

Molecular imaging 'probes' pinpoint prostate cancer

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Molecular imaging has a powerful new weapon in the fight against prostate cancer. Research introduced at SNM's 57th Annual Meeting demonstrates how a novel peptide-targeted imaging agent could help clinicians detect a biological process that signals cancer in prostate cells. Information gathered about this process may even differentiate prostate tumor types and the progression of disease.

"This new molecular imaging tool will help us develop new diagnostic and therapeutic options for <u>prostate cancer</u> patients," said Chiun-Wei Huang, Ph.D. candidate, lead author and researcher at the Molecular Imaging Center of the Keck School of Medicine, University of Southern California, Los Angeles, Calif. "By identifying a signature on the cellsurface of specific tumor types at different stages, we could potentially develop better and more customized treatments for truly personalized medicine."

In this study, researchers used near-infrared fluorescent imaging, an optical imaging technique that images the low-frequency light emitted from an imaging agent containing fluorescent dye. The novel agent used in the study was prepared with a peptide that targets receptor activity involved in the prolific growth of certain <u>tumor cells</u>. This specific sequence of receptor activity is called $\alpha 2\beta 1$ integrin, an expression of building-block proteins such as collagen. Cells that display an abnormal over-abundance of this activity could be cancerous, and imaging that focuses on this <u>biological process</u> could provide essential information about the aggressive growth, survival, migration and invasiveness of



individual cases of prostate cancer.

Results of the study showed that high absorption of the peptide-targeted agent positively identified prostate tumors both in the laboratory and in three prostate tumor-bearing models. Further development of this and similar imaging agents could lead to more effective and detailed diagnosis of prostate cancer and could be used to test the effectiveness of new drug therapies to treat the disease.

Provided by Society of Nuclear Medicine

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