

New research suggests a novel route in the fight against cancer

November 23 2015

In a new study published today in *Nature Structural and Molecular Biology*, scientists from the University of Surrey have uncovered a collection of important proteins that carry out and regulate critical biological processes. As the malfunctioning of these proteins and processes are linked to diseases such as cancer, their findings could help with the development of more effective therapies for treating incurable and debilitating illnesses.

In the study, the team provide the first comprehensive insight into an important class of [regulatory proteins](#), RNA-binding proteins, and their interaction with the molecule mRNA - an important molecule that guides the synthesis of proteins - in two living organisms, baker's yeast and roundworms. Though these two organisms are very different, the scientists found a striking evolutionary conservation in the proteins they uncovered, suggesting new functions for metabolic enzymes, which the team believes has remained in existence for billions of years.

"This is an important breakthrough as the proteins and processes we have identified are also present in humans, and we know they have strong links to diseases such as cancer and neurodegenerative diseases. Now we can use our new knowledge to test whether this is the case - a new mechanism for controlling key biological processes could eventually lead to the development of effective cancer treatments," said lead author Professor André Gerber from the University of Surrey

"It could be that the RNA is driving the function, harking back to

ancient mechanisms, before proteins were on the scene, or it could be that the proteins have a hidden function that we didn't know about," added co-author, Dr Emma Laing from the University of Surrey.

More information: Conserved mRNA-binding proteomes in eukaryotic organisms, *Nature Structural and Molecular Biology*, [DOI: 10.1038/nsmb.3128](https://doi.org/10.1038/nsmb.3128)

Provided by University of Surrey

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