

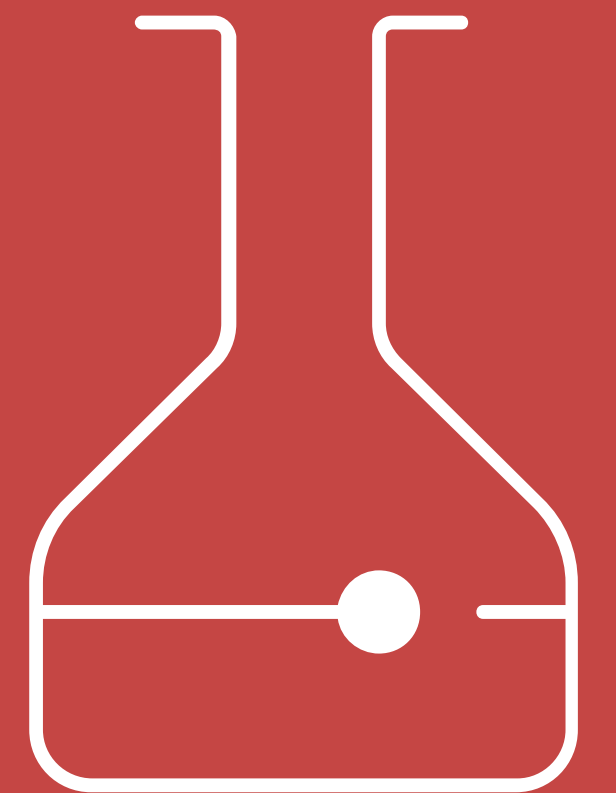
THE
NOBEL
PRIZE

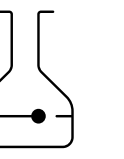
CHEMISTRY PRIZE 2024

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The secrets of proteins

Nobel Prize lessons





The Nobel Prize in Chemistry

“to the person who made the most important chemical discovery or improvement”





Chemistry prize 2024

This year's chemistry prize rewards discoveries that make it possible to predict how proteins will be structured and to design new variations of them.





The 2024 chemistry laureates

David Baker is awarded "*for computational protein design*" and Demis Hassabis and John Jumper "*for protein structure prediction*".



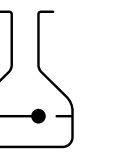
David Baker
Born: 1962, USA



Demis Hassabis
Born: 1976, UK



John Jumper
Born: 1985, USA

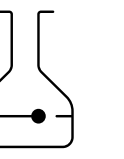


What is life?



According to science:

- Life is in balance with its surroundings
- Life reacts to its surroundings
- Life is made up of cells
- Life has metabolism
- Life can reproduce

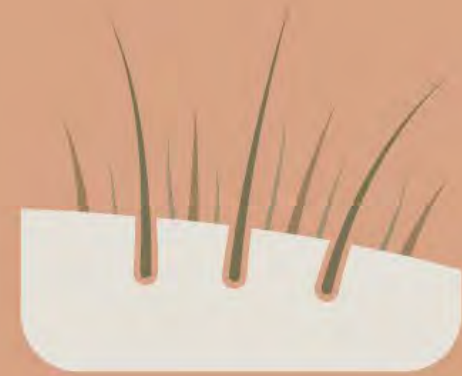


Proteins are the molecules of life

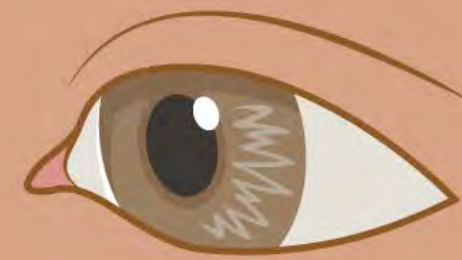
Proteins are found in all living things and have many different functions.



