

Researchers develop a tool for rapid breakdown of cellular proteins

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Cellular functions depend on the functionality of proteins, and these functions are disturbed in diseases. A core aim of cell biological research is to determine the functions of individual proteins and how their disturbances result in disease.

One way to study [protein](#) functions is to examine the effects of rapidly removing them from cells. During the past years, researchers have

developed several techniques to achieve this. One of these techniques is known as AID, or auxin-inducible degron. This method utilizes the signaling of a class of plant hormones known as auxins to rapidly deplete individual proteins from cells.

The research group headed by Academy Professor Elina Ikonen at the University of Helsinki increased the speed and improved the hormone-dependency of the AID technique in human cells. The researchers were able to degrade the targeted cellular proteins within minutes.

In addition, the researchers expanded the potential uses of the technique to encompass several types of proteins. The method can also be employed in the acute degradation of proteins whose long-term absence cannot be tolerated by cells.

The study was published in *Nature Methods*.

"The technique we have developed is useful primarily in research, but thanks to advances in [gene technology](#) it also has potential for novel diagnostic and therapeutic methods," Elina Ikonen says.

More information: Shiqian Li et al. An efficient auxin-inducible degron system with low basal degradation in human cells, *Nature Methods* (2019). [DOI: 10.1038/s41592-019-0512-x](https://doi.org/10.1038/s41592-019-0512-x)

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