

# **One Cell Systems, Inc.**

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## **NIH AWARDS ONE CELL SYSTEMS PHASE II SBIR TO DEVELOP ASSAY FOR DETECTING TELOMERASE**

Cambridge, MA (April 21, 2004). One Cell Systems, Inc. announced that the National Cancer Institute had recently awarded a Phase II Small Business Innovation Research (SBIR) grant to develop a novel fluorescence *in situ* hybridization (FISH) assay for detecting levels of telomerase mRNA in cancer cells. The total amount of the award is \$956,149.

Telomerase activation is associated with the onset and proliferation of most cancers, however, it is not possible to discriminate mRNA telomerase expression in single cells using current methods. Detection of telomerase expression at the mRNA level using FISH will permit identification of previously undetectable tumor cells in both blood and tissues.

“Since telomerase positive cells are present within a heterogeneous population, a FISH assay capable of precisely detecting telomerase positive cells would be broadly applicable for studies in clinical oncology. This marker can also be used to detect residual disease in patients undergoing chemotherapy,” said Jan Trnovsky, Ph.D., the Principal Investigator for this research. “We are developing a fluorescence *in situ* hybridization assay that can be performed in suspension permitting analysis by flow cytometry,” Dr. Trnovsky continued.

FISH assays are increasingly used to identify chromosomal translocations, duplications, deletions, and other chromosomal abnormalities associated with specific cancers. However, current assay formats rely on manual and labor intensive microscopic examination making rare cell detection impractical. For early diagnosis of leukemias and for detecting therapeutic relapse, sensitive, high throughput assays which can detect one cancer cell in the presence of at least 1,000 non-cancerous cells are needed. Since carcinogenesis is dependent on telomerase activation, it is a potentially valuable marker for early cancer detection. Inherent advantages of flow cytometry compared with other cell screening methods include the ability to rapidly screen large numbers of single cells and the ability to identify rare sub-populations.

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## **Company Background**

One Cell Systems, Inc. is a privately owned biotechnology company focused on developing, manufacturing, and marketing assays and reagents for clinical diagnostics, patient management and general research applications. The Company is developing assays for cancers and infectious diseases using both microscopy and flow cytometry. In its cell screening business program, the Company has developed technology for screening single cells based on level of protein secretion. One Cell Systems is leasing encapsulation instrumentation to biopharmaceutical companies and recovering high secreting cells on a fee for service basis.

Cytogenic testing is still in its infancy. Discovery of new genes and their functions are the focus of intensive efforts by biopharmaceutical companies and genome researchers. Development of new therapeutics will require use of new assay methods for genetic testing and disease management.

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