FIG 1

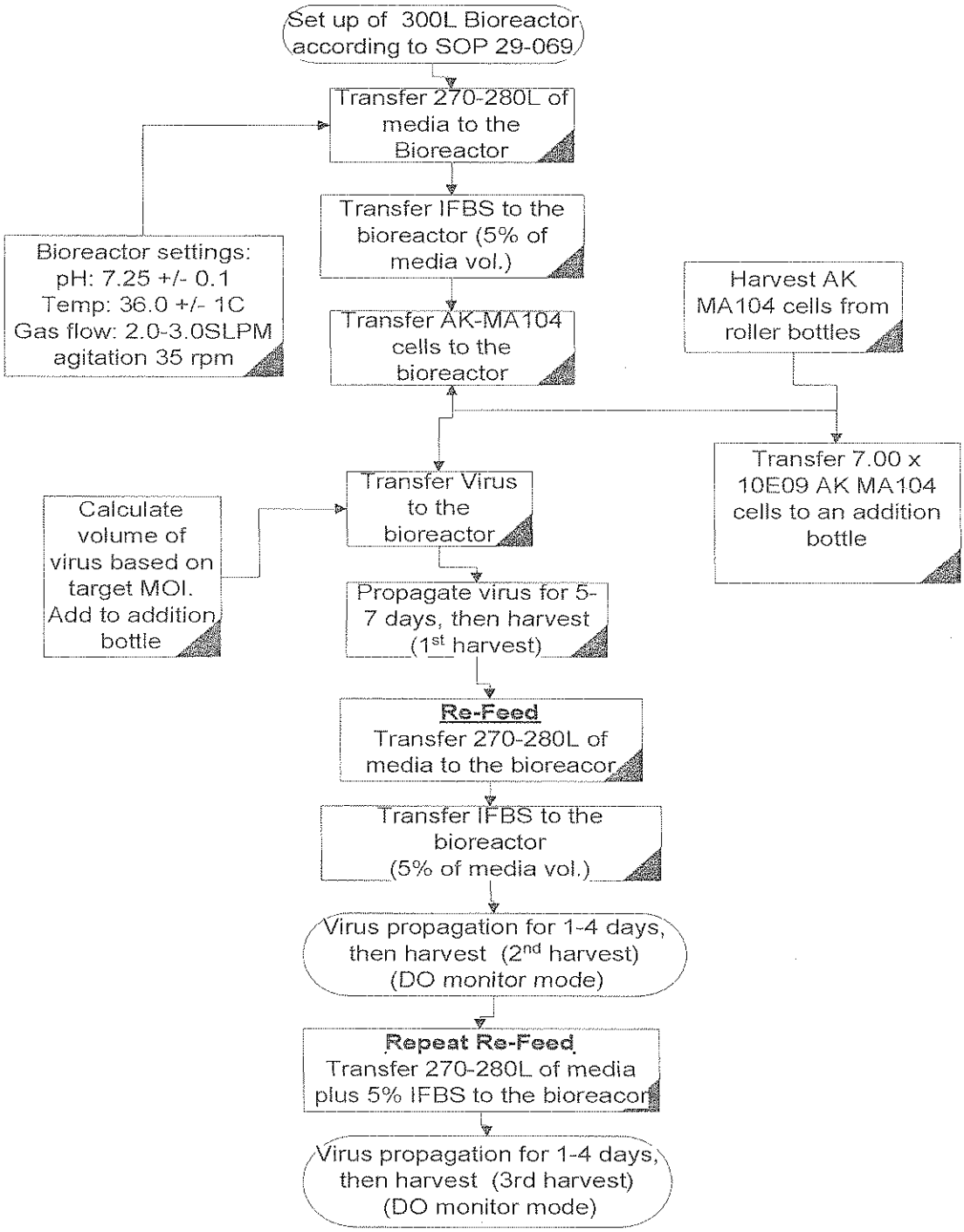

Set up of 300L Bioreactor according to SOP 29-069
Transfer 270-280L of media to the Bioreactor
Transfer IFBS to the bioreactor (5% of media vol.)
Transfer AK-MA104 cells to the bioreactor
Bioreactor settings: pH: 7.25 +/- 0.1 Temp: 36.0 +/- 1C Gas flow: 2.0-3.0SLPM agitation 35 rpm
Harvest AK MA104 cells from roller bottles
Transfer 7.00 x 10E09 AK MA104 cells to an addition bottle
Transfer Virus to the bioreactor
Calculate volume of virus based on target MOI. Add to addition bottle
Propagate virus for 5-7 days, then harvest (1st harvest)
Re-Feed
Transfer 270-280L of media to the bioreacor
Transfer IFBS to the bioreactor (5% of media vol.)
Virus propagation for 1-4 days, then harvest (2nd harvest) (DO monitor mode)
Repeat Re-Feed
Transfer 270-280L of media plus 5% IFBS to the bioreacor
Virus propagation for 1-4 days, then harvest (3rd harvest) (DO monitor mode)

