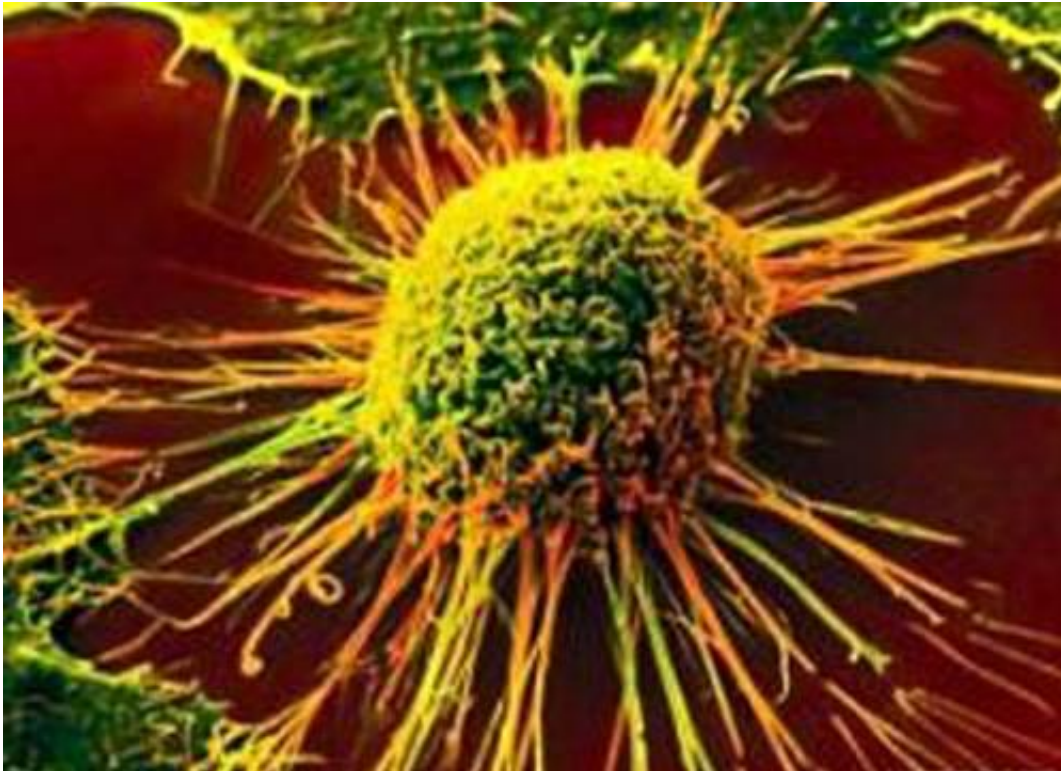


Technique to more effectively diagnose and treat cancer developed

November 18 2015



A method to better trace changes in cancers and treatment of the prostate and lung without the limitations associated with radiation has been developed by Georgia State University researchers.

Their findings were published Wednesday, Nov. 17 in *Scientific Reports*

by Nature.

The researchers developed a new imaging agent they named ProCA1.GRPR, and demonstrated that it leads to strong tumor penetration and is capable of targeting the gastrin-releasing peptide receptor expressed on the surface of diseased cells, including prostate, cervical and lung cancer.

Molecular imaging of cancer predictors using [magnetic resonance imaging](#) (MRI) offers better and improved understanding of various cancers, and drug activity during preclinical and clinical treatments. However, one of the major barriers in using MRI in evaluating specific [disease](#) predictors for diagnosis and monitoring drug effects is the lack of highly sensitive and specific imaging agents capable of showing the difference between normal tissue and tumors.

"ProCA1.GRPR has a strong clinical translation for human application and represents a major step forward in the quantitative imaging of disease biomarkers without the use of radiation," said Jenny Yang, lead author on the paper, Distinguished University Professor and associate director of the Center for Diagnostics and Therapeutics at Georgia State. "This information is valuable for staging disease progression and monitoring treatment effects."

The researchers' results are an important advancement for [molecular imaging](#) with a unique ability to quantitatively detect expression level and spatial distribution of disease predictors without using radiation.

"Our discovery is of great interest to both chemists and clinicians for disease diagnosis, including noninvasive early detection of human diseases, cancer biology, molecular basis of human diseases and translational research with preclinical and clinical applications," said Shenghui Xue, co-author on the paper and postdoctoral researcher in

Georgia State's Department of Chemistry.

Improved imaging agents such as ProCA1.GRPR have implications in understanding disease development and treatment.

More information: Fan Pu et al. GRPR-targeted Protein Contrast Agents for Molecular Imaging of Receptor Expression in Cancers by MRI, *Scientific Reports* (2015). [DOI: 10.1038/srep16214](https://doi.org/10.1038/srep16214)

Provided by Georgia State University

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