Cape Peninsula University of Technology

Department of Chemistry

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05 October 2022

Nobel Prize in Chemistry 2022

The Nobel Prize in Chemistry 2022 was awarded jointly to Carolyn R. Bertozzi, Morten Meldal and K. Barry Sharpless ***"for the development of click chemistry and bioorthogonal chemistry"***

Ill. Niklas Elmehed © Nobel Prize Outreach

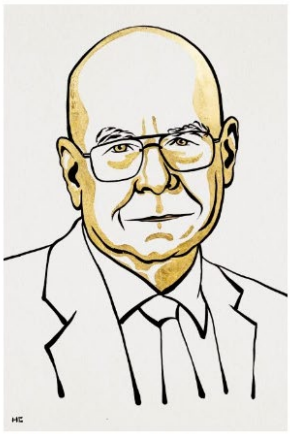
Carolyn R. Bertozzi

Prize share: 1/3

Ill. Niklas Elmehed © Nobel Prize Outreach

Morten Meldal

Prize share: 1/3



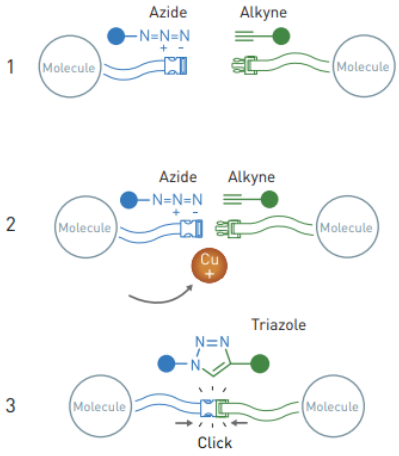
Ill. Niklas Elmehed © Nobel Prize Outreach

K. Barry Sharpless

Prize share: 1/3

The click reaction that changed chemistry

Azides and alkynes react very efficiently when copper ions are added. This reaction is now used globally to link molecules together in a simple manner.



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It just says click – and the molecules are coupled together

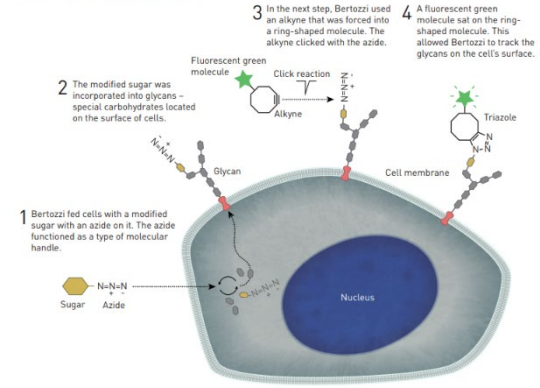
The Nobel Prize in Chemistry 2022 is about making difficult processes easier. Barry Sharpless and Morten Meldal have laid the foundation for a functional form of chemistry – *click chemistry* – in which molecular building blocks snap together quickly and efficiently. Carolyn Bertozzi has taken click chemistry to a new dimension and started utilising it in living organisms.

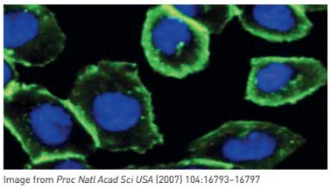
Carolyn R. Bertozzi, born 1966 in USA. PhD 1993 from UC Berkeley, CA, USA. Anne T. and Robert M. Bass Professor at Stanford University, CA, USA and Investigator, Howard Hughes Medical Institute, USA.

Morten Meldal, born 1954 in Denmark. PhD 1986 from Technical University of Denmark, Lyngby, Denmark. Professor at University of Copenhagen, Denmark.

K. Barry Sharpless, born 1941 in Philadelphia, PA, USA. PhD 1968 from Stanford University, CA, USA. W. M. Keck Professor at Scripps Research, La Jolla, CA, USA.

Bioorthogonal chemistry illuminates the cell





Bertozzi used the strain-promoted click reaction to track glycans. They have a green glow in the picture. The cell nucleus is coloured blue. Thanks to the glycans' green glow, Bertozzi was able to follow them in the cell.

Image from *Proc Natl Acad Sci USA* (2007) 104:16793–16797

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