

**God Mode growth factors – cheat the nature** - Fast forward growth factor optimization for cultivated meat and pharma.

**BACKGROUND** Growth factors are not only essential components of the cell culture medium for pharmacological products as well as for cultivated meat production but are also pharmaceuticals on their own. Still, their application is hampered by their inherent instability: their half-life, ranging from several minutes to hours in aqueous solutions, results in big losses during expression and purification steps, in difficulties in administration as a drug, and in their extremely high prices - they often comprise up to 98% of the cell culture medium costs.

## **TECHNOLOGY**

Up to now, protein engineering attempts have been limited by the need for purification of each single variant prior to bioactivity tests in cell culture, during which product loss or deactivation can easily occur. acib's purification-free approach based on the high throughput monitoring of mammalian cell proliferation does not share this limitation. Skipping purification not only spares time and money, allowing direct assessment of biological activity of the mutant variants, but also enables screening of bigger libraries, greatly facilitating protein engineering of growth factors for higher potency and stability against various stressors - temperature, pH, proteases. Higher stability also means greater expression yields, and competitive prices. This system is compatible with both classic and *de-novo* protein engineering approaches.

**OFFER** The platform needs further 2-3 years for the development, during which the first generation of optimized growth factors will be produced. We are looking for partner(s) to bridge the current gap (financing demand of 300,000 – 500,000 € in total). Potential partners will not only benefit from getting privileged early access to this unique technology, but also through joint IP-ownership.

## **KEYWORDS:**

- disruptive technological innovation
- stable growth factors
- *de-novo* protein design
- protein engineering
- high throughput screening
- cultivated meat
- pharma

## **EXPERTS:**

- Dr. Aleksandra Fuchs,
- Dr. Gustav Oberdorfer,

- Prof. Dr. Helmut Schwab

**AVAILABLE FOR:**

- Joint Research Project
- Contract Research
- Funding

**DEVELOPMENT STATUS:**

Technology Readiness Level: 4-5

**IPR:**

open for new partners

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