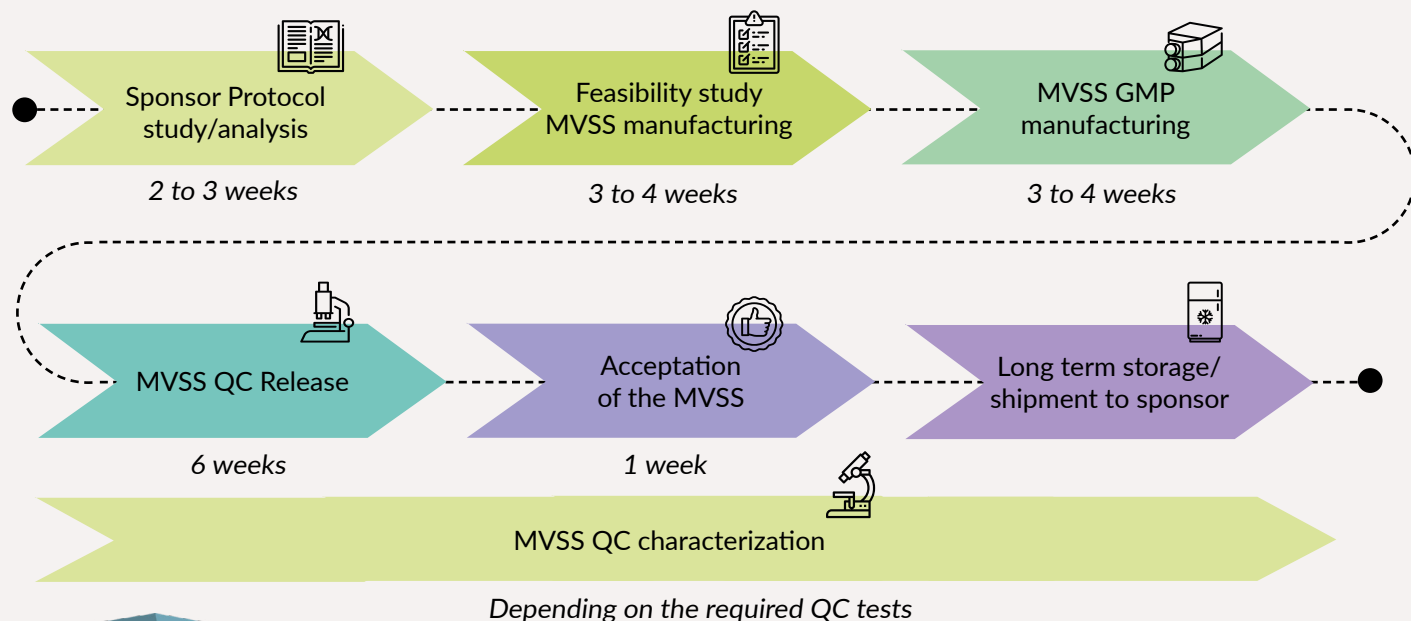


## A COMPLETE OFFER FOR THE GENERATION AND CHARACTERIZATION OF YOUR VIRUS SEED STOCK

Clean Cells provides a wide range of services, based on a strong expertise, to **manufacture, characterize and store Master and Working Virus Seed Stocks**. In **GMP and non-GMP environments**, we have developed a solid know-how in the generation of viral strains, for multiple purposes.

The establishment of a GMP-grade Master Virus Seed Stock (MVSS) and Working Virus Seed Stock (WVSS) is the first step of the GMP manufacturing of **viral vaccines, viral vectors and oncolytic viruses**. With an **experience of more than 20 years**, Clean Cells presents itself as a **one-stop-shop solution** for the production and characterization of virus seeds destined for human or veterinary health that allows to propose optimize timelines for ready to use GMP virus seed stocks.

### cGMP MVSS GENERATION WORKFLOW



### OUR TRACK RECORD

More than 100 virus banks:

- Vaccinia
- Enterovirus
- Coxsackievirus
- EBV
- HIV
- Dengue
- Rubella
- Measles
- Mumps
- Adenovirus
- HSV
- Influenza
- Zika...

## OUR PROCESS



- GMP manufacturing according to Manufacturing files (process & specification, Master Batch Record, campaign report, batch certificate)
- BSL-2 environment (negative pressure), qualified area, grade A in grade C dedicated unit
- Environmental controls at the defined critical steps
- Equipment monitored continuously (temperature, CO<sub>2</sub> level, humidity)

QUALITY  
PROJECT MANAGEMENT  
QUALIFIED TEAM

## OUR TECHNOLOGIES



Suitable solutions for adherent cells:

- Flasks
- Multilayers

Clean Cells offers clarification of these stocks.

Our sister-company Naobios can support with the purification of viral stocks as well as with the manufacturing of drug substances & drug products. [www.naobios.com](http://www.naobios.com)

Titration can be performed by Clean Cells following tech transfer or by sponsor.

FLEXIBILITY  
INNOVATION

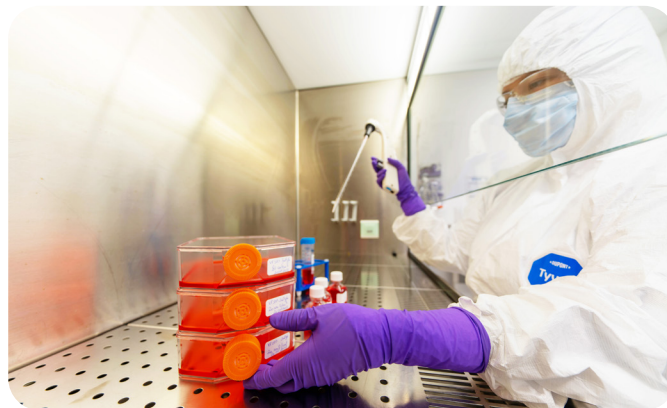
## LONG TERM STORAGE OFFER

AT - 80°C



- Qualified freezers
- Periodic storage report
- Continuous temperature monitoring
- Externalized alarm system
- Secured storage
- Backup freezers

TRACEABILITY  
SECURITY



## VIRUS SEED CHARACTERIZATION SERVICES



According to Ph. Eur., USP, ICHQ5A, and based on our partner's risks analysis:

- Sterility
- Mycoplasma (by qPCR and culture approaches)
- Mycobacteria (by qPCR and culture approaches)
- After evaluation of neutralizing antibodies' activity:
  - Non-specific adventitious agent detection (in-vivo, in-vitro)
- Specific adventitious agent detection (human, bovine, porcine and other animals)
- Retrovirus (electron microscopy, infection assays, qPERT)
- Titration (TCID50, PFU, qPCR, dPCR)
- Gene copy number
- Identity (sequencing - NGS, qPCR)

END-TO-END SOLUTION

Clean Cells can support you with the generation of **GMP cell banks** and **associated quality control** as a **one stop shop solution** for your projects

contact@clean-cells.com  
**clean-cells.com**

**clean cells**  
SOLUTION FOR BIOLOGICS