

Lay Summary

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The role of amyloid-precursor protein processing (APP) in breast cancer; lessons learnt from Alzheimer's disease

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Cancer and dementia are major causes of death globally. Curiously many of the features that cancer cells show, are also found in Alzheimer's disease (AD). Despite this, an unusual inverse association has been noted between these diseases. That is, that people who develop AD have either not previously had cancer or are less likely to develop cancer and vice versa. The reasons for this strange relationship are not known. A protein called amyloid precursor protein (APP) is a key determinant of the development of AD, with amyloid beta ($A\beta$) believed to drive the development of AD, but the role of APP is unclear in breast cancer. This innovative, cross-disciplinary project will provide a comprehensive understanding of APP processing in breast epithelial cell models that mimic disease progression. It will bring new knowledge of APP regulation and function on cell behaviour. Drugs for identified targets could be tested, some already at various stages of development in the Alzheimer's field, to determine if they optimise the effects of current treatment options.