

Cell Line Bank for Cancer Research

2009 Federal Laboratory Consortium
Mid-Atlantic Region Awards

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Cell lines are important biomedical tools that have

revolutionized the way in which researchers study diseases. Human tumor cell lines can be used as in vitro model systems of cancer that are able to simulate the manner in which the disease behaves in the body. This technology describes approximately 439 human tumor cell lines that have important application as research tools to study a wide variety of cancers. The majority of the cell lines were cultured from lung cancer tissue, but they can be used to study many tumor types.

The cell line bank, which began in 1976, is the result of exhaustive efforts by NCI scientists to provide comprehensive biological tools to study several cancer types. These cell lines contain a mutation that makes the cells sensitive to the presence of growth inhibiting drugs and are valuable in identifying compounds with therapeutic potential against cancer. Scientists can use the cell lines to screen thousands of compounds for anti-cancer activity. Five of the cell lines described in the technology were made a part of the NCI 60 cell line screen, the most extensively profiled set of cancer cells in existence.

Transfer of these cell lines to the research community involved a variety of mechanisms. In order facilitate transfer of the technology, all cell lines were consolidated into one umbrella Invention Report in 2007. This aggregation allowed researchers easier access to any of the 400 plus lines contained in the invention without having to negotiate separate agreements for each line.

In order to transfer the cell lines to non-profit entities, 63 Material Transfer Agreements were negotiated by NCI's Technology Transfer Center. Additionally, thousands of MTAs for the cell lines have been executed by American Type Culture Collection. The technology was distributed to for-profit entities through 17 Biological Material Licenses negotiated by NIH's Office of Technology Transfer. Four Commercial Evaluation Licenses were used to grant the nonexclusive right to evaluate the technology's commercial potential. Additionally, nine licenses are currently being negotiated.

Although the technology is a research tool, significant tangible benefits have already been realized from its transfer. These cell lines have been the subject of more licenses than any other biological material at NCI and have netted approximately \$350,000 in royalties that will be used to further NIH's mission. Several of the cell lines have each been cited in over 100 publications and in numerous patents. In fact, numerous etiologic lung cancer genes published over the past two decades were either discovered or validated using these tumor cell lines. Significant breakthroughs have resulted from the transfer of this technology and it appears there is still wide potential for future research and further opportunities for technology transfer.

Dr. Frederic Kaye,

Head, Mechanisms of Oncogene Action Section, Center for Cancer Research, National Cancer Institute, NIH

Dr. Adi F. Gazdar,

Professor of Pathology, University of Texas-Southwestern Medical School
W. Ray Wallace Distinguished Chair in Molecular Oncology Research

Dr. Bruce E. Johnson,

Professor, Department of Medicine, Harvard Medical School
Professor of Medicine, Adult Oncology, Dana-Farber Cancer Institute
Chief of the Lowe Thoracic Oncology Program

Dr. John Minna,

Professor of Internal Medicine
Professor of Pharmacology
University of Texas- Southwestern Medical School
Hamon Center for Therapeutic Oncology
Max L. Thomas Distinguished Chair in Molecular Pulmonary Oncology
Sarah M. And Charles E. Seay
Distinguished Chair in Cancer Research

Contact:

Dr. Thomas M. Stackhouse
Associate Director
Technology Transfer Center,
National Cancer Institute, NIH
1003 West 7th Street,
Fairview Center Suite 500
Frederick, MD 21701
301-846-5071
Fax: 301-846-6820
stackhot@mail.nih.gov

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