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At regular intervals, the Breast Cancer Research paper reporter, Dr Valerie Speirs, or an invited reporter will make a selection of the most interesting articles relevant to research in breast cancer featured on the Faculty of 1000 website. Comments from Faculty of 1000 on these papers will be made available, along with a short report if the articles have a related theme.

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Viewpoint

Wnt signalling in mammary carcinogenesis

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The Wnt family consists of secreted glycoproteins expressed by a number of different tissues including the mammary gland. They are multi-functional proteins controlling diverse cellular events such as proliferation, polarity, differentiation and organogenesis. Wnt ligands bind to the extracellular cysteine-rich domain of the Frizzled family of receptors. Activation of the Wnt signalling pathway is a common feature of a number of human cancers, and culminates in the cytosolic stabilisation of β -catenin, a transcriptional co-factor. However, there is still some uncertainty regarding just how important Wnt signalling is in breast cancer.

Two new findings provide strong evidence for the importance of Wnts in breast cancer development. Ugolini *et al.* (*Oncogene* 2001, **20**:5810-5817) studied the expression pattern of secreted Frizzled-related protein (SFRP1) mRNA in breast cancers. SFRP1 encodes a protein that contains a cysteine-rich domain similar to the Wnt-binding site of Frizzled receptors and is a secreted inhibitor of Wnt signal transduction. They found that SFRP1 was expressed in normal mammary gland but lost in more than 80% of tumours. In other words, loss of an inhibitor of the pathway correlated with both activation of the pathway and breast cancer formation. In a related article, Jonsson *et al.* (*Cancer Res* 2002, **62**:409-416) adopted a more

direct approach by exploring the clinical relevance of immunohistochemical expression of a member of the Wnt family, Wnt-5a, in primary invasive carcinomas. Loss of Wnt-5a was associated with poorer prognosis and increased risk of relapse.

These two articles add weight to the hypothesis that the Wnt pathway is important in breast carcinogenesis and warrants further research. Wnt-5a in particular may be important in a diagnostic setting as a clinical marker of an aggressive tumour phenotype and predictor of disease recurrence.

Articles selected from Faculty of 1000

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For the Faculty of 1000 evaluation of this article please see http://breast-cancer-research.com/reports/bcr6_02.asp#chenevix
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For the Faculty of 1000 evaluation of this article please see http://breast-cancer-research.com/reports/bcr6_02.asp#williams