



CLASS OF BREAST CANCER DRUGS COULD TREAT OTHER TYPES OF CANCER

A CLASS of drugs used to treat breast cancers which overproduce a protein called HER2 could also treat other types of cancer – particularly head and neck cancers, according to research presented at the National Cancer Research Institute (NCRI) Cancer Conference in Liverpool this week.

Scientists in the US at Massachusetts General Hospital Cancer Centre, Harvard Medical School and the biotechnology firm, Genentech, scanned nearly 700 human cell lines from a range of cancer types.

They identified all cells that responded to lapatinib, a type of HER2 kinase inhibitor, which blocks HER2 – a cell-signalling receptor.

HER2 kinase inhibitors, are used to treat breast cancers with high levels of HER2. Up to one in four women with early breast cancer have high levels of this protein on the surface of their cells. HER2 receives signals from other proteins called growth factors – which drive tumour development.

But surprisingly, the scientists discovered that some cells with low levels of HER2, and head and neck cancers in particular, also responded well to the drug.

These cells had high levels of a signalling protein called NRG1* which was found to switch on a protein 'cousin' of HER2 called HER3. This 'switched on' HER3 can partner with and activate HER2.

The results showed that NRG1 enables very small amounts of HER2 to become activated to a greater extent than would be expected.

This suggests that treatment with HER2 inhibitors could be beneficial in patients even if they only had low levels of the protein. Usually drugs like lapatinib would not be considered as an effective treatment for these tumour types.

Paper author, Professor Jeff Settleman, from Massachusetts General Hospital Cancer Centre and Harvard Medical School, said: "These findings reveal that the protein NRG1 can act as a 'biological flag' and identify another patient group who may benefit from HER2-targeted kinase inhibitors.

"It's particularly exciting because it may mean that some head and neck cancers can be effectively treated with currently available drugs, such as the breast cancer drug, lapatinib."

Dr Jane Cope, director of the NCRI, said: "This research shows how more detailed analyses of tumour samples could help doctors predict who will benefit most from a particular treatment. It also suggests that using existing drugs in new ways could bring benefit to a wider group of cancer patients."

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Notes to Editors:

*Neuregulin-1

View the conference abstract here: <http://www.ncri.org.uk/ncriconference/2011abstracts/abstracts/Plen4.html>

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 seventh annual NCRI Cancer Conference is taking place from the 6-9 November 2011 at the BT Convention Centre in Liverpool. 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 22 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 CANCER UK, Department of Health; Economic and Social Research Council; Leukaemia & Lymphoma 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; The Prostate Cancer Charity; Welsh Government (National Institute for Social Care and Health Research); The Wellcome Trust; and Yorkshire Cancer Research.

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