FIG 2

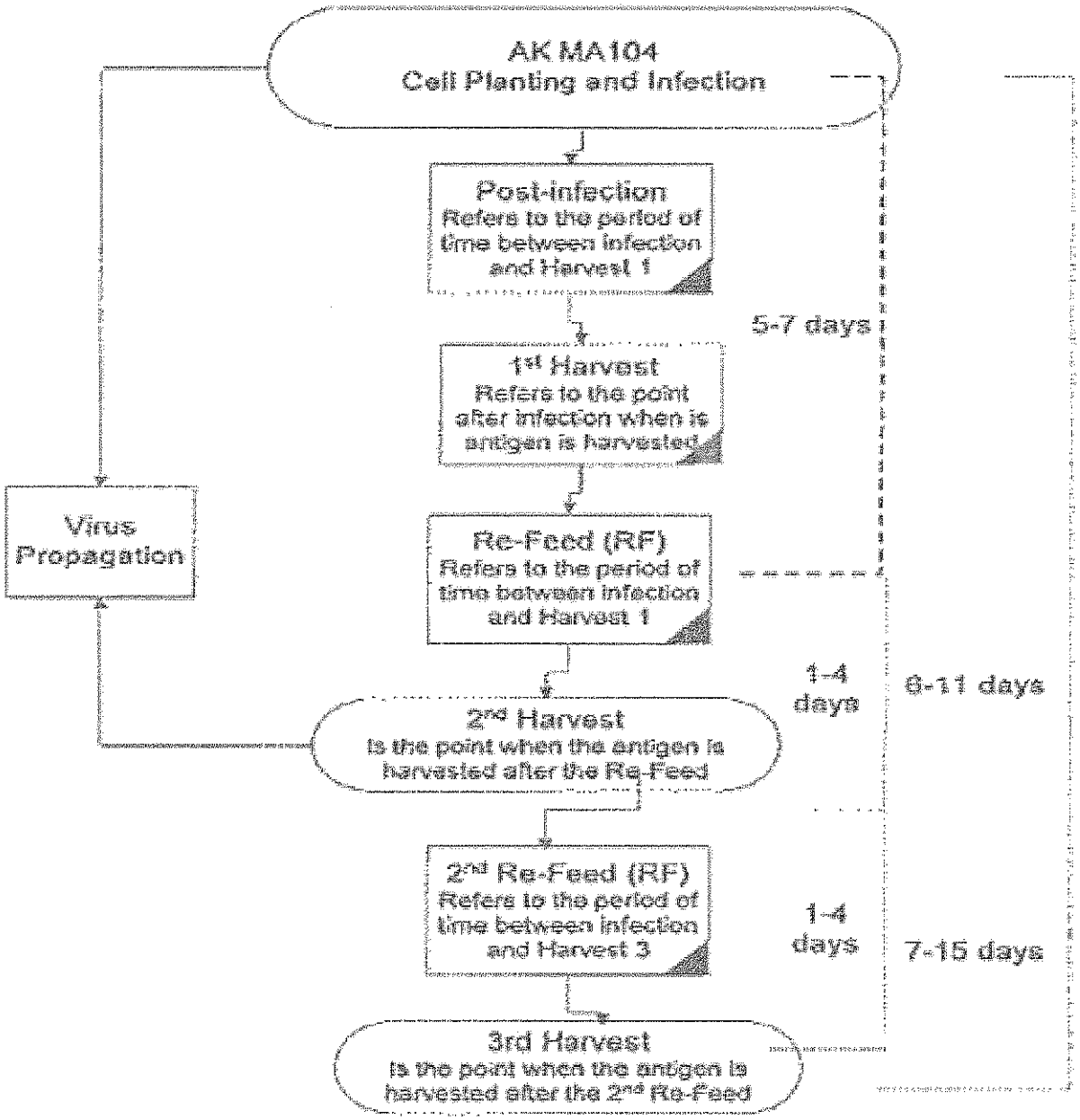

AK MA104
Cell Planting and Infection
Post-infection
Refers to the period of time between infection and Harvest 1
5-7 days
1st Harvest
Refers to the point after infection when is antigen is harvested
Virus Propagation
Re-Feed (RF)
Refers to the period of time between infection and Harvest 1
1-4 days
6-11 days
2nd Harvest
Is the point when the antigen is harvested after the Re-Feed
2nd Re-Feed (RF)
Refers to the period of time between infection and Harvest 3
1-4 days
7-15 days
3rd Harvest
Is the point when the antigen is harvested after the 2nd Re-Feed

