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**NEWS RELEASE**

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## **Candida albicans Genome Fully Annotated**

*The National Research Council of Canada heads an international team, bringing new hope to people with immune system deficiencies*

**For immediate release**

**(July 25<sup>th</sup> 2005, Montreal, QC)** — The National Research Council Biotechnology Research Institute (NRC-BRI) today announced the publication of an article that reveals the complete genomic annotation of *Candida albicans*, a fungal pathogen that is one of the main causes of infection in people with weakened immune systems, and currently very difficult to treat. This article will appear in the first issue of the American journal *PLoS Genetics*, being published July 25, 2005. An advance copy of this article is available at <http://www.plosgenetics.org/>. This most extensive annotation of the *Candida albicans* genome was presented at the General Meeting of the American Society for Microbiology in Atlanta in June 2005.

Since 2002, NRC-BRI has been the coordinating centre for the international group of 43 scientists from 7 countries working on this project. “The complete sequencing of *Candida albicans* provided the template,” said André Nantel, Ph.D., head of NRC-BRI’s microarray lab and one of the project’s lead researchers. “As a result of our subsequent efforts, the international scientific community now has a better interpretation of the genomic and proteomic data for *C. albicans*. Work on *Candida* and on its pathogenesis will now progress more quickly towards more effective treatments,” he added.

### **A dangerous fungal pathogen for immunodeficient patients**

*Candida albicans* is a single-cell fungus that occurs naturally in human microflora. This common pathogenic microorganism afflicts the immunosuppressed. About 30 to 40% of serious fungal infections, most of which are attributable to *Candida*, result in death. Transplant recipients taking immunosuppressive drugs, HIV-positive patients, premature infants and cancer patients are most susceptible to this yeast. *Candida* is also the fourth leading source of infection in the hospital setting.

*Candida* infections are difficult to treat. Current treatments are only somewhat effective, given the microorganism’s resistance to antibiotics and their serious side effects. The complete and precise annotation of this yeast’s genome will help researchers better understand the pathogen’s weaknesses and improve upon current therapeutic agents.



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Based on the *Candida albicans* annotations, the NRC-BRI team has successfully produced the first non-commercial microarray that can be used by researchers around the world to further study the genomics and proteomics of *Candida*. The *Candida albicans* microarray consists of an orderly arrangement of about 6000 DNA samples on a glass slide. Other microarrays vary in size and are used to examine entire genomes. They can also simultaneously evaluate the expression and interactions of an organism's genes, a key step towards developing more effective medical treatments.

#### **About NRC-BRI**

The NRC-Biotechnology Research Institute ([www.irb-bri.cnrc-nrc.gc.ca](http://www.irb-bri.cnrc-nrc.gc.ca)) is the largest NRC laboratory in Canada dedicated to R&D in biotechnology. It employs more than 800 people, including NRC personnel, students, guest researchers and scientists, who work in three main sectors of research: health, bioprocess and environment. NRC-BRI is a federal-government institute that maintains ties with industry and universities to generate benefits for Canada.

#### **About the National Research Council of Canada**

Recognized globally for research and innovation, Canada's National Research Council (NRC) is a leader in the development of an innovative, knowledge-based economy for Canada through science and technology.

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