

ICB PhD public presentations**DEVELOPMENT OF PERFUSION
CELL CULTURE PROCESSES FOR
THE MANUFACTURING OF
THERAPEUTIC RECOMBINANT
PROTEINS****Jean-Marc Bielser**

ICB Morbidelli Group

Supervisor: Prof. Dr. Massimo Morbidelli

Co-examiners: Prof. Dr. Gonzalo Guillén Gosálbez
and Dr. Jonathan Souquet (Merck)**ETH Hönggerberg, 22/05/2019****HCI J 4, 14.00 h**

Project Summary: This project was focused on the development of perfusion processes for the production of therapeutic proteins in mammalian cells. An extensive literature review was first undertaken to understand how and in which context this technology is raising so much interest in the field. A scale-down model for parameter screening in semi-continuous mode was developed. A study using a number of different clones will be presented to highlight the benefits of this screening methodology. This is then followed by a comparison of three different processes for the production of a conjugated protein. The benefits of perfusion for intensification but also for some quality attributes will be demonstrated. The final part of this presentation will focus on process intensification.

CV. Jean-Marc Bielser is a chemical engineer currently working on his PhD thesis on perfusion cell culture at Merck Serono SA in Corsier-sur-Vevey (Switzerland) under the supervision of Professor Morbidelli. He obtained his bachelor of Science in Chemistry and Chemical Engineering in 2009 at EPFL. He obtained his master in Chemical Engineering and Biotechnology in 2012, also from EPFL. Prior to the PhD program, Jean-Marc worked 3 years for Merck Serono SA as a process development engineer.