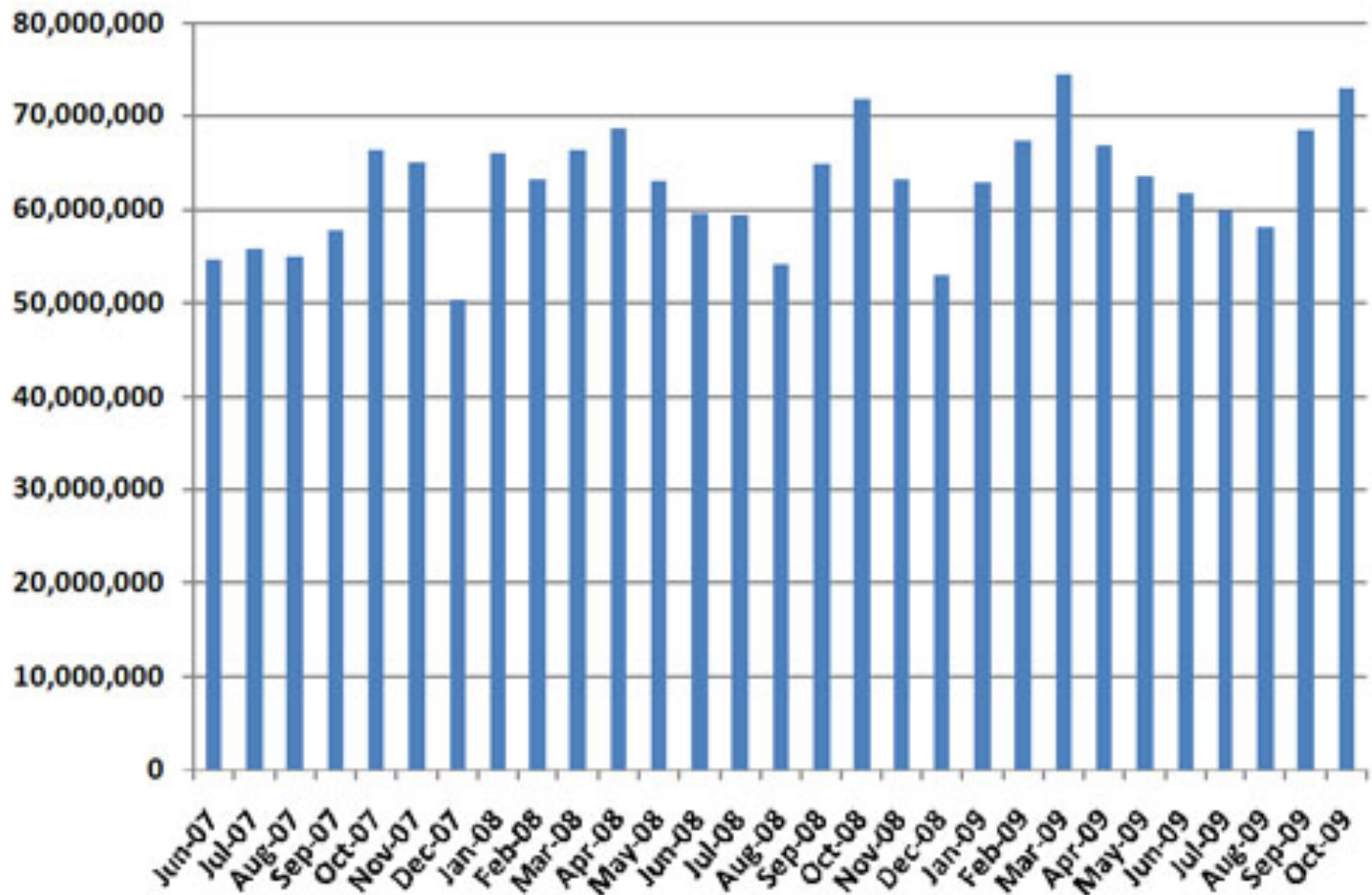
22 Sep 2010

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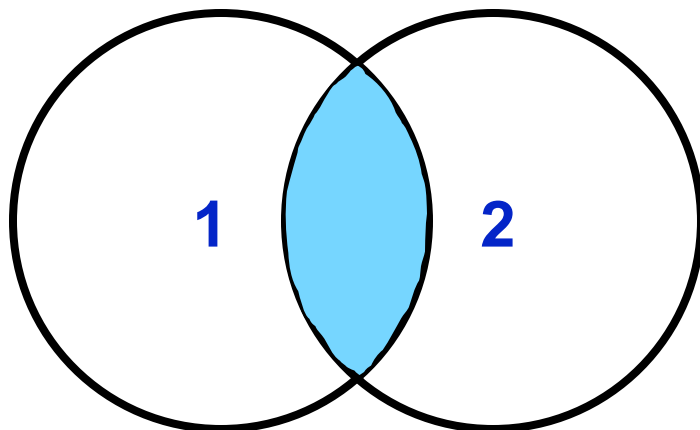
NCBI

