

New cell imaging can identify cancer cells

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Purdue University scientists say fluorescence that illuminates a specific protein within a cell's nucleus may lead to individualized cancer treatments.

The scientists, along with researches at the Lawrence Berkeley National Laboratory, say they've created a technique that automatically locates and maps proteins involved in regulating cell behavior.

Sophie Lelièvre, Purdue assistant professor of basic medical sciences, says the research results have made it possible to verify the distinction between multiplying cells that are harmless and those that are malignant.

Lelièvre and colleagues used mammary cells to analyze nuclear protein distribution that shifted depending on whether a cell was malignant, had not yet developed a specific function or was a normally functioning mature mammary cell.

"When you look at cells that don't yet have a specific function -- aren't differentiated, compared to fully differentiated cells, which are now capable of functioning as breast cells -- the organization of proteins in the nucleus varies tremendously," Lelièvre said. "Then looking at how the proteins in malignant cells are distributed, it's a totally different pattern compared to normal differentiated cells."

The research was detailed online in Proceedings of the National Academy of Sciences.

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