

# Viral vector production for cell and gene therapy

Process development and manufacturing solutions



# Helping to achieve viable commercial processes from upstream to downstream

With recent market launches of novel cell and gene therapies, focus is shifting to securing critical production components and improving patient access. Leveraging our pedigree in the monoclonal antibody and vaccine space, we bring you flexible, end-to-end solutions for plasmid, lentivirus, and adeno-associated virus (AAV) production. Our offerings go beyond reagents and equipment, to include GMP-ready suites, facilities, and enabling services.



# UPSTREAM

# DOWNSTREAM

## Plasmid production

### Fermentation

- Xcellerex™ XDR MO single-use microbial fermentor system

### Chromatography

- ÄKTA™ chromatography systems
- Resins and prepacked columns, including PlasmidSelect Xtra
- HyClone™ buffers and process liquids

## Transfection

### Transfection enhancement

- HyClone media and additives that augment effects of transfection reagent

## Expansion/culture

### Cell culture

- HyClone cell culture media, sera, and supplements
- ReadyToProcess WAVE™ bioreactors/Xuri™ Cell Expansion System W25
- Xcellerex XDR single-use stirred-tank bioreactor system
- Microcarriers, including single-use Cytodex™ Gamma

### Mixing

- Xcellerex single-use mixing systems

### Filtration

- ÄKTA filtration systems and normal flow filters, including single-use

## Harvest

### Filtration

- ÄKTA filtration systems and tangential flow filters (TFF), including single-use

## Concentration and purification

### Chromatography

- ÄKTA chromatography systems
- Resins and prepacked columns
  - Affinity
  - Ion exchange
  - Multimodal

### Membrane purification

- Single-use membranes

### Mixing

- Xcellerex single-use mixing systems

### Filtration

- ÄKTA filtration systems, normal and tangential flow filters

## Titering and quality control

### Nucleic acid analysis

- Reagents for isolation and purification

### Particle concentration

- Biacore™ surface plasmon resonance systems, chips, and reagents

### Cell analysis

- Cell analysis systems for viability checks and imaging

## Fill and finish, cryopreservation

### Freezing

- VIA Freeze™ controlled-rate freezing platform
- HyClone cryopreservation media

### Thawing

- VIA Thaw™ dry automated thawers



# Suites, facilities, and services across the globe

Innovative, flexible solutions that support manufacturing productivity

## FlexFactory™ manufacturing suite

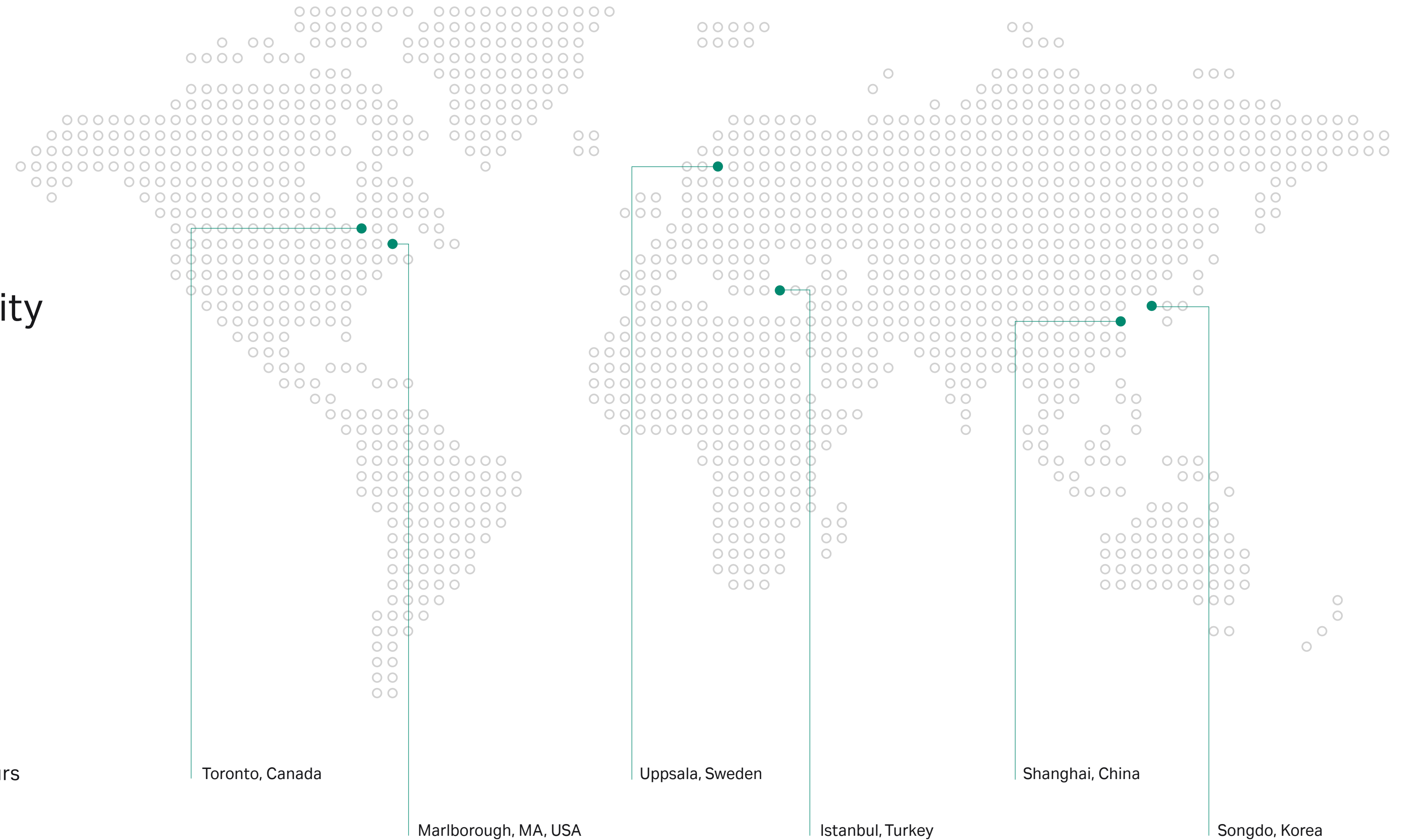
Flexible, single-use processing line

## KUBio™ manufacturing facility

Off-the-shelf, modular facility that expands as your needs change – BSL-1 or BSL-2

## Fast Trak™ services across upstream and downstream

- Process development
- Biomanufacturing
- Custom services, including spent media analysis
- Comprehensive training around the world – at our site or yours



● Key sites for Fast Trak services

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