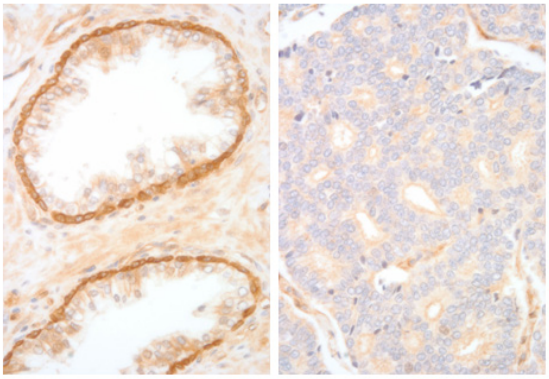
Use of Frabin/FDG4 Antibodies to Differentiate Cancer from Normal Prostate Tissue on Biopsy



Hyperplasia Carcinoma

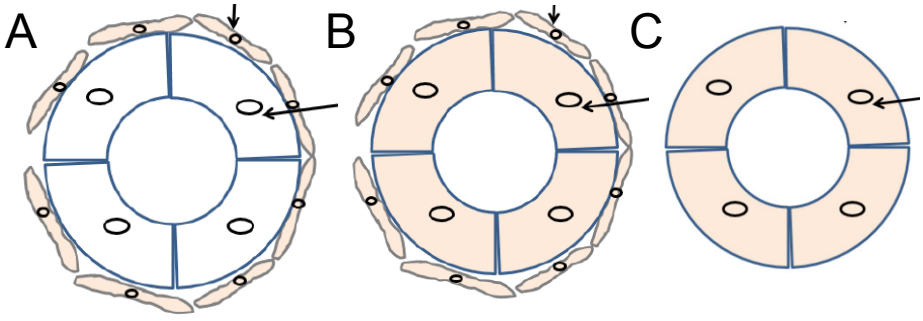
Our technology involves the use of Frabin/FDG4 antibodies to differentiate cancer from normal prostate tissue for analyzing biopsy samples. Currently, pathologists use a "cocktail" of three antibodies that may be replaced by one Frabin antibody without the loss of accuracy. Frabin is an actin-filament binding protein that has a distinct pattern of expression in prostate tissues and can differentiate three types of tissue: (1) normal or hyperplasia, (2) PIN, and (3) prostate cancer by selective staining of basal and luminal cells. Our product might provide a more cost efficient and simple solution compared to the currently used three antibody cocktail.

COMMERCIAL OPPORTUNITY

- Over one million prostate biopsies are performed annually in the US, and close to two million globally.
- Pathologists use antibody staining cocktails to differentiate cancer from normal prostate tissue for analyzing biopsy samples. The cost for the main competitor, (AMACR, p63 and 34bE12 antibodies cocktail), is estimated at $3,000 for 100 analyses. This translates to about $60 million per year for the two million prostate biopsies performed worldwide.
- Frabin has been shown to stain the basal cells in normal and benign prostatic hyperplasia cells, and stain the luminal and basal cells in precancerous prostatic intraepithelial neoplasia (PIN), and stain only the luminal cells in prostate carcinoma because the basal cells are absent (see Figures above and below).
- Breast ductal cancer cases (about 52,000 per year in the US) might further expand the market size. Ductal breast cancer cases are currently diagnosed using four antibodies (calponin, p63, cytokeratin 5/6 and e-cadherin).

TECHNOLOGY

In Figures A-C, Frabin can be seen to stain (pink areas) in (A) basal cells in normal and benign prostatic hyperplasia cells, (B) luminal and basal cells in PIN, and (C) luminal cells in prostate cancer.



PUBLICATION/PATENT

- Ottoman R, Levy J, Chakrabarti R. Association of Mir-17-92 family and its target, Frabin, with development of aggressive prostate cancer.
- Provisional patent application filed on 04/1/2014 for Drs. Chakrabarti and Coppola.

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