FIG 3

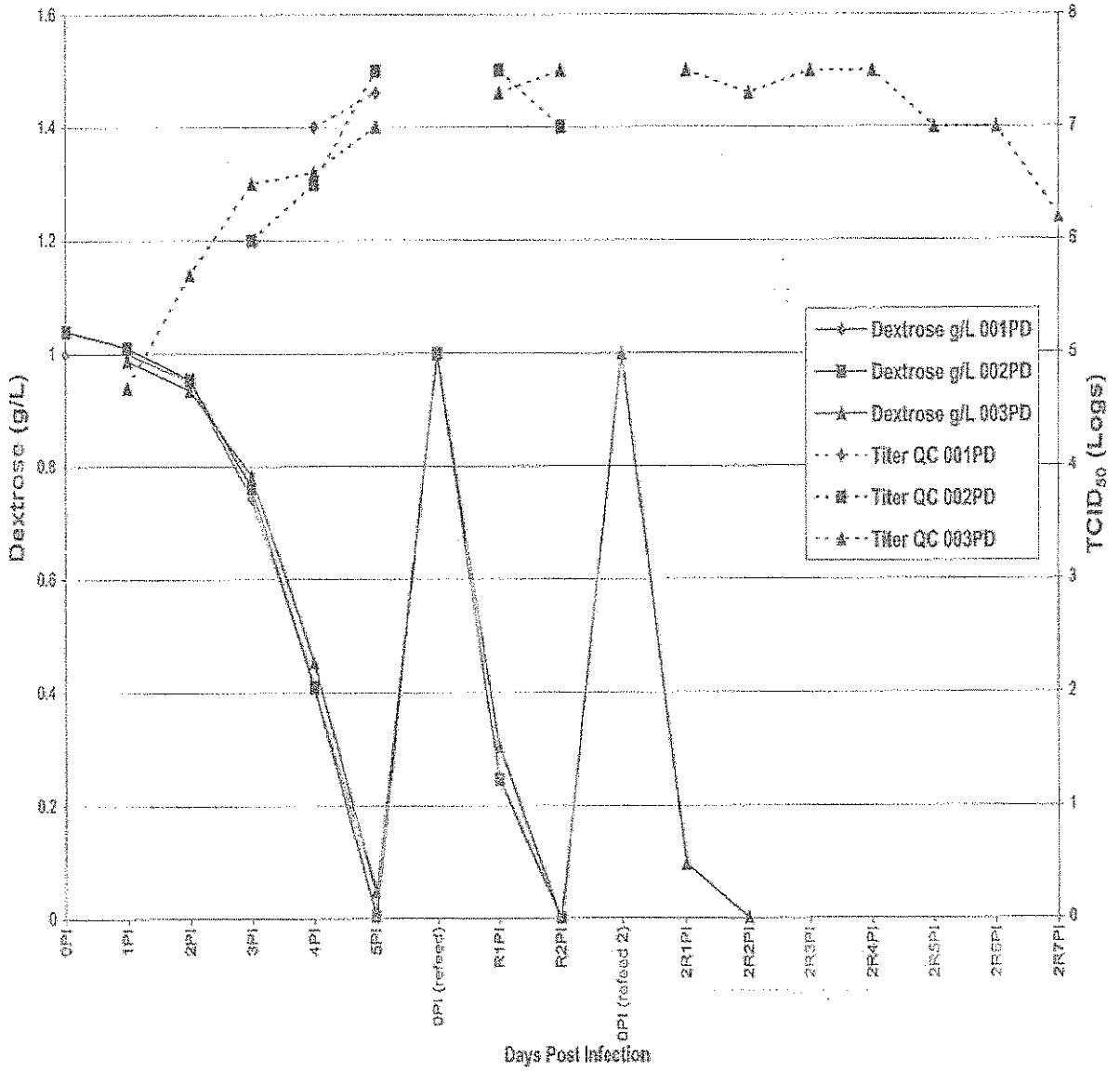

Dextrose (g/L)
TCID50 (Logs)
Days Post Infection
Dextrose g/L 001PD
Dextrose g/L 002PD
Dextrose g/L 003PD
Titer QC 001PD
Titer QC 002PD
Titer QC 003PD
0PI
1PI
2PI
3PI
4PI
5PI
0PI (refeed)
R1PI
R2PI
0PI (refeed 2)
2R1PI
2R2PI
2R3PI
2R4PI
2R5PI
2R6PI
2R7PI

