Cancer hijack

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Genetically unstable breast cancer cells appear to hijack a mechanism used by healthy stem cells to determine how they should develop into different tissues, according to new research.

The study sheds new light on the development of a sub-type of breast cancers that are particularly hard to treat, and suggests a dual-pronged attack could be effective against them.

The research was conducted by Dr Matt Smalley of the University's European Cancer Stem Cell Research Institute, at The Institute of Cancer Research, London.

Dr Smalley said: "Current theories suggest that there may be similarities between the behaviour of normal adult stem cells and cancer cells. By better understanding the biology of adult stem cells scientists can better understand the behaviour of cancer cells and identify new targets for therapy.

"The hijacked mechanism involves a protein called Aurora Kinase, an enzyme which is essential for cell division in normal cells. It is also activated in genetically unstable cancer cells where it prevents the genetic losses and gains from becoming so extreme that the cell can no longer survive.

"If this function could be prevented, cancer cells would literally tear themselves apart."

Professor Jane Visvader of the Walter and Eliza Hall Institute of Medical Research Stem Cells and Cancer division in Victoria, Australia, said:

"The newly discovered link between Aurora kinase and the Notch pathway provides an important mechanism for regulating cell-fate decisions by mammary stem cells and highlights the importance of their interaction with the microenvironment.

"These findings also have significant implications for the development of novel therapeutic strategies for the aggressive basal-like subtype of breast cancer, in which these pathways are often deregulated."

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