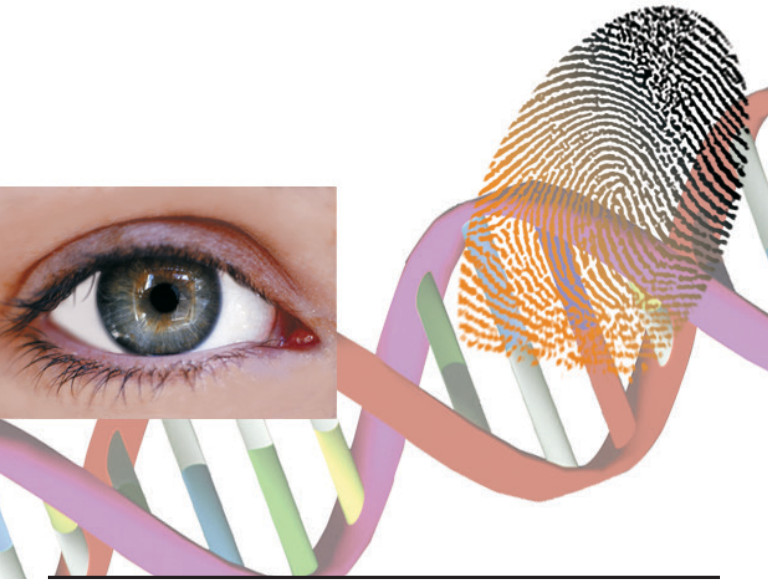
The National Center for Biotechnology Information



www.ncbi.nlm.nih.gov

HUMAN molecular genetics forms the leading edge of biomedical research and has immediate application to the diagnosis and treatment of disease. The decoding of the information in our DNA is one of molecular genetics' great challenges.

NLM's National Center for Biotechnology Information (NCBI) creates systems for storing, analyzing and retrieving the massive amount of information encoded in an organism's master blueprint, or 'genome.' If our genome is considered the 'book of life,' NCBI scientists organize that book into logical, easy-to-use indexes and chapters.

NCBI supports more than 40 databases and research tools for medical and scientific communities, including:

GenBank®, the world's most complete collection of public DNA and protein sequences. Approximately 300,000 species are represented in GenBank, which includes sequences derived from the Human Genome Project. The amount of data in GenBank

grows exponentially, paralelling the rate of gene discovery in molecular biology.

BLAST® (Basic Local Alignment Search Tool), an essential sequence database search tool for finding similarities and differences between DNA sequences. Differences in genetic sequences are often related to disease.

dbGaP, a database of studies investigating the interaction between genotype and phenotype. Large-scale genome association studies and next-generation sequencing technologies are providing researchers with extensive information on correlating disease traits with gene data.

dbSNP, a database of short genetic variations, including Single Nucleotide Variations (SNPs) and small-scale insertions and deletions. By providing information on common variations from one human DNA sequence to another, dbSNP promises to advance understanding of the molecular underpinnings of disease and transform diagnosis and treatment.

Gene, a gene-based view of genome data and annotation. This database supplies key connections between map, sequence, expression, structure, functional and homology data.

NCBI delivers genomic sequences and analytical tools to the desktops of scientists throughout the world. It also connects this information to its databases of published biomedical literature (PubMed and PubMed Central). With the Human Genome Reference Sequence in hand and access to related published literature, scientists will be able to probe deeper into the complexities of human DNA in order to better prevent and treat disease.

For more information visit www.ncbi.nlm.nih.gov

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www.nlm.nih.gov 1-888-346-3656
8600 Rockville Pike
Bethesda, MD 20894

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