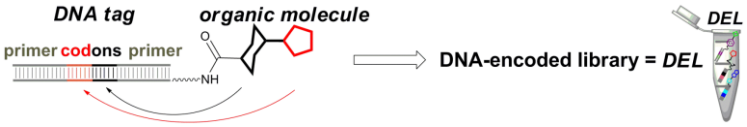
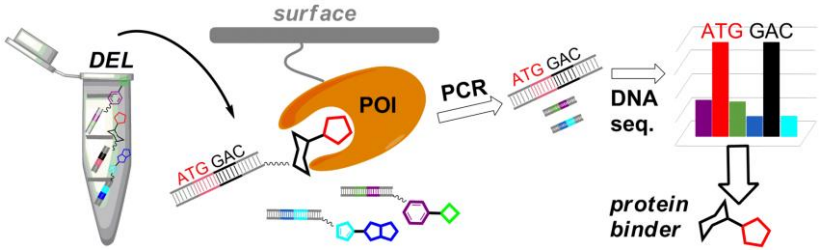
Our research aims to identify small drug-like compounds that bind to disease-relevant proteins, and modulate their function.



To this end, we use genetically tagged small molecule screening libraries. Genetically tagged screening libraries differ from other screening collections in that they can be pooled to complex mixtures. These are called DNA-encoded libraries.



The screening of DNA-encoded libraries rests on the power of *in vitro* selection. All tagged compounds are incubated with a target protein, compounds that bind to this protein are identified by PCR amplification, and DNA sequencing. This library- and assay format allows for screening large compound collections in an academic laboratory.

Our research focusses on methods development for these libraries. We synthesize and screen encoded libraries based on drug scaffolds. We develop novel DNA-tagging strategies to broaden the scope of organic synthesis methods for library synthesis. This allows us to gain access to encoded libraries of hitherto inaccessible compound classes.

We exploit innovative catalysts that leave the genetic code intact to broaden the toolbox of synthesis methods for library synthesis.

Finally, we screen any newly synthesized encoded library on disease-relevant proteins to identify bioactive compounds.