



# Upstream Tour 2013

September – October

## Technical Presentation Abstracts

### 1. Upstream strategies for modern bioprocessing operations

Growth in emerging regions such as Latin America and Asia, novel biosimilar opportunities, and continued cost pressure contribute to an increased global competition. A good understanding of the current situation is beneficial to maintain a competitive edge in biomanufacturing. This presentation will provide a high-level perspective of recent upstream biopharmaceutical developments, and discuss future opportunities and challenges.

### 2. Cultivation strategies for achieving high-performing fed-batch processes

Process optimization to maximize the volumetric productivity remains a key upstream objective for the majority of biopharmaceutical companies. This presentation will outline cultivation strategies for achieving high-performing fed-batch processes for Chinese hamster ovary (CHO) cell lines. Bioreactor conditions and real-time data, which was generated to optimize media feed and selection, will be presented.

### 3. Process intensification: why, when, and how to

Traditionally, cell retention has primarily been used in perfusion processes when fast separation of the product from the culture has been required. Emerging strategies involve perfusion-like settings also for other applications, such as monoclonal antibody production, seed-train, and cryopreservation. This talk will present various process alternatives that involve perfusion under single-use settings and provide examples of strategies for cell retention using tangential filtration.

### 4. Novel tools and solutions for flexible and reliable upstream operations

GE Healthcare Life Sciences BioProcess™ capabilities span from small-scale cell culturing to the final steps in protein purification and formulation. This talk will include examples of our upstream offering, and how our solutions and services can help you to a more productive manufacturing process, in a shorter time frame. Solutions for process development, production with suspension and adherent cells, and harvest, will be presented.

### 5. Perspectives on single-use: opportunities for the vaccine manufacturer

The vaccine industry is undergoing a shift, where centralized production capacities transform towards more flexible business models. The models can involve smaller local production plants for in-country or regional purposes, good examples of settings where single-use technology can be beneficial. In this presentation, disposable vaccine processes and two case studies will be discussed, with upstream processes in rocking and stirred-tank bioreactor formats.

# Technical Demonstration

## 1. ReadyToProcess WAVE Bioreactor 25 with UNICORN software

Enhanced rocking bioreactor with advanced sensors and intelligent control strategies

- Intelligent and accurate control of culture conditions
- Easy to use with preconfigured culture parameters and intuitive software
- Ergonomic design for convenient handling

## 2. XDR-10 bioreactor

Linearly scalable bioreactor up to 2000L working volume in the same single-use platform

- Working volume from 4.5L to 10L
- Stand-alone and dual configuration
- Designed for scale-up and scale-down study

## 3. ReadyCircuit bags and tubing assemblies

Disposable aseptic solutions for bags and tubing with ReadyMate connection

- Configurable sterile fluid processing solutions
- Quickly and easy disposable assemblies
- Reducing non-value added steps in the process

