

## Nanostructures and nano-carriers based on DNA origami

### Development status

#### Phase 1

**Basic research.** A pure research based on the already observed and published facts.

### IP protection status

NA

### Partnering strategy

*Co-development, Collaboration*



### Institution

**J. Heyrovský Institute  
of Physical Chemistry**  
J. Heyrovský Institute of  
Physical Chemistry Czech  
Academy of Sciences

### Challenge

DNA origami are nanostructures with dimensions within tens to hundreds of nanometers. Due to their nature as single-chain DNA, they are highly biocompatible, flexible, and easy to modify. This opens up the possibility of their use as carriers for the targeted transport of medicines and active substances within the body for targeted therapy. Thanks to the fact that they have well-defined shapes and sizes, they can be very easily tailored to the needs of the application.

### Description

We dispose of infrastructure and procedures for the preparation and analysis of DNA origami and we offer cooperation on the development of new applications of DNA origami nanostructures. We have the know-how to design and adjust the nanostructures for decided applications. Our research focuses on the stability and functionalization of nanoparticles. We can modify the resulting nanostructures with organometallic molecules, metal nanoparticles or organic molecules, including potential therapeutic or theranostic substances.

### Commercial opportunity

Cooperation is sought to use our know-how in the field of DNA origami for the preparation of carriers for targeted therapy, diagnostics or combined theranostic approaches. The aim of the cooperation is the joint development and commercialization of pharmaceuticals based on DNA origami nanostructures.