Enzymes



Structural proteins



Receptors



Transporter proteins



Gene regulatory proteins

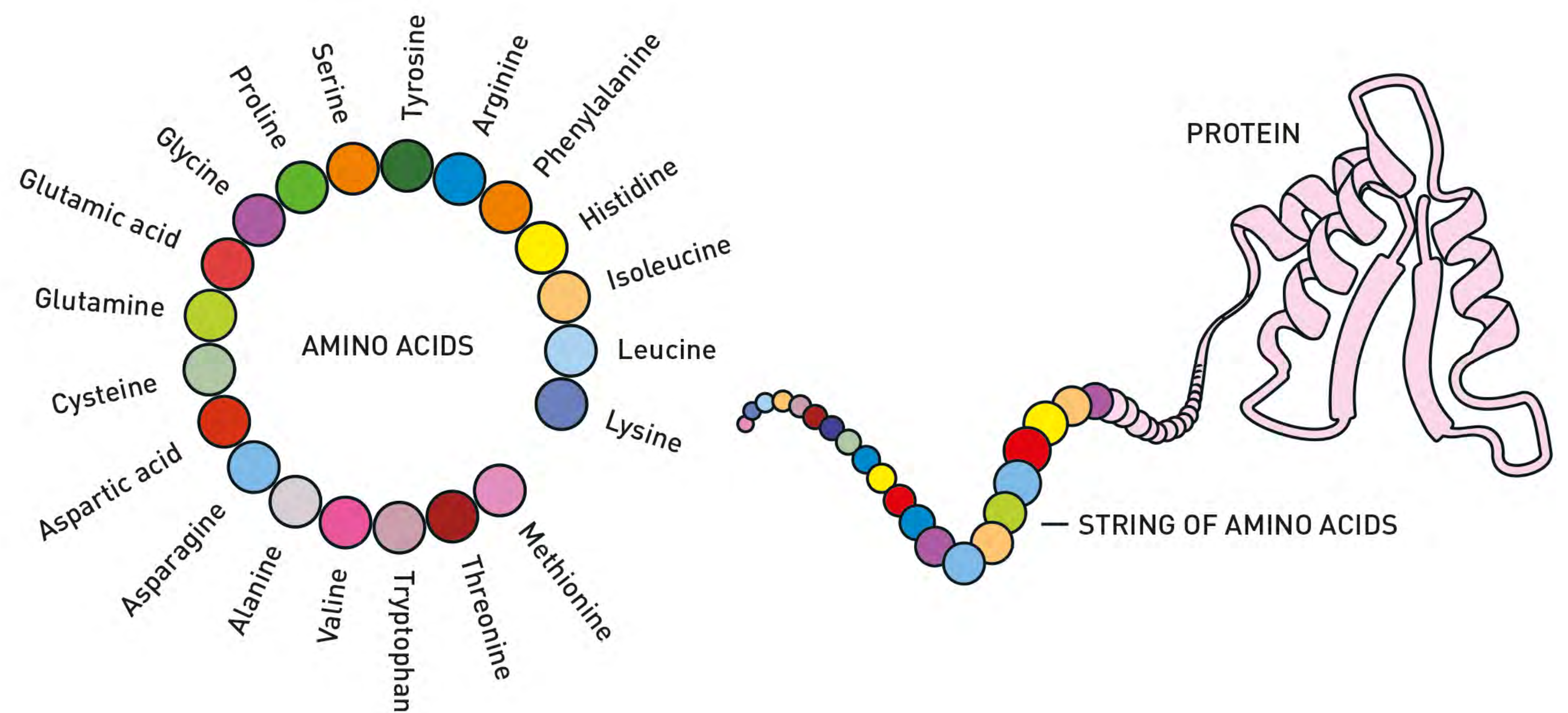


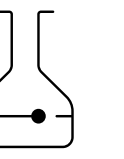