FIG 4

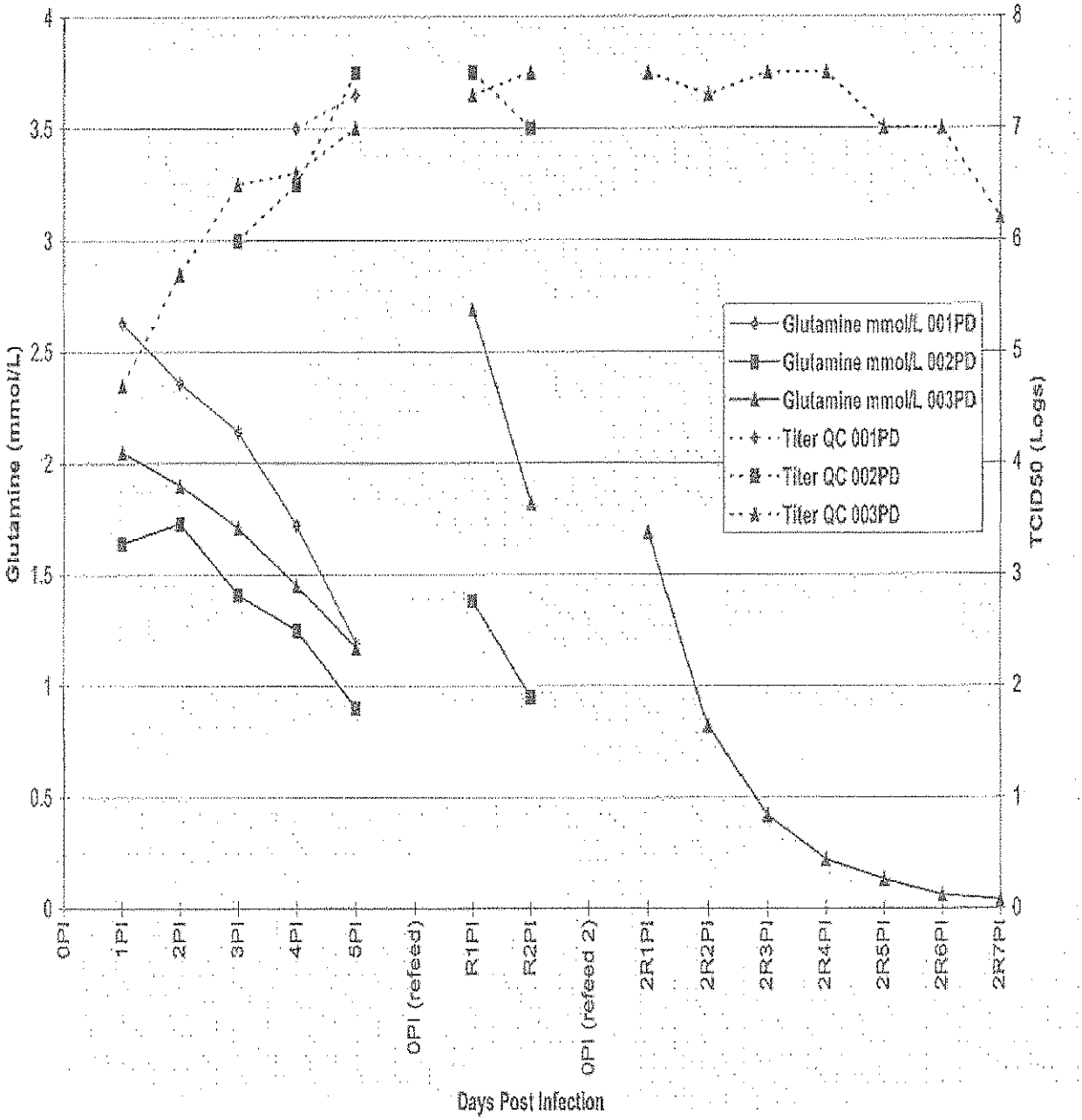

Glutamine (mmol/L)
TCID50 (Logs)
Days Post Infection
Glutamine mmol/L 001PD
Glutamine mmol/L 002PD
Glutamine mmol/L 003PD
Titer QC 001PD
Titer QC 002PD
Titer QC 003PD
0PI
1PI
2PI
3PI
4PI
5PI
0PI (refeed)
R1PI
R2PI
0PI (refeed 2)
2R1PI
2R2PI
2R3PI
2R4PI
2R5PI
2R6PI
2R7PI

