DNA Repair

Faculty of Physics

DNA

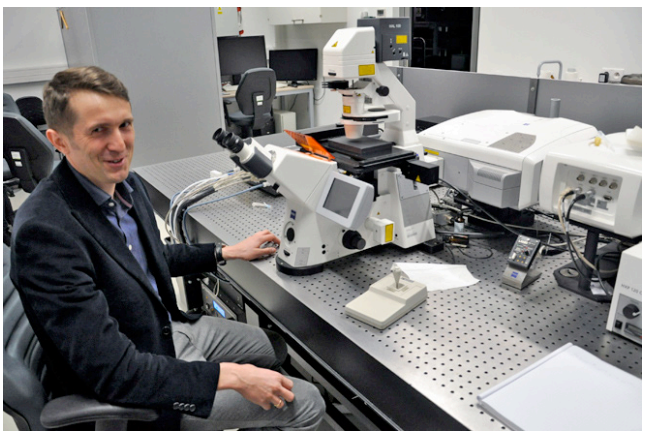
DNA is a material used by living organisms to store genetic information. Four letter code is used to read this information (A,T,C,G). Three consecutive letters encode an aminoacid in newly translated protein. All storage devices (hard discks, CDs) are prone to damage, which might result in lost of all stored information. For the cell that means cell death. Furthermore, DNA damage gives rise to mutations. Mutations are very dangrous and might lead to development of cancer or other genetic diseases.

DNA Repair

To counteract appearance of mutations, cells developed variety of DNA repair pathways. Nearly all possible damage is removed by one of the DNA repair pathways.

What do we do at the Faculty of Physics?

We are using cutting-edge microscopy methods, including super-resolution microscopy to observe individual molecules inside living cells. Literally, we “look” inside the cell, and “see” how enzymes searche for damage sites and how they repair it. We can “see” which partners repair proteins recruit and how fast the perform repair process.



Why do we do it?

Inefficient DNA repair gives rise to multiple genetic diseases. What is more important, cancer originates from cells, which accumulated multiple mutations. Aslo, bacteria (which is a main organism we study), use the mutagenesis process to develop resistance against antibiotics. Understanding the mechanism of DNA repair is therefore of central importance to our understanding of cancer and fighting it.

QR kod do zaktualizowania

If you want to know more, visit:
http://zawlab.home.amu.edu.pl