- PubMed NCBI' in MEDLINE' a geçitidir.
- MEDLINE, 4600 dergiden ve 80 ülkeden literatür içerir
- 1950' lerden bu yana >18 milyondan fazla kayıt bulunmaktadır.
- MEDLINE PubMed' in en büyük parçasıdır ve biyomedikal dergilere parasız ulaşım sağlayan bir veritabanıdır. U.S. National Library of Medicine (NLM®) tarafından oluşturulmaktadır.
- Amerika' da yayınlanan yaklaşık 5400 dergi ve 80 ülkeden dergi MEDLINE' da yayınlanmak üzere seçmiştir.
- MEDLINE' nin önemli özelliklerinden bir tanesi NLM' nin kontrolünden geçen anahtar kelimeler ile kayıt tutulmasıdır (Medical Subject Headings (MeSH®)).

PubMed Web Searches

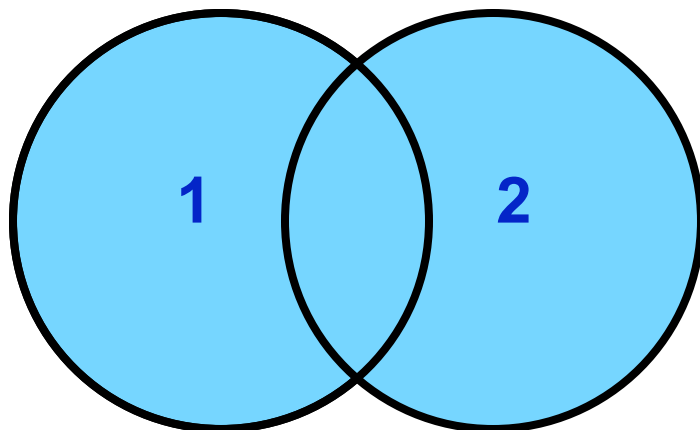


1 AND 2



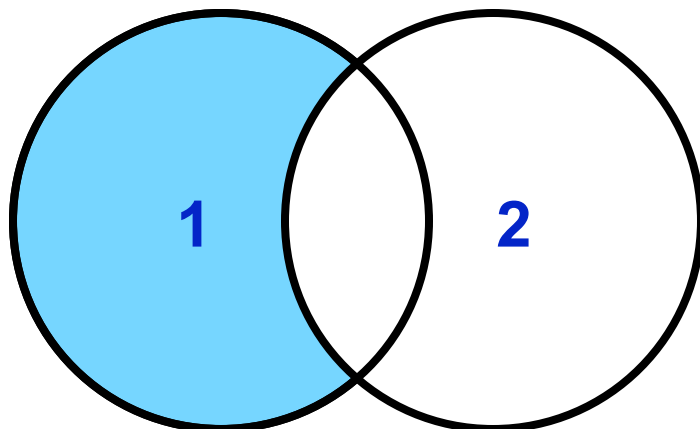
**BRCA1 AND breast cancer
(7087 results)**

1 OR 2



**BRCA1 OR breast cancer
(259620 results)**

1 NOT 2



**BRCA1 NOT breast cancer
(2440 results)**

PubMed'de Araştırma Yapmak

NCBI Resources How To Sign in to NCBI

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US National Library of Medicine
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PubMed BRCA1 Search

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5 years
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See 1799 articles about **BRCA1** gene function
See also: **BRCA1** breast cancer 1, early onset in the Gene database
brca1 in [Homo sapiens](#) | [Mus musculus](#) | [Rattus norvegicus](#) | [All 28 Gene records](#)

Results: 1 to 20 of 9529 << First < Prev Page 1 of 477 Next > Last >>

[Modes of Delivery of Genetic Testing Services and the Uptake of Cancer Risk Management Strategies in BRCA1 and BRCA2 Carriers.](#)
Pal T, Lee JH, Besharat A, Thompson Z, Monteiro AN, Phelan C, Lancaster JM, Metcalfe K, Sellers TA, Vadaparampil S, Narod SA.
Clin Genet. 2013 Feb 25. doi: 10.1111/cge.12130. [Epub ahead of print]
PMID: 23438721 [PubMed - as supplied by publisher]

