

# Gene study offers new target for breast cancer drugs

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(PhysOrg.com) -- A gene called POLQ is linked to an eight-fold risk of breast cancer returning, according to Oxford University research published in the journal *OncoTarget*. Developing drugs to block POLQ could increase survival and stop the cancer coming back, say the scientists.

The Cancer Research UK and Medical Research Council-funded scientists at the Gray Institute for [Radiation Oncology](#) and Biology in Oxford examined data from 279 patients diagnosed in the early 90s with early breast cancer. They found excessive levels of POLQ were linked to markedly increased risk of cancer coming back.

The team confirmed these results with [genetic data](#) from several other studies of breast cancer patients, amounting to more than 800 patients in the UK, the Netherlands and Sweden.

Professor Gillies McKenna, director of the Cancer Research UK/MRC Gray Institute for Radiation Oncology and Biology at Oxford University, said: 'This is important research which provides evidence that POLQ may be a very appealing target for drug development.

'As POLQ is not switched on by most healthy tissues it is possible that if drugs could be developed to block this gene, they would make tumours more responsive to treatments such as radiotherapy and chemotherapy but not increase the side effects caused to healthy cells. Drugs that block POLQ may be able to reverse the very poor survival associated with over

production of this gene.'

The reason why POLQ is linked to poor survival is not yet clear. It is possible that it causes tumour cells to be resistant to treatments such as [radiotherapy](#) which are often required to treat early breast cancer patients. It is also possible that POLQ enables tumour cells to behave in a more aggressive way than cancers that do not express the gene.

Dr Lesley Walker, Cancer Research UK's director of science information, said: 'Fundamental scientific research like this to examine the genetic causes for [breast cancer](#) provides us with the foundations to develop new exciting drugs to beat this disease and increase survival in the future.'

Provided by Oxford University

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