## Project summary

General aims of the project are on the borderline between organic and medicinal chemistry with intentions to discover novel classes of anticancer compounds. Our research is based on selected natural products with known biological potential and on the rationally designed heterocyclic compounds. Explored chemical space is defined by privileged structures depicted by natural products and also by further diversification using principles of *biology inspired organic synthesis* (*BIOS*)and *diversity orientated synthesis* (*DOS*). In addition to developing synthetic routes towards novel heterocyclic compounds and their experimental biological profiling, computational chemistry is used as a tool in designing and studying these compounds in more detail.

## Sažetak projekta

Opšti ciljevi projekta nalaze se u granicama organske i medicinske hemije, a okrenuti su pronalaženju novih heterocikličnih jedinjenja sa potencijalnim antikancerogenim osobinama. Istraživanja su zasnovana na studiji odabranih prirodnih proizvoda sa poznatim biološkim potencijalom, ali i na racionalno dizajniranim heterocikličnim strukturama. Proučavani hemijski prostor definisan je privilegovanim strukturama opisanim prirodnim proizvodima i daljoj strukturnoj diverzifikaciji primenom principa organske sinteze inspirisane biologijom(*biology inspired organic synthesis-BIOS*)i diverzitetom usmerene sinteze (*diversity orientated synthesis-DOS*). Paralelno sa razvojem sinteze novih heterocikličnih jedinjenja, računarske metode primenjuju se u cilju proučavanja fizičko-hemijskih i bioloških osobina novih molekula.

## Selected results/Odabrani rezultati

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