

Drug-delivery systems with releasing visualization

Project description:

Drug-delivery systems play important role in modern chemotherapy approaches. One of the strategies in treatment of various diseases is based on specific releasing of a drug from a carrier in transformed cell. Visualization of this process is important factor of chemotherapy efficiency evaluation.

The project is focused on development of novel systems for delivery of a drug to cancer cells or bacteria with an ability to track the system and visualize the drug releasing. The systems will be based on drug-fluorescent dye conjugate including a linker specifically cleavable inside a cancer cell or bacteria.

Developing skills:

- organic synthesis including solid-phase synthesis
- fluorescent spectroscopy
- molecular biology
- work managing, data processing, reporting, presentation

Requirements:

- experience in organic synthesis
- basic knowledge of structure elucidation
- basic knowledge in molecular biology
- experience with Scifinder and other sources for literature search
- self-motivation and responsibility for pushing project ahead

Literature:

<https://www.nibib.nih.gov/science-education/science-topics/drug-delivery-systems-getting-drugs-their-targets-controlled-manner>

Dewhirst, M.W.; Secomb, T.W. *Nature Reviews Cancer* **2017** doi:10.1038/nrc.2017.93

Yuan, Y.; Liu, B.; *Chem. Sci* 2017 8(4), 2537-2546. doi: 10.1039/c6sc05421h.