



Biotechnology Center, Silesian University of Technology in Gliwice:



5000m² (labs, offices, lecture hall), **well-equipped and constantly upgraded**

Active research areas:

Regenerative medicine & biomaterials

Structural biology
& targeted drug design

Bioorganic and
medicinal chemistry

Impact of emerging technologies on ecosystem
& Environmental engineering

Computational biology – modeling of biomedical processes,
bioinformatics-aided therapy assistance





Regenerative medicine & biomaterials:

- biocompatibility testing of biomaterials
- tissue production by reprogramming and transdifferentiation
- biomaterials production by electroextrusion (3D-bio-printing in development)

Structural biology & targeted drug design

- protein engineering – stability, activity and selectivity improvement
- investigation of genetic changes (i.e. SNPs) on enzymatic activity
- scientific software development
- automated high-throughput drug screening; equipment: Monolith, Prometheus

Bioorganic and medicinal chemistry

- improvement of drug bioavailability and selectivity
- development of new drugs and small molecular probes (design, synthesis and biological evaluation)
- scaffold drug design
- structural studies with NMR and mass spectrometry



Impact of emerging technologies on ecosystem & Environmental engineering

- circulation, fate and bio-removal of therapeutics occurred in the ecosystem
- development of water and waste-water purification and management technologies

Computational biology – modeling of biomedical processes, bioinformatics-aided therapy assistance

- modeling of therapeutic response
- data mining from biomedical data bases
- investigation of impact of microRNAs on therapeutic outcome

Key equipment:

on-site computing center “Ziemowit”

Integrated nucleic acid microarray investigation system (Agilent)

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