

Researchers seek to treat protein-based diseases

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Scientists at the University of Essex have made a further step towards the potential future development of medicines to help combat a range of diseases currently considered "undruggable".

The study, published in the journal *PLOS ONE*, relates to a protein known as Activator Protein-1 (AP-1) which is linked to a number of different cancers. AP-1 consists of two proteins which bind to DNA and lead to cell growth. Normally AP-1 functions by helping cells to grow and divide but when there is an abundance of this protein it can lead to cancers forming.

The research team's study at Essex, led by Dr Jody Mason from the School of [Biological Sciences](#), involved using a very small modified protein known as a "helix-constrained peptide" to block the two proteins in AP-1 from binding to each other. By preventing binding, these "interfering [peptides](#)" stop the protein from functioning, and therefore harness the potential to prevent cancers forming.

There is a real need for drug development in this area as the result could lead to curing or modifying a whole range of protein-based diseases which currently cannot be treated with traditional small molecule medicine.

As Dr Mason explained, it is hoped this research will better inform the development of peptide-based drugs where AP-1 is involved.

More information: Rao, T. (2013) Truncated and Helix-Constrained Peptides with High Affinity and Specificity for the cFos Coiled-Coil of AP-1. *PLoS ONE* 8(3): e59415. [doi:10.1371/journal.pone.0059415](https://doi.org/10.1371/journal.pone.0059415)

Provided by University of Essex

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