FIG 5

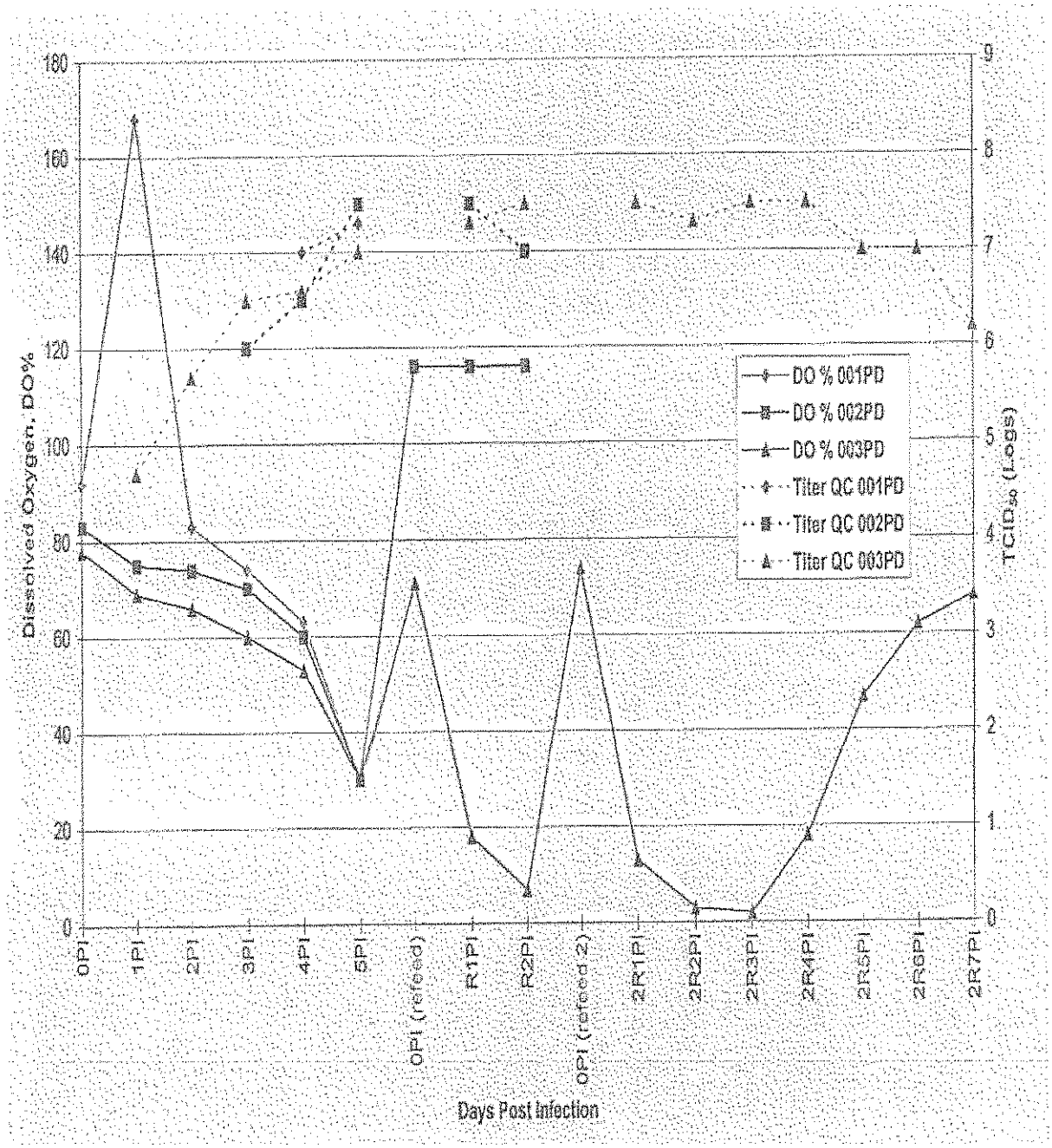
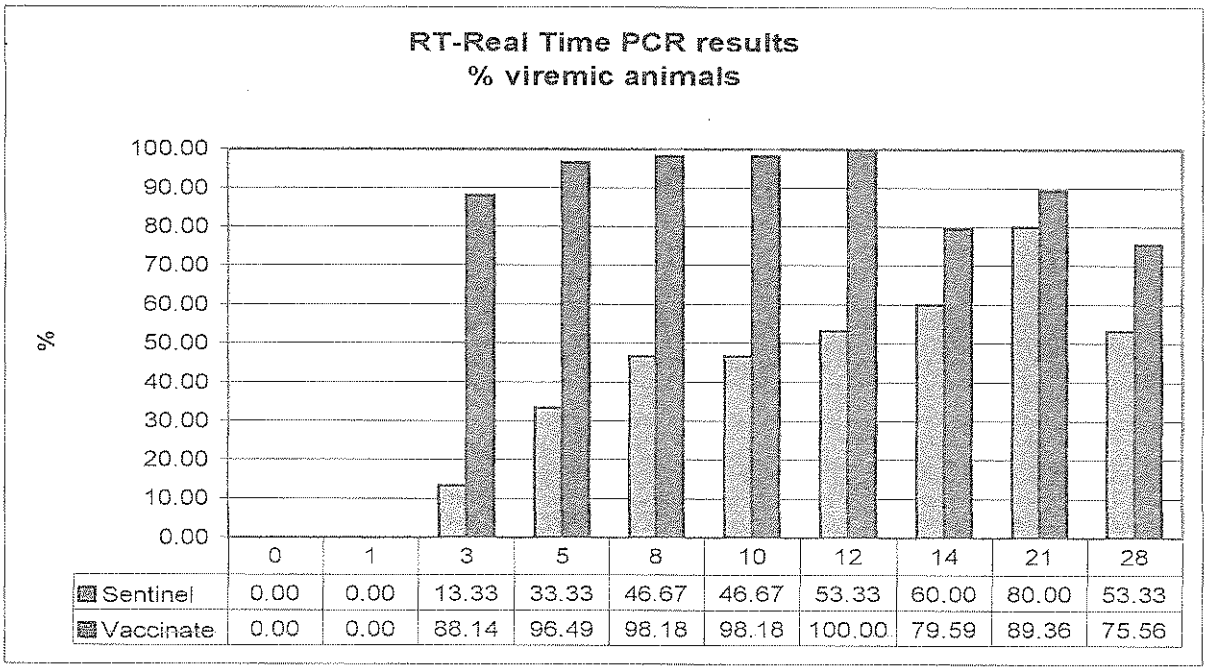

Dissolved Oxygen, DO%
TCID50 (Logs)
Days Post Infection
DO % 001PD
DO % 002PD
DO % 003PD
Titer QC 001PD
Titer QC 002PD
Titer QC 003PD
0PI
1PI
2PI
3PI
4PI
5PI
0PI (refeed)
R1PI
R2PI
0PI (refeed 2)
2R1PI
2R2PI
2R3PI
2R4PI
2R5PI
2R6PI
2R7PI

