

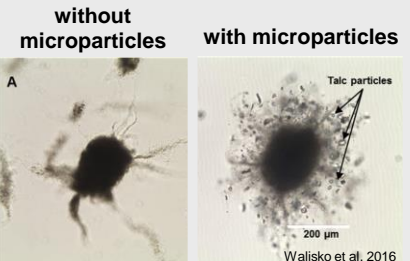
Targeted surface modification of micro particles for the optimization of biotechnical cultivations

Filamentous microorganisms are widely used production systems in the industrial biotechnology. This project investigates the influence of microparticles on the production of an active pharmaceutical ingredient. First experiments with varying micro particle surfaces have shown different product concentrations. The adsorption of particles at the surface of the filamentary cells (hyphae) inside the bioagglomerate (pellet) and therefore resulting changes of the pellet structure seem to be responsible for these effect. Hence different particle surfaces have to be created to investigate the interactions between the particles and the microorganism further.

Bioagglomerate (pellet):

The following topics are actually available:

- Targeted chemical modification of the particle surface
 - Measurement of particle properties like particle size (laser diffraction), surface roughness (AFM), elasticity (nanoindentation), solubility (AAS) and zeta-potential (ultrasonic vibration potential)
 - Cultivations of the filamentous microorganism with the modified particle surfaces (optional)
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- Offered to students of the fields of Biotechnology, Bio-Chemical- and Pharmaceutical-Engineering,
 - Scope and duration of the work will be adjusted to fit the requirement of each kind of thesis
 - Feel free to contact me for a non binding conversation about this or other possible topics



Start:

According to prior agreement

Contact:

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