**Nobel Prize in Chemistry 2018**

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Since the first seed of life arose around 3.7 billion years ago, almost every crevice on earth has filled with different organisms. Life spread to hot springs, deep oceans and dry deserts, all because evolution solved a number of chemical problems. The Royal Swedish Academy of Science decided to award the Nobel Prize in Chemistry 2018 with one half to **Frances H. Arnold,** California Institute of Technology, Pasadena, USA “for the directed evolution of enzymes” and the other half jointly to **George P. Smith,** University of Missouri, Columbia, USA and **Sir Gregory P. Winter,** MRC Laboratory of Molecular Biology, Cambridge, UK “for the phage display of peptides and antibodies’’.

They have been inspired by the power of evolution and used the same principles – genetic change and selection – to develop proteins that can solve many medical problems. They have taken control over evolution of proteins and DNA that can be used for purposes that brings the greatest benefit to the humankind. Enzymes produced through directed evolution can also be used to manufacture a range of chemicals, varying from biofuels to pharmaceuticals. Antibodies, evolved using a method called phage display, can combat autoimmune diseases and in some cases cure metastatic cancer. Life’s chemical tool – proteins – have been optimised, changed and renewed, creating incredible diversity.