



**Non-Confidential
Technology Disclosure**

Title Centrosome Abnormalities: a Tool for Cancer Detection, Prognosis and Treatment

Investigator: Stephen J. Doxsey, Assoc. Professor of Molecular Medicine, University of Massachusetts Medical School

Description: A rapid and effective screen for identifying neoplastic tissues is described.
The method allows for the detection of centrosome abnormalities which may **actually contribute to rather than result from** tumor development. Specifically, centrosome defects have been discovered in pre-invasive cancers of the prostate, cervix, and breast suggesting that centrosome dysfunction occurs very early in tumor development. In addition, artificial induction of centrosome defects by overexpression of the centrosome protein pericentrin results in chromosome abnormalities and cellular defects identical to those of clinically aggressive tumors.

Application: There are three potential applications of this technology:

1. **Diagnosis:** A diagnostic tool for identification of precancerous and cancerous tissue samples.
2. **Prognosis:** A test to predict aggressiveness of cancer, such as that of the prostate.
3. **Therapeutics:** Novel therapeutic targets (pericentrin and centrosomes).

Advantage: The described technology will be useful in the development of not only diagnostic and therapeutic tools, but also in a predictive test of prostate cancer aggressiveness.

Publications: Pihan et al., (2000) *Mol. Biol. Cell.*, 11, 149a
Tynan et al., (2000) *J. Biol. Chem.* 275, 32763-32768.

Patent 5,972,626

Licensing Status Available to License

Docket UMMC 96-16

Contact Anita L. Ballesteros, Ph.D
Licensing Officer
Phone: (508) 856-1626
Anita.Ballesteros@umassmed.edu