CANCER STEM CELL RESEARCH

Finding Personalized Cancer Therapies

JOHN PAUL II MEDICAL RESEARCH INSTITUTE

The John Paul II Medical Research Institute (JP2MRI) is a 401 (C) (3) non-profit organization established to create a faster and more streamlined process in conducting regenerative medicine and cancer research. This process will find cures and therapies exclusively using adult stem cells. The Institute develops research technologies that will broadly advance drug discovery and regenerative medicine for many diseases consistent with bioethics that recognizes the sanctity of human life.

The Institute has a federally registered Institutional Review Board (IRB) with networks utilizing several Iowa private hospitals and clinics. This structure allows the Institute to recruit patients with cancer and to procure their tissue samples for producing cancer stem cell for screening drugs that may lead to more effective personalized cancer therapies. The Institute can recruit patients anywhere within the United States. The Institute serves as a catalyst with a novel model that incorporates the private medical practice sector as an equal partner to increase the drug discovery output and productivity for academia, government and industry. The Institute is recruiting private physicians around the country who care for cancer patients to participate in our cancer research program. For details we refer doctors to our website (www.jp2mri.org).

About cancer stem cells

26 billion dollars are spent a year in the US on chemotherapy but only a third of patients are achieving cures. One of the reasons for this discouraging result is the presence of cancer stem cells (CSC) in a tumor. CSC are more resistant to chemotherapy, are prone to metastasizing and tend to cause cancer relapse. The Institute has made a priority in developing a research program in isolating and growing CSC from patients and performing drug susceptibility testing to find more effective personalized cancer treatments. Once sufficient research funding is achieved, the Institute anticipates that it will recruit cancer patients in the future to obtain a sample of their tumor from either diagnostic biopsies or from surgical specimens to isolate CSC.

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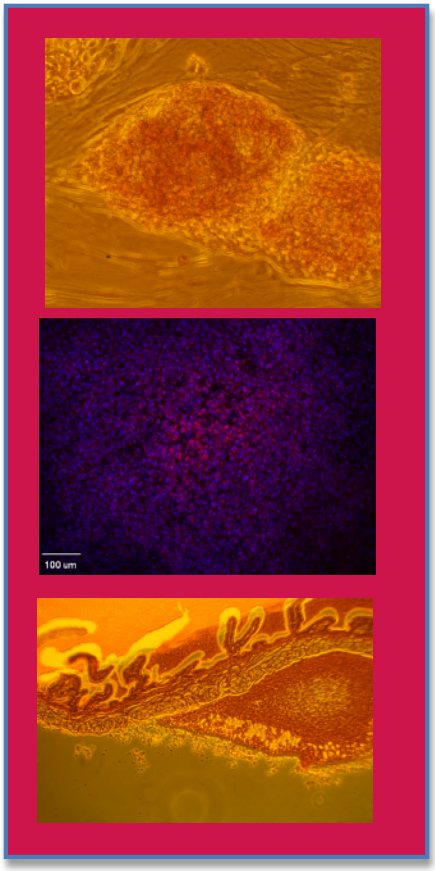
CELLULAR ENGINEERING TECHNOLOGIES INC.

Cellular Engineering Technologies Inc. (CET) is an Iowa-based biopharmaceutical company that is partnering with the Institute to grow CSC from cancer patients to assist in the Institute's mission to accelerate drug discovery and develop more effective personalized cancer therapy.

CET is a leading manufacturer of human adult stem cells and does not work with embryonic stem cells. CET has established new benchmarks in manufacturing genetically-engineered induced pluripotent stem (IPS) cells, which are created by genetic reprogramming of a patient's cell into a primitive stem cell.

IPS cells have the same properties as embryonic stem cells but do not require the destruction of human embryos.

Previous research has shown that cancer cells isolated and grown under artificial conditions lose their original cancer behavior over time and do not behave like the patient's original cancer. Drug development has been conducted on these deficient cancer cell lines, which call for a new approach. Cancer cells treated using IPS cell technology can restore a patient's cancer cell in its original state, providing a better approach to diagnose and treat cancer.



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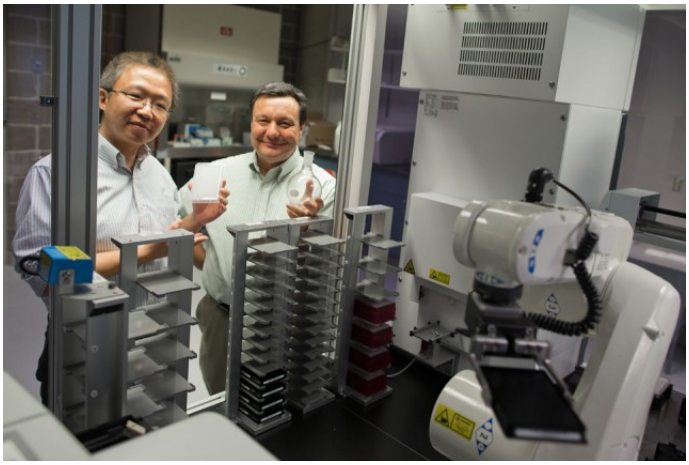

The Institute and CET are partnering with The University of Iowa High Throughput Screening Facility (UIHTS) housed in the College of Pharmacy. It is equipped to perform automated high throughput drug screening. UIHTS is currently stocked with a library of 2320 structurally diverse compounds including marketed and experimental drugs as well as natural products. The UIHTS also has a larger collection of 50,000 small molecules representing a wide swath of chemical space, optimized to be "drug like."

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Charitable donations to JP2MRI are tax-deductable and over 90 percent of donations are directed towards medical research. Send donations to 2500 Crosspark Rd., Suite W230, Coralville, IA 52241.