[BRG1 is required for formation of senescence-associated heterochromatin foci \(SAHF\) induced by oncogenic RAS or BRCA1 loss.](#)
Tu Z, Zhuang X, Yao YG, Zhang R.
Mol Cell Biol. 2013 Feb 25. [Epub ahead of print]
PMID: 23438604 [PubMed - as supplied by publisher]

[A portrayal of E3 ubiquitin ligases and deubiquitylases in cancer.](#)
Satija YK, Bhardwaj A, Das S.
Int J Cancer. 2013 Feb 22. doi: 10.1002/ijc.28129. [Epub ahead of print]
PMID: 23436247 [PubMed - as supplied by publisher]

[NF-kB is a critical mediator of BRCA1-induced chemoresistance.](#)
Harte MT, Gorski JJ, Savage KI, Purcell JW, Barros EM, Burn PM, McFarlane C, Mullan PB, Kennedy RD, Perkins ND, Harkin DP.
Oncogene. 2013 Feb 25. doi: 10.1038/onc.2013.10. [Epub ahead of print]
PMID: 23435429 [PubMed - as supplied by publisher]

Results by year

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Related searches

[brca1 mutation](#)

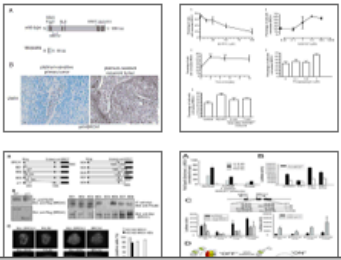
[breast cancer brca1](#)

[brca1 2](#)

[brca1 review](#)

[brca1 brca2 breast](#)

PMC Images search for BRCA1



Görüntüleme Ayarları

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Format Items per page Sort by

Format	Items per page	Sort by
<input checked="" type="radio"/> Summary	<input type="radio"/> 5	<input checked="" type="radio"/> Recently Added
<input type="radio"/> Summary (text)	<input type="radio"/> 10	<input type="radio"/> Pub Date
<input type="radio"/> Abstract	<input checked="" type="radio"/> 20	<input type="radio"/> First Author
<input type="radio"/> Abstract (text)	<input type="radio"/> 50	<input type="radio"/> Last Author
<input type="radio"/> MEDLINE	<input type="radio"/> 100	<input type="radio"/> Journal
<input type="radio"/> XML	<input type="radio"/> 200	<input type="radio"/> Title
<input type="radio"/> PMID List		

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- brca1 mutation
- breast cancer brca1
- brca1 2
- brca1 review
- brca1 brca2 breast

PMC Images search for BRCA1

1. Pal T, Lee JH, Besharat A, Thompson Z, Monteiro AN, Phelan C, Lancaster JM, Metcalfe K, Sellers TA, Vadaparampil S, Narod SA. Clin Genet. 2013 Feb 25. doi: 10.1111/cge.12130. [Epub ahead of print] PMID: 23438721 [PubMed - as supplied by publisher]

2. BRG1 is required for formation of senescence-associated heterochromatin foci (SAHF) induced by oncogenic RAS or BRCA1 loss. Tu Z, Zhuang X, Yao YG, Zhang R. Mol Cell Biol. 2013 Feb 25. [Epub ahead of print] PMID: 23438604 [PubMed - as supplied by publisher]

3. A portrayal of E3 ubiquitin ligases and deubiquitylases in cancer. Satija YK, Bhardwaj A, Das S. Int J Cancer. 2013 Feb 22. doi: 10.1002/ijc.28129. [Epub ahead of print] PMID: 23436247 [PubMed - as supplied by publisher]

4. NF-κB is a critical mediator of BRCA1-induced chemoresistance. Harte MT, Gorski JJ, Savage KI, Purcell JW, Barros EM, Burn PM, McFarlane C, Mullan PB, Kennedy RD, Perkins ND, Harkin DP. Oncogene. 2013 Feb 25. doi: 10.1038/onc.2013.10. [Epub ahead of print] PMID: 23435429 [PubMed - as supplied by publisher]

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AND	Title	Breast cancer	 Show index list
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AND	All Fields		 Show index list

