

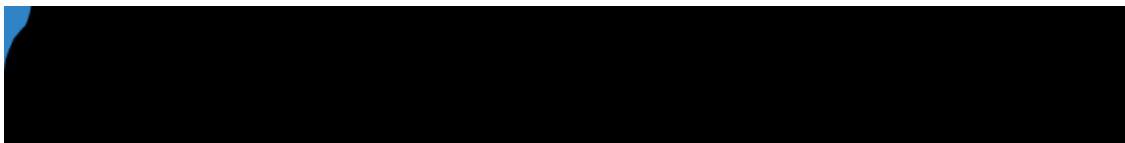


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Canada researchers map a tumor's transformation

Wed Oct 7, 2009 6:17pm EDT

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WASHINGTON, Oct 7 (Reuters) - Canadian researchers said on Wednesday they had documented the genetic transformation of a breast tumor mutation by mutation, shedding light on how cancer develops and offering potential new routes to fighting it.

They found 32 separate mutations in the tumor, at least five of which had never been linked with cancer before.

Writing in the journal Nature, they said their method might be used before starting treatment of certain cancers and as a way to monitor a patient's progress.

"This is a watershed event in our ability to understand the causes of breast cancer and to develop personalized medicines for our patients. The number of doors that can now be opened to future research is considerable," Dr. Samuel Aparicio, head of the breast cancer research program at the British Columbia Cancer Agency, who worked on the study, said in a statement.

They examined a breast tumor from a patient with estrogen-positive cancer of a type that causes about 15 percent of all breast tumors.

They compared samples from her original biopsy and from a tumor that spread 9 years later. They identified 32 mutations, 19 that were not in the original tumor.

Five of the mutations were previously unknown to researchers as playing a role in cancer.

"This study demonstrates the remarkable capacity of next-generation DNA sequencing technology," said Dr. Marco Marra, of the cancer agency's Genome Sciences Centre. "The project that decoded the first human genome in 2001 took years and an enormous amount of funding. We were able to sequence the breast cancer genome in weeks and at a fraction of the cost."

Breast cancer will be diagnosed in 1.2 million women globally this year and will kill 400,000.

(Editing by Cynthia Osterman)

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