



Together beyond Animal Health

You are interested in developing processes for manufacturing veterinary vaccines, join Ceva for an internship (optional: bachelor/ master thesis).

Ceva Santé Animale (Ceva) is a french animal health company and one of the world's leading players, whose ambition is to ensure the best level of care and well-being for all animals.

CEVA- key facts:

- 6,700 employees**
- Present in 47 countries**
- 30 production sites**
- 15 I&D centres**
- 5th global animal health company**

To support our I&D centre in Dessau-Roßlau which focusses on the development of vaccines and active ingredients for the health and welfare of animals, we are looking for a candidate for an

INTERNSHIP (m/w/d)

Impact of microcarriers on cell growth of adherent cell lines during manufacturing viral vaccines

Saxony-Anhalt / Dessau-Roßlau

Abstract/ task:

Veterinary vaccines conferring protection against viral infections including influenza are commonly produced using adherent kidney cell lines (MDBK). For large-scale production of the viral antigen, the cells are propagated on microcarrier and thereafter infected with the virus in bioreactors (*stirred tank reactors*, STR). Attachment of the cells to the microcarriers followed by a sufficient cell growth crucially affect the infection rate and thus the final antigen yield. Therefore, this study aims to identify optimal process parameters to ensure proper cell propagation. Based on design of experiments (DoE), both microcarriers and process parameters will be screened in small-scale experiments. Thereafter, the identified parameters will be verified by transferring the process to a lab-scale bioreactor (5 L). To study whether the antigen yields are improved upon optimization, infection experiments will be performed in the bioreactor and the production of viral antigen will be analyzed. The results obtained during the study will be the base for further process scale-up to industrial production scale (2000 L).

Methods/ techniques:

- Cell cultivation (cultivation of adherent cell lines, *in vitro* infection)
- Design of Experiments (DoE)
- Screening of microcarriers
- Analysis of cell growth kinetics
- Analysis of metabolite and antigen production
- Transfer/ scale-up of process parameters in lab-scale bioreactors (5 L)
- Controlling/ monitoring of bioreactors

We look forward to receiving your complete application documents stating your earliest possible starting date by email to: bewerbung-group@ceva.com

