Cell Division Discovery Could Offer Fresh Insight Into Cancer

New findings on how the cells in our bodies are able to renew themselves could aid our understanding of health disorders, including cancer.

Scientists have explained a key part of the process of cell division, by which cells are able to keep our organs functioning properly.

They discovered a set of proteins that stabilise the sequence of events in which cells duplicate their DNA and then separate into two new cells, each identical to the original. Flaws in this delicate, complex operation can lead to cancer.

The findings help explain a fundamental process in all living things, in which cells must continually divide to keep the organism alive and well.

Researchers at the University of Edinburgh found that a set of proteins, known as the Ska complex, help anchor DNA, the form of chromosomes, by interacting with strands of cell material. Chromosomes remain attached to these strands as they are separated, in a process that helps distribute DNA correctly to the newly formed cells.

Scientists determined the structure of the relevant part of the protein complex by analysing crystals of it with lab tools and cell-based experiments. This showed how the Ska complex attaches to the strands, helping to bind the DNA material.

The study, published in *Nature Communications*, was carried out in collaboration with the University of Basel, Technische Universität Berlin, and the National Institute of Immunology in New Delhi and funded by the Wellcome Trust.

Dr JP Arulanandam, of the University of Edinburgh's School of Biological Sciences, who led the work, said: "Our findings represent a milestone in resolving the mystery of how these key proteins enable new cells to separate properly and equally, in this essential process for life. The findings of our work have the potential to create new avenues in drug discovery towards fighting cancer."

Source URL (retrieved on *10/26/2014 - 4:49am*):
http://www.surgicalproductsmag.com/news/2014/01/cell-division-discovery-could-offer-fresh-insight-cancer