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History

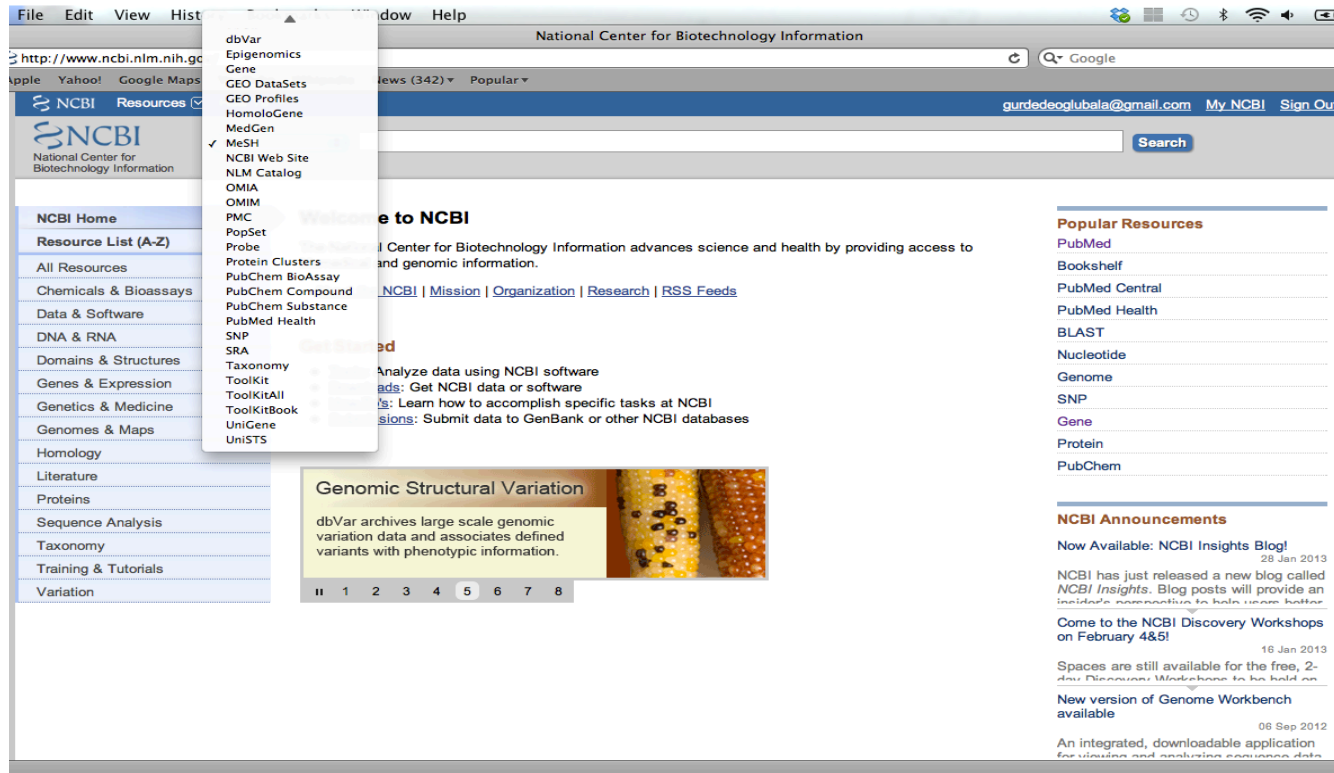
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MeSH Veritabanı ile Arama

MeSH: "Medical Subject Headings"
MeSH kelimeleri MEDLINE'da bulunan yayınları indekslemek için kullanılır.



The screenshot shows the NCBI website interface. A dropdown menu is open, listing various resources. The 'MeSH' option is highlighted. The main page content includes a navigation menu on the left, a search bar at the top right, and several sections: 'Popular Resources' (PubMed, Bookshelf, PubMed Central, PubMed Health, BLAST, Nucleotide, Genome, SNP, Gene, Protein, PubChem), 'NCBI Announcements' (NCBI Insights Blog, Discovery Workshops), and a featured article titled 'Genomic Structural Variation' which mentions 'dbVar archives large scale genomic variation data and associates defined variants with phenotypic information.'

MeSH

MeSH

chewing



Search

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[Mastication](#)

1. The act and process of **chewing** and grinding food in the mouth.

[Chewing Gum](#)

2. A preparation of chicle, sometimes mixed with other plastic substances, sweetened and flavored. It is masticated usually for pleasure as a candy substitute but it sometimes acts as a vehicle for the administration of medication.

[Tobacco Use Cessation Products](#)

3. Items used to aid in ending a TOBACCO habit.
Year introduced: 2012

[Tobacco, Smokeless](#)

4. Powdered or cut pieces of leaves of NICOTIANA TABACUM which are inhaled through the nose, chewed, or stored in cheek pouches. It includes any product of tobacco that is not smoked.
Year introduced: 1991(1986)

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"mastication"[MeSH Terms] OR chewing[Text Word]

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chewing (4)

MeSH

Pruritus

MeSH