

## Fermentation (Growing the Bacteria)

Integral Materials:  
Media, Antibiotic, Antifoam

Integral Equipment:  
Fermenators, Shakers,  
Centrifuges

Consumables:  
Fermentation Bag, Transfer  
Bags, Harvest Liners

Final Material is the  
bacterial paste containing  
the pDNA from the harvest  
after centrifugation that is  
taken on to Lysis

## Lysis/AEX (Breaking the Bacteria to Extract the pDNA)

Integral Materials:  
Resin, Filters, Buffer

Integral Equipment:  
Chromatography Columns,  
AKTA Skids, Pumps,  
Conductivity Meter

Consumables:  
Collection Bags, tubing  
assemblies, mixing Bags

Final material is pDNA  
suspended in high-salt  
solution

## Interim TFF (Buffer Exchange of Impure pDNA)

Integral Materials:  
TFF filters, Buffers

Integral Equipment:  
AKTA Skid, Pumps, Scales

Consumables:  
TFF tubing assemblies or  
tubing, sensors, and sterile  
bags

Final material is pDNA  
suspended in low salt  
solution

## Polishing Chromatography (Purification of pDNA)

Integral Materials:  
Resin, Buffer

Integral Equipment:  
Chromatography Columns,  
AKTA Skids, Pumps,  
Conductivity Meter

Consumables:  
Collection Bags, tubing  
assemblies, Tubing

Final material is purified  
pDNA suspended in high-  
salt solution

## Final TFF (Purified pDNA in Final Solution)

Integral Materials:  
TFF filters, Buffers

Integral Equipment:  
AKTA Skid, Pumps, Scales

Consumables:  
TFF tubing assemblies or  
tubing, sensors, and sterile  
bags

Final material is purified  
pDNA suspended in low-  
salt solution

## Dispensing (pDNA Solution in Final Vials)

Integral Materials  
Final Vials (Variety of  
sterile containers from  
glass vials, to cryovials to  
biotainers), Sterile Filters

Integral Equipment:  
Pumps, Repeater Pipette,  
ISO 5 Biological Safety  
Cabinet

Consumables  
Pipettes, Syringes, tubing  
assemblies,

Final Vials are transported  
to Client