

# Virus Purification Workflow – Centrifugation Highlights

70 YEARS OF CENTRIFUGATION

Centrifuge to harvest cells containing virus



Allegra X-15R

- 200 xg 15min

Researcher can separate floating virus from cell containing virus and use both for downstream purification

Cell lysis and treatment



Avanti JXN-26

Centrifuge to clear cell debris

- 3000 xg 15min
- keep supernatant

High Performance / High Capacity centrifuges have the volume and efficiency to separate viruses from debris

Polyethylene glycol (PEG) precipitation

- 5000 xg 2min
- keep pellet

Centrifuge to further clarify viral mixture

- 5000 xg 10min
- keep supernatant

Density gradients to isolate viral Loads (active virus)

- 226,000 xg
- -1.5 hours (step gradient)
- 226,000 xg
- -20hours (continuous gradient)

Ultracentrifugation is efficient as it can uniquely purify fully loaded virus from incomplete virus.

Virus characterization

- Biophysical Experiments with AUC

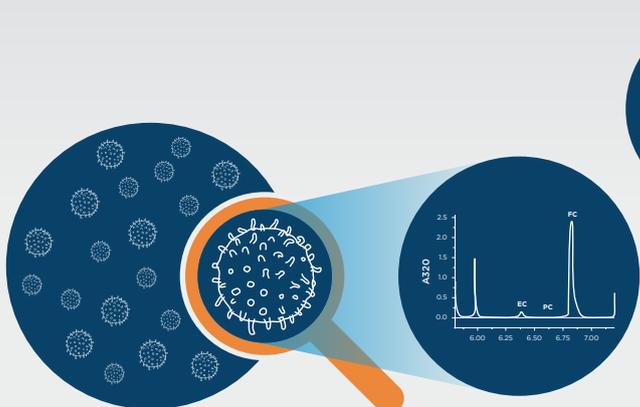
Analytical Ultracentrifugation can characterize quality and purity of virus particle



Optima XPN 100

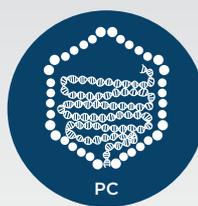


Optima AUC



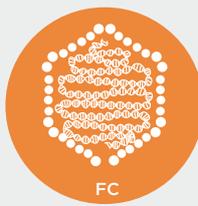
Empty Procapsid

EC



PC

Partial Capsid



FC

Full Capsid

The Ultimate goal!

