Project C: *Antimicrobial bioactive glass for treatment of traumatic or pathological bone defects*

Participating researchers (PRs): D. S. Brauer (FSU), G. Matziolis (UKJ)

Project description:

Biomaterial-associated infections (BAI) may occur when biomaterial implants are used to treat injured and/or diseased bone. The treatment of these infections is a major clinical challenge.

Innovative biomaterials inhibit microbial adhesion, allowing to win the "race for the surface" of microbes vs. host cells and preventing BAIs. Bioactive glass (BG) granules for example are used in clinical bone regeneration. They enable bone cell adhesion and proliferation and stimulate cell maturation and bone formation. We aim to identify and develop routes to custom-design BG compositions which simultaneously stimulate osteoblasts proliferation and prevent microbial adhesion.

The BG scaffolds will be evaluated by in vitro cultures, including antimicrobial testing using clinical strains.

A materials scientist (glass) and a life scientist (cell biologist) will work as a tandem team with the PRs on this project.

Doctoral researcher candidates apply for: "C: Antimicrobial bioactive glass for treatment of traumatic or pathological bone (Brauer), Materials Science" or **"C: Antimicrobial bioactive glass for treatment of traumatic or pathological bone Life Science (Matziolis), Cell Biology" respectively.**