



THE NOBEL PRIZE IN CHEMISTRY 2015



Photo: Cancer Research UK

Tomas Lindahl

(Born in 1938 in Sweden)

Emeritus group leader at Francis Crick Institute and Emeritus director of Cancer Research UK at Clare Hall Laboratory, Hertfordshire, UK

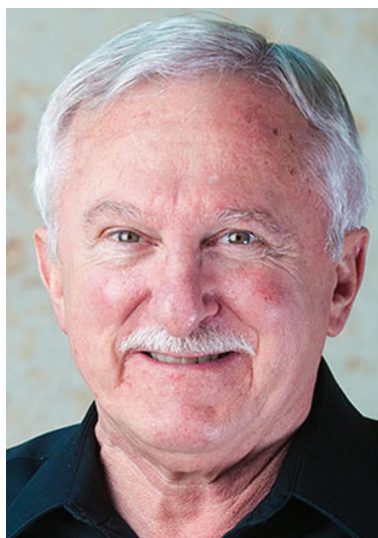


Photo: K. Wolf/AP Images for HHMI

Paul Modrich

(Born in 1946 in the USA)

Investigator at Howard Hughes Medical Institute and James B. Duke Professor of Biochemistry at Duke University School of Medicine, Durham, NC, USA



Photo: M. Englund, UNC-School of Medicine

Aziz Sancar

(Born in 1946 in Turkey)

Sarah Graham Kenan Professor of Biochemistry and Biophysics, University of North Carolina School of Medicine, Chapel Hill, NC, USA

The Nobel Prize in Chemistry 2015 was awarded jointly to **Tomas Lindahl**, **Paul Modrich** and **Aziz Sancar** “for mechanistic studies of DNA repair”.

The Royal Swedish Academy of Sciences in their press release says that the three scientists have mapped, at a molecular level, how cells repair damaged DNA and safeguard the genetic information. Their work has provided fundamental knowledge of how a living cell functions and is, for instance, used for the development of new cancer treatments.

Tomas Lindahl demonstrated that DNA decays at a rate that ought to have made the development of life on Earth impossible. This insight led him to

discover a molecular machinery, base excision repair, which constantly counteracts the collapse of our DNA.

Aziz Sancar has mapped nucleotide excision repair, the mechanism that cells use to repair UV damage to DNA. The cell also utilizes nucleotide excision repair to correct defects caused by mutagenic substances, among other things.

Paul Modrich has demonstrated how the cell corrects errors that occur when DNA is replicated during cell division. This mechanism, mismatch repair, reduces the error frequency during DNA replication by about a thousandfold.

http://www.nobelprize.org/nobel_prizes/chemistry/laureates/2015/