

Cell division finding could boost understanding of cancer

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New insights into how the cells in our bodies divide could improve our knowledge of a condition linked to cancer, a study suggests.

Errors in the cell division process – which allows us to grow and stay healthy – can lead to a [genetic disorder](#) called aneuploidy, which is also associated with [birth defects](#) and infertility.

Researchers at the University of Edinburgh have pinpointed the key role played by a protein in ensuring that [cells](#) separate correctly.

During cell division, chromosomes containing our DNA duplicate and then separate to form two identical copies of the original cell. Aneuploidy arises when chromosome pairs fail to separate properly.

Scientists say that a protein – called shugoshin – serves two important functions. It recruits other parts of the cell which are needed for chromosome separation and enables an in-built error correction system to monitor cells as they divide.

Researchers studied the effect that disabling shugoshin had on [cell division](#) in yeast. The team found that in the absence of a working shugoshin protein, cells were more likely to contain abnormal numbers of chromosomes.

Cell division in yeast is very similar to that of humans, making it an excellent model in which to study the role that shugoshin plays in

preventing [aneuploidy](#) in people.

The study, published in the journal *eLife*, was funded by the Wellcome Trust, the European Molecular Biology Organisation, the Scottish Universities Life Sciences Alliance and the Darwin Trust of Edinburgh.

Dr Adele Marston, of the University of Edinburgh's School of Biological Sciences, who led the study, said: "Faults in these proteins are linked to some types of cancer, and our new discoveries about how they function in yeast could help us understand how they can sometimes contribute to disease in humans."

Provided by University of Edinburgh

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