

PUBMED Hints

<http://pubmed.gov> OR <http://pubmed.org>

Part I: Searching PubMed

- use the terms “AND/OR/NOT”
- searches can look like: cancer AND gene OR genetic NOT human
tyrosine kinase AND coli AND characterization

Part II: Good terms to help you find useful papers

- Specific gene or protein name (“DnaK”), or even just “gene” or “protein”
- Organism name (coli, drosophila, cucumber)
- Words such as:
 - o characterization
 - o isolation
 - o purification
 - o localization
- Specific methods: “mass spectrometry”
- GO term from the annotation table on a gene page in GONUTS: “[sphingolipid signaling pathway](#)” (don’t use the GO ID, eg. GO:0003376)

Part III: How do we select a paper from the search results?

- ** You will get better at this with practice
- Read the title carefully
- Read the abstract & look for words like “purified” or “mutants” or “enzymatic activity” or “suppressors” or a GO term and so forth
- Download the paper if it looks promising:

NCBI Resources How To Sign in to NCBI

PubMed.gov PubMed Search Help

Display Settings: Abstract Send to: **OPEN ACCESS**

Nucleic Acids Res. 2000 Aug 15;28(16):3143-50.

Recognition of native DNA methylation by the PvuII restriction endonuclease.

Rice MR, Blumenthal RM.

Department of Microbiology and Immunology, Medical College of Ohio, 3365 Arlington Avenue, Toledo, OH 43614-5906, USA.

Abstract
 Recognizing the methylation status of specific DNA sequences is central to many systems in eukaryotes and prokaryotes. Restriction endonucleases (REs) distinguish between methylated and unmethylated DNA and depend on the inability of restriction endonucleases to cleave their DNA substrates when the DNA is appropriately methylated. These endonucleases thus provide a model system for studying the recognition of DNA methylation by proteins. We have characterized the interaction of R.PvuII with DNA containing the physiologically relevant N4-methylcytosine modification. R.PvuII binds (N4m)C-modified DNA and cleaves it very slowly. Methylated strands in hemimethylated duplexes were cleaved at a higher rate than in fully methylated duplexes, in parallel with a higher binding affinity for hemimethylated DNA. The co-crystal structures of R.PvuII-DNA, together with a mutagenesis study, have implicated specific amino acids in recognition of the methylatable base; one of these is His84. We report that replacing His84 with Ala reduced the rate of cleavage of unmodified DNA but, in contrast, slightly increased the cleavage of (N4m)C-modified DNA.

PMID: 10931930 [PubMed - indexed for MEDLINE] PMCID: PMC108422 **Free PMC Article**

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Related citations in PubMed
 DNA duplexes containing methylated bases or non-nucleotide inst [Gene. 1995]
 Substrate recognition by the Pvu II endonuclease: I [Nucleic Acids Res. 1999]
 Novel subtype of type IIs restriction enzymes: Pfl-family I [Biochem. 2000]

Links to download the paper (these may vary slightly)

- Below the abstract, there will be a couple of expandable links. There may be one that says “[Publication Types, MeSH Terms, Substances](#)” or similar- Expand this. If you see the “Publication Type” is a “review”, remember you cannot use this for an annotation but you CAN look at the paper’s references:

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PubMed.gov PubMed Search Help

colici dam methylation

Display Settings: Abstract

Biochimie. 1987 May;69(5):439-43.

The role of dam methylation in controlling gene expression.

Plumbridge J.

Department of Molecular Biophysics and Biochemistry, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06510, USA.

PMID: 3118961 [PubMed - indexed for MEDLINE]

Publication Types, MeSH Terms, Substances

Publication Types
 Research Support, Non-U.S. Gov't
 Research Support, U.S. Gov't, Non-P.H.S.
 Review

MeSH Terms
 DNA Repair
 DNA Replication
 DNA Bacterial/metabolism

Related citations in PubMed
 Review The dam and dcm strains of Escherichia coli—a review. [Gene. 1994]
 The oriC unwinding by dam methylation in Escherichia coli [Nucleic Acids Res. 1988]
 Direct role of the Escherichia coli Dam DNA methyltransferase [J Bacteriol. 1986]
 The effect of dam methylation on the expression of glnS in E. coli [Biochimie. 1987]
 Review Evidence that adenine methylase is a DNA methyltransferase [Mol Cell Biochem. 1985]

This menu may not be available on all pages, but can help quickly identify prohibited papers