FIG 6



	0	1	3	5	8	10	12	14	21	28
Sentinel	0.00	0.00	13.33	33.33	46.67	46.67	53.33	60.00	80.00	53.33
Vaccinate	0.00	0.00	88.14	96.49	98.18	98.18	100.00	79.59	89.36	75.56

FIG 7

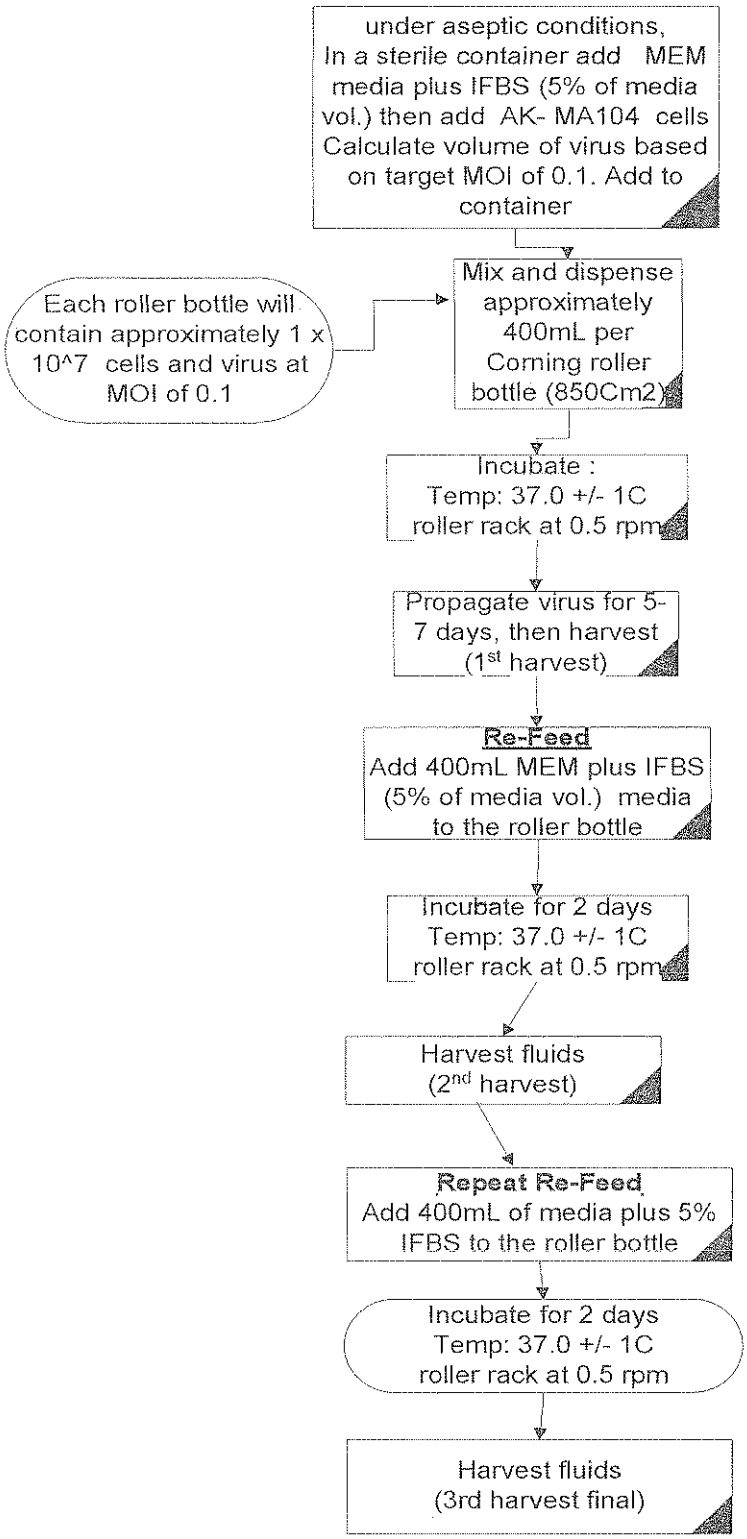
