cancer conference
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Drug targets cell 'velcro' to stop spreading of cancer

Cancer Research UK scientists in Scotland have identified potential drug targets to prevent cancer cells breaking away from tumours and spreading round the body, according to research presented at the NCRI Cancer Conference in Birmingham today (Monday).

Scientists based at Cancer Research UK's Beatson Institute for Cancer Research in Glasgow studied cancer cells and mice to better understand the role of integrins -the body's 'velcro' which anchors healthy and cancer cells - and stops the spread of cancer cells round the body.

Integrin molecules are located on the surface of cells and normally 'grip' healthy cells, anchoring them in the appropriate place to form tissues and organs. This prevents cells breaking away and travelling to other parts of the body where they might cause harm.

The team found that faults in an important protein called p53 can interfere with the way integrins are distributed across the cells' surface - so instead of the cells being tethered, as happens in healthy tissues, they drift throughout the body.

p53 has been called the guardian of the genome because of its ability to control cell growth and division. It does not work properly in half of cancers and is thought to be the reason many cancers develop.

Faulty p53 switches on a cell signalling system called the Rab-coupling protein (RCP) pathway. This interferes with the normal delivery route of integrins to the cell's surface. It causes a delivery mistake and the integrins are sent to the wrong part of the cell. The sticky integrins then work differently, causing the cells to move around in the body rather than being anchored in their 'home' tissue or organ.

Professor Jim Norman from Cancer Research UK's Beatson Institute, who is presenting this work at the NCRI Cancer Conference today, said: "This is exciting research. These results could lead to the development of new potential targets for future drugs to stop cancer spread."

"While it maybe some time before such drugs are available, there are clinical trials already in progress to test whether drugs that block integrins can be used to treat cancer - but now we know p53 plays a key role in changing the way integrin behaves to drive cancer spread.

He added: "Further trials testing therapies using drugs which block sticky integrin, combined with studies into the role of mutant p53, may enable scientists to design drugs that target cancer cells better whilst leaving healthy cells unharmed."

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About the NCRI Cancer Conference

The National Cancer Research Institute (NCRI) Cancer Conference is the UK's major forum for showcasing the best British and international cancer research. The Conference offers unique opportunities for networking and sharing knowledge by bringing together world leading experts from all cancer research disciplines. The fifth annual NCRI Cancer Conference is taking place from the 4-7 October 2009 at the International Convention Centre in Birmingham. For more information visit www.ncri.org.uk/ncriconference

About the NCRI

The National Cancer Research Institute (NCRI) was established in April 2001. It is a UK-wide partnership between the government, charity and industry which promotes co-operation in cancer research among the 21 member organisations for the benefit of patients, the public and the scientific community.
For more information visit www.ncri.org.uk

NCRI members are: the Association of the British Pharmaceutical Industry (ABPI); Association for International Cancer Research; Biotechnology and Biological Sciences Research Council; Breakthrough Breast Cancer; Breast Cancer Campaign; Cancer Research UK; CHILDREN with LEUKAEMIA, Department of Health; Economic and Social Research Council; Leukaemia Research; Ludwig Institute for Cancer Research; Macmillan Cancer Support; Marie Curie Cancer Care; Medical Research Council; Northern Ireland Health and Social Care (Research & Development Office); Roy Castle Lung Cancer Foundation; Scottish Government Health Directorates (Chief Scientist Office); Tenovus; Welsh Assembly Government (Wales Office of Research and Development for Health & Social Care); The Wellcome Trust; and Yorkshire Cancer Research.

About Cancer Research UK

- **Cancer Research UK is the world's leading charity dedicated to beating cancer through research.**
- **The charity's groundbreaking work into the prevention, diagnosis and treatment of cancer has helped save millions of lives. This work is funded entirely by the public.**
- **Cancer Research UK has been at the heart of the progress that has already seen survival rates double in the last thirty years.**
- **Cancer Research UK supports research into all aspects of cancer through the work of more than 4,800 scientists, doctors and nurses.**
- **Together with its partners and supporters, Cancer Research UK's vision is to beat cancer.**

For further information about Cancer Research UK's work or to find out how to support the charity, please call 020 7121 6699 or visit www.cancerresearchuk.org

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