Signaling proteins



Amino acids make up proteins

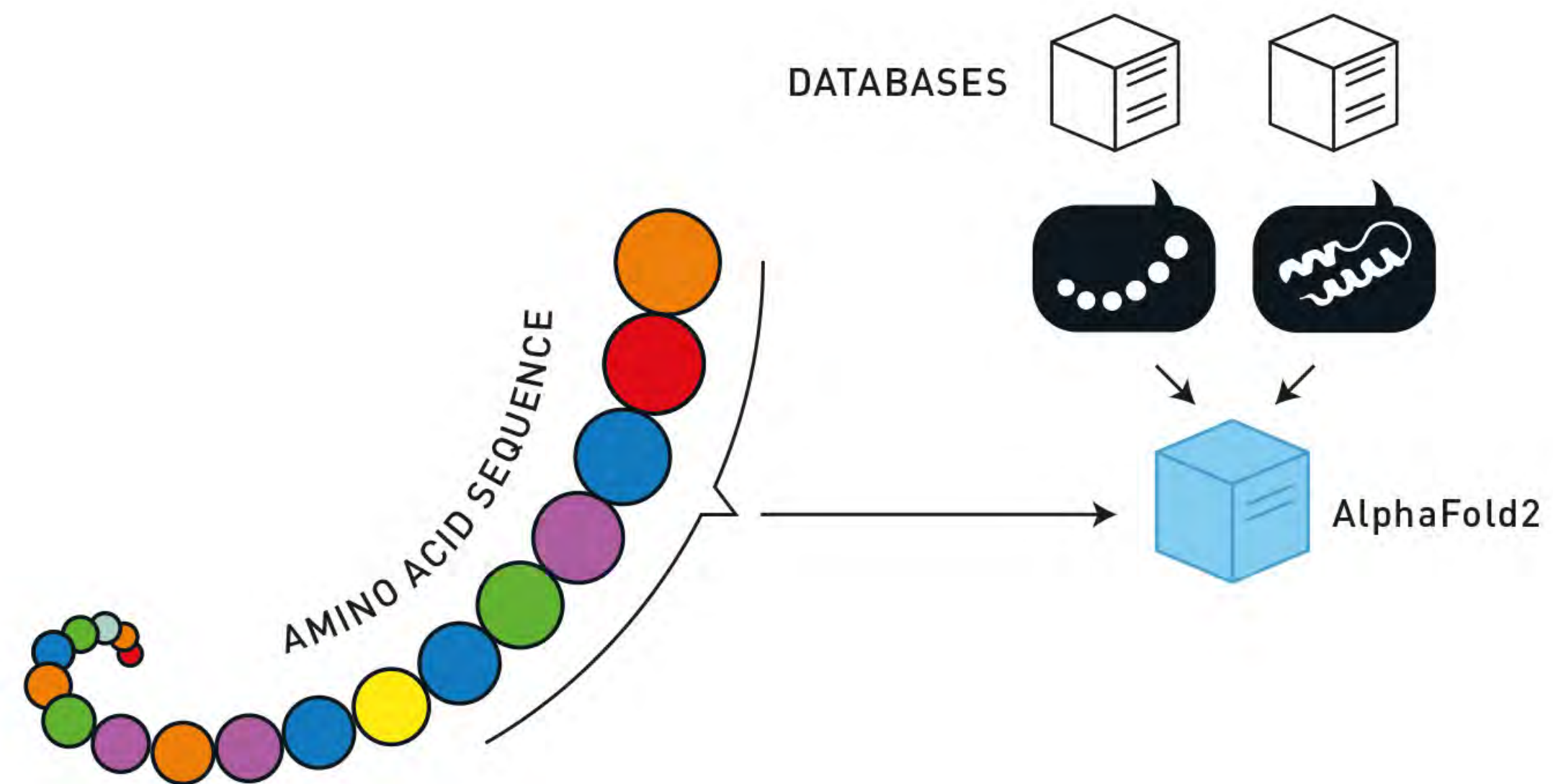
Proteins are built from combinations of 20 different amino acids.





AlphaFold2

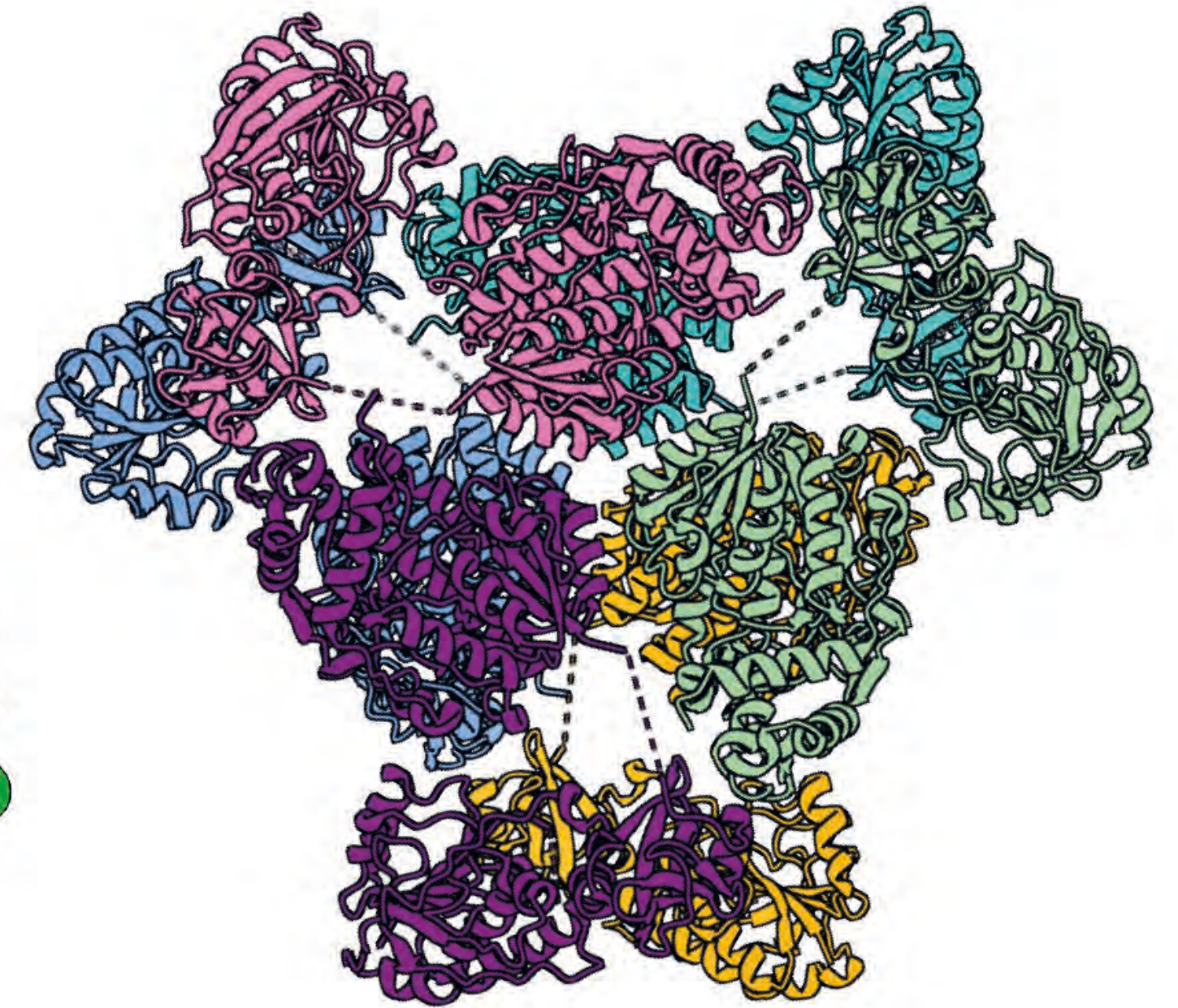
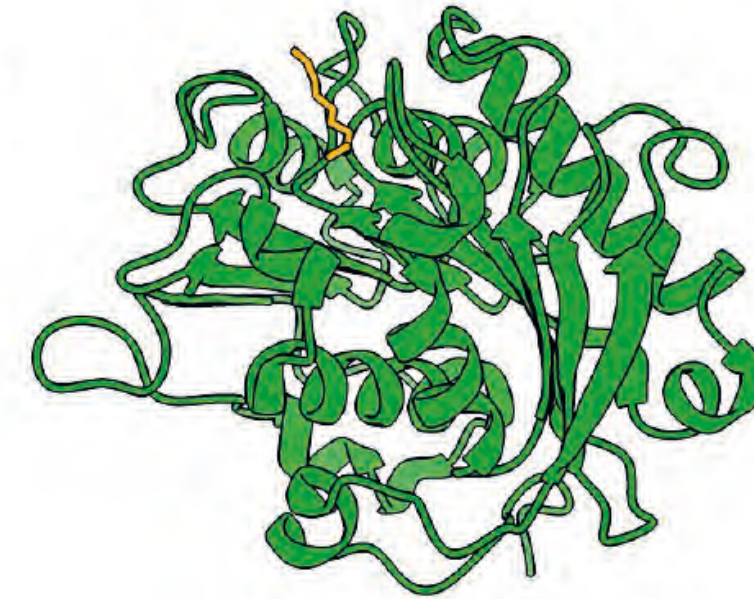
Demis Hassabis and John Jumper have developed an AI model that can predict a protein's form based on the sequence of amino acids.

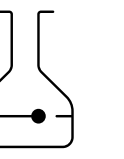




Rosetta

David Baker developed a computer programme called Rosetta that can design new proteins.

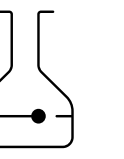




For the greatest benefit to humankind

The laureates' discoveries hold enormous potential.





“I’ve always thought if we could build AI in the right way, it could be the ultimate tool to help scientists, help us explore the universe around us.”

Demis Hassabis, Nobel Prize in Chemistry 2024

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Nobel Prize lessons