Three-dimensional molecular biology technique, the foundation for 'dormant' technology of the future to win the Nobel Prize in Chemistry

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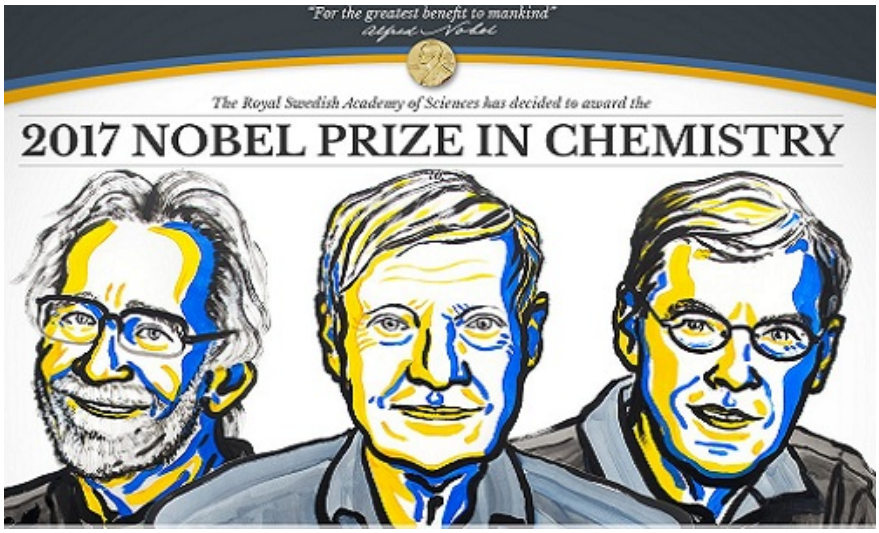
1. The 2017 Nobel Prize for Medicine is awarded to 3 scientists
2. The 2017 Nobel Prize for Physics was awarded to research on gravitational waves
3. 9 most famous Nobel prizes in history, contributing to change the world

3 scientists have invented the technique called refrigeration experiment microscope, which helps to study biological molecular structure in high resolution. This is a revolutionary achievement in biochemistry.

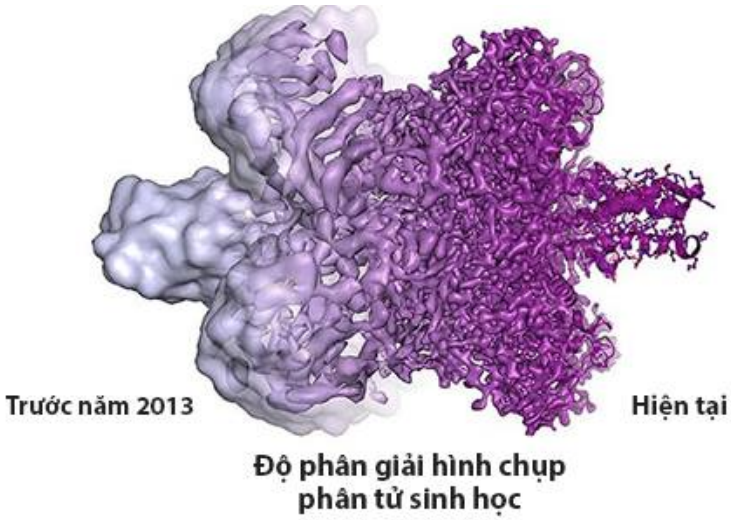


Portrait of three Nobel Prize winners in 2017: Jacques Dubochet, Joachim Frank and Richard Henderson.

Previously, electron microscopes were only used to capture dead matter, because biological materials would be destroyed by powerful electron beams.

Scottish scientist Henderson, a professor at the MRC Molecular Biology Laboratory, used an electron microscope to successfully create the first three-dimensional image of a protein at atomic-level resolution.

Frank, a German professor at Columbia University in New York, developed a method of processing images, from fuzzy two-dimensional images of electron microscopes into a crisp 3D structure, making the technology available. wider applicability.



New technique for capturing sharper biological molecules.(Graphics: Guardian.)

Dubochet's research, an emeritus professor at the University of Lausanne, Switzerland, allows the freezing of biological molecules while maintaining their shape. Dubochet adds water to the electron microscope. Liquid water evaporates in the vacuum chamber of the electron microscope, causing the molecular molecule to crumble. In the early 1980s, Dubochet successfully created vitreous water - cold water so fast that it hardened in liquid form around a biological specimen, allowing the natural shape of biological molecules to be preserved even in the Vacuum package.

The work of three scientists provides advanced ways to observe the complex operation that takes place inside human body cells in resolution. At the same time, this technology helps preserve living tissue more effectively, creating a stepping stone to developing 'hibernation' technology.

In addition, scientists can use this new technique to visualize everything from proteins that cause antibiotic resistance to the surface of Zika virus.

The reward worth more than $ 1.1 million will be divided equally among all three scientists.