

# Master-Thesis



## Development of serum-free growth media for cultivated/in-vitro meat applications

The field of cellular agriculture has seen significant advancements in recent years, particularly in the cultivation of in-vitro meat products. The primary goal of this research area is to produce authentic meat that retains the benefits of animal-derived products while eliminating the need for animal farming. My research focuses on addressing the current challenges in cultivated meat production, aiming to develop a product that is economically competitive with traditionally factory-farmed meat in terms of pricing and availability.

This work includes the development of sustainable, serum-free growth media formulations for muscle cell proliferation and differentiation. A key aspect of this research involves the implementation of recombinant growth factors derived from alternative sources, such as microalgae.

As part of this project, you will primarily work with C2C12 muscle progenitor cells, a widely used model for studying in vitro muscle cell expansion and myogenesis, utilizing both 2D and 3D cell culture systems. The work is predominantly experimental and laboratory-based, involving techniques such as mammalian cell culture and biological assays (e.g., cell viability assays).

**Essential Qualifications** Sterile cell culture techniques, solid understanding of cell biology and genetics

**Beneficial Qualifications** Familiarity with bioanalytical methods such as immunofluorescence staining, antibody-based assays, and quantitative PCR (qPCR).

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