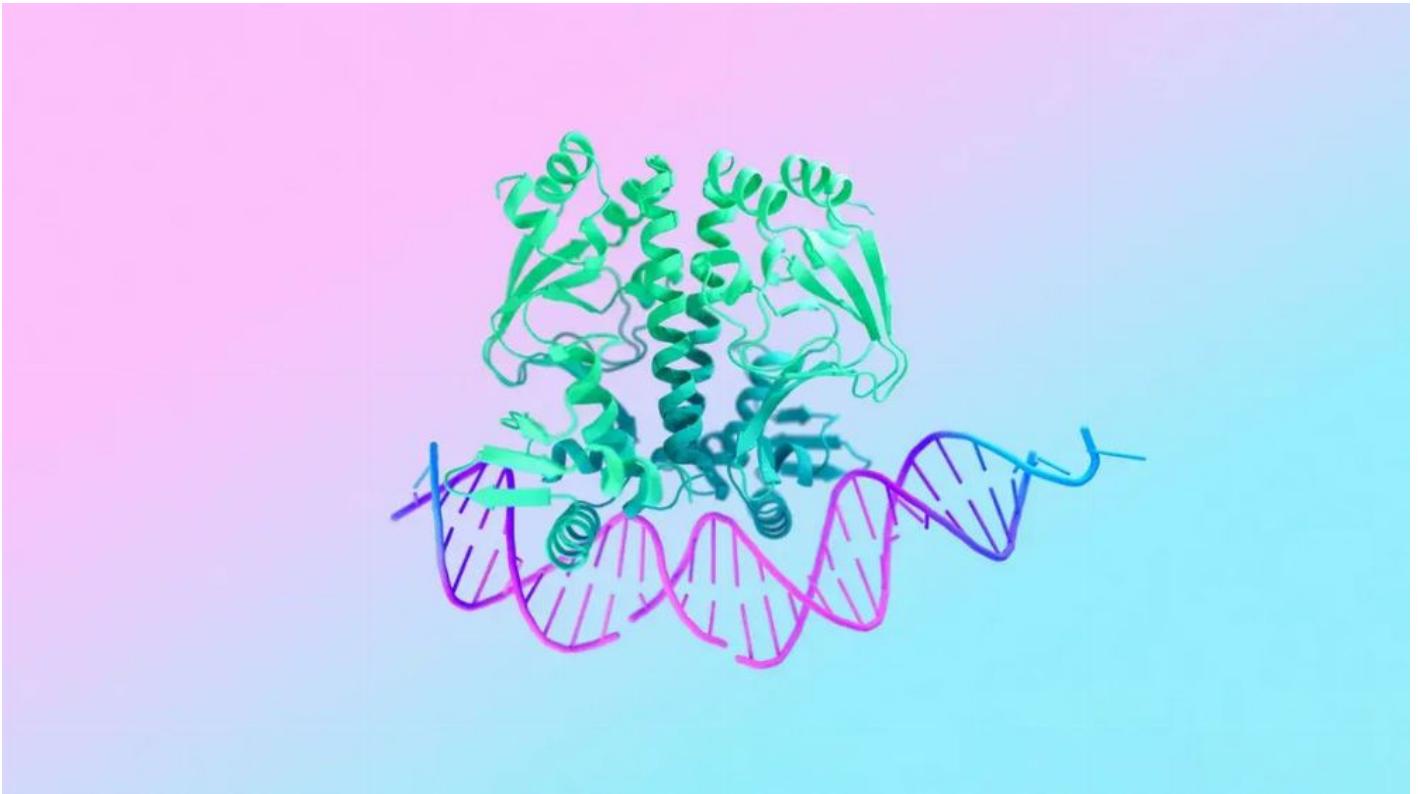


AlphaFold3

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About AlphaFold3:

- It is a new **AI model** developed by **Google DeepMind** and Isomorphic Labs.
- It is a revolutionary model that can **predict the structure and interactions** of all **life's molecules** with unprecedented accuracy and even it mapped the behaviour for all of life's molecules, including human **DNA**.
- It can generate molecules' joint 3D structure, revealing how they all fit together.
- It models large biomolecules such as **proteins, DNA and RNA**, as well as small molecules, also known as ligands — a category encompassing many drugs.
- Furthermore, AlphaFold 3 can **model chemical modifications** to these molecules which control the healthy functioning of cells, that when disrupted can lead to disease.
- It assembles its predictions using a **diffusion network**, akin to those found in AI image generators.
- **Significance**
 - It allows scientists to **see cellular systems** in all their complexity, across structures, interactions and modifications.
 - This new window on the molecules of life reveals how they're all connected and **helps understand** how those connections affect biological functions — such as the **actions of drugs**, the production of hormones and the health-preserving **process of DNA repair**.

Q1: What is DNA?

Deoxyribonucleic Acid (DNA) is a set of instructions found in a cell. These instructions are used for the growth and development of an organism. The DNA of a person is unique, and variation in the sequence of DNA can be used to match individuals and identify them.

Source: [Google DeepMind unveils next generation of drug discovery AI model](#)

Source: <https://vajiramandravi.com/current-affairs/alphafold3/>

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