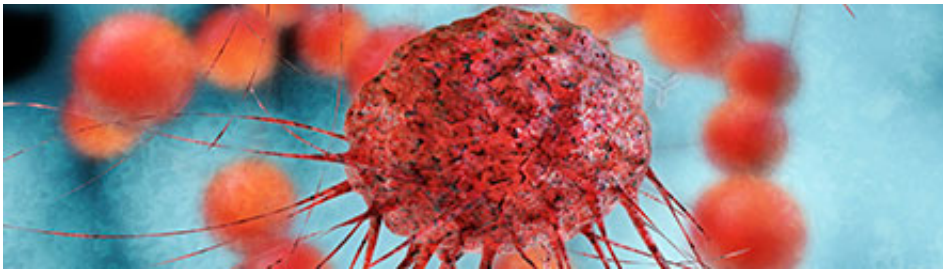


Protein associated with improved survival in some breast cancer patients

June 29 2016



Credit: University of Nottingham

A family of proteins that help cancer cells survive and spread around the body may be associated with improved prognosis for some women receiving treatment for breast cancer, research has shown.

The study, led by academics at The University of Nottingham and published online by the academic journal *Oncotarget*, discovered that when high levels of the protein calpain were detected in large primary breast tumours from patients given chemotherapy treatment to shrink their tumour before surgery, these patients were more likely to survive.

The work, which was funded by the [breast cancer](#) research charity Breast Cancer Now, was conducted in the laboratory of Professor Stewart Martin, in the University's Translational and Radiation Biology Research group.

Professor Martin said: "We are passionate about understanding how breast cancer gains the ability to spread around the body, and what makes certain cancers resistant to treatment, so we can improve survival.

"The results increase our understanding of this important protein in breast cancer, particularly in poor prognostic groups, which may be the key to unlocking effective ways to target these proteins to improve patient outcomes."

The latest research involved biopsy specimens taken from women aged between 23 and 83 years old who were treated at the Leeds Teaching Hospitals NHS Trust between 2005 and 2009 for inflammatory and non-inflammatory breast cancer.

It looked at the expression of calpain in the initial tumour biopsy and again in the biopsied tumour removed following adjuvant chemotherapy which is designed to shrink the cancer before surgery.

The levels of calpain and the resulting survival rates were analysed and those patients with higher levels of calpain were associated with an improved survival rate.

The study also involved researchers at the Leeds Institute of Cancer Medicine and Pathology and the Department of Breast Surgery at St James' University Hospital in Leeds, Breast Screening Unit Leeds/Wakefield at Seacroft Hospital in Leeds and Histopathology, University Hospitals Birmingham NHS Foundation Trust, Queen Elizabeth Hospital, Queen Elizabeth Medical Centre and the University of Birmingham.

The full academic paper, *The Calpain System is Associated with Survival of Breast Cancer Patients with Large but Operable Inflammatory and Non-Inflammatory Tumours Treated with*

Neoadjuvant Chemotherapy, can be found on the Oncotarget website.

Additional research funding to continue the work is currently being raised through the University's Life Cycle 6 campaign, which will see a team of University of Nottingham staff undertaking a gruelling 1,400 mile endurance bike ride this August to the four corners of Britain.

As well as sponsoring the endurance cyclists and taking part in the community bike ride, the University is encouraging people to hold their own fundraising events such as bake sales, dress down days, sky dives and charity discos. A list of ideas and more information features on the Life Cycle website.

The fundraising will support experts at Nottingham who are working on stopping the spread of breast cancer. The research focusses on understanding how breast cancer can spread outside of the breast and grow in other places around the body and what we can do to stop this process.

More information: Sarah J. Storr et al, The calpain system is associated with survival of breast cancer patients with large but operable inflammatory and non-inflammatory tumours treated with neoadjuvant chemotherapy, *Oncotarget* (2014). [DOI: 10.18632/oncotarget.10066](https://doi.org/10.18632/oncotarget.10066)

Provided by University of Nottingham

Citation: Protein associated with improved survival in some breast cancer patients (2016, June 29) retrieved 5 May 2024 from <https://medicalxpress.com/news/2016-06-protein-survival-breast-cancer-patients.html>

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