

## Zinc fingers: New AI-powered biotech innovation could offer unique advantages over CRISPR when building gene-editing disease therapies

A new study has developed what the researchers call the “world’s first” simple, modifiable proteins. Called “zinc fingers,” these special proteins were developed partially through artificial intelligence.

Scientists from the [University of Toronto and the NYU Grossman School](#) of Medicine came up with the method, which is expected to speed up the development of gene therapies. This could be a game-changer for how doctors treat DNA mistakes that happen over time. This is partly because our genes change naturally as we age, which makes it inevitable that mistakes will happen. Or, of course, from genetic disorders inherited at birth.

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Zinc fingers are one of the most common types of protein structures in the body. They can guide DNA repair by grabbing enzymes that look like scissors and telling them to cut out the wrong parts of the code.

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ZFDesign [screens] over 50 billion potential zinc finger-DNA interactions in the researchers’ labs produced the data used to build the model.

“Our program can identify the right grouping of zinc fingers for any modification, making this type of gene editing faster than ever before,” says study lead author David Ichikawa, Ph.D., a graduate student at NYU Langone Health.

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