SCHOOL OF CHEMICAL, BIOLOGICAL & MATERIALS ENGINEERING

And

UNIVERSITY OF OKLAHOMA BIOENGINEERING CENTER

100 E. Boyd, Sarkeys Energy Center, T-335
405-325-5811
The University of Oklahoma
Norman, Oklahoma

2009 – 2010 Seminar Series

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DR. JEFFREY CHALMERS

PROFESSOR AND DIRECTOR, ANALYTICAL FLOW CYTOMETRY CORE
WILLIAM G. LOWRIE DEPARTMENT OF CHEMICAL AND BIOMOLECULAR ENGINEERING
THE OHIO STATE UNIVERSITY
COLUMBUS, OHIO

Will present a seminar on

"CIRCULATING TUMOR CELLS: CLINICAL POTENTIAL AND BIOPROCESS CONSIDERATIONS TO DEVELOP A COMMERCIALLY VIABLE PROCESS"

Despite the advances in both modern medicine and molecular analysis, the ability to accurately diagnosis, treat and monitor cancer, and especially solid tumor cancers leaves much to be desired. While blood cancers allow relatively easy access to cancer cells by just taking blood or bone marrow samples, this is not currently the case for solid tumor tissue. While not a new observation, it is now generally recognized that many (most?) solid tumors shed tumor cells into the blood stream, refereed to as circulating tumor cells, CTC. If robust, easy technology exists for sampling CTC, the ***potential*** exists to have "liquid biopsies" for solid tumor cancers just like there are for blood based cancers.

We have developed a process which utilizes a unbiased negative enrichment protocol that depletes the normal blood cells to give an enriched and relatively pure CTC cell suspension (Yang, et al. 2009). In this presentation we demonstrate that our technique is capable of detecting a significant number of CTCs in the peripheral blood of Head and Neck Cancer and Breast Cancer patients with high levels of sensitivity. Since the outcome of our negative depletion, enrichment process is a cell suspension; the final product can be further analyzed. By performing multiparameter microscopic analysis, we are able to find a significant number of circulating tumor cells which have down-regulated epithelial markers and upregulated mesenchymal markers and markers that have been suggested to be consisted with "cancer stem cells".

THURSDAY, MAY 6, 2010
COOKIES AND COFFEE -- 2:45 P.M.
SEMINAR -- 3:00 P.M.
SARKEYS ENERGY CENTER, ROOM M-204

THIS IS A REQUIRED SEMINAR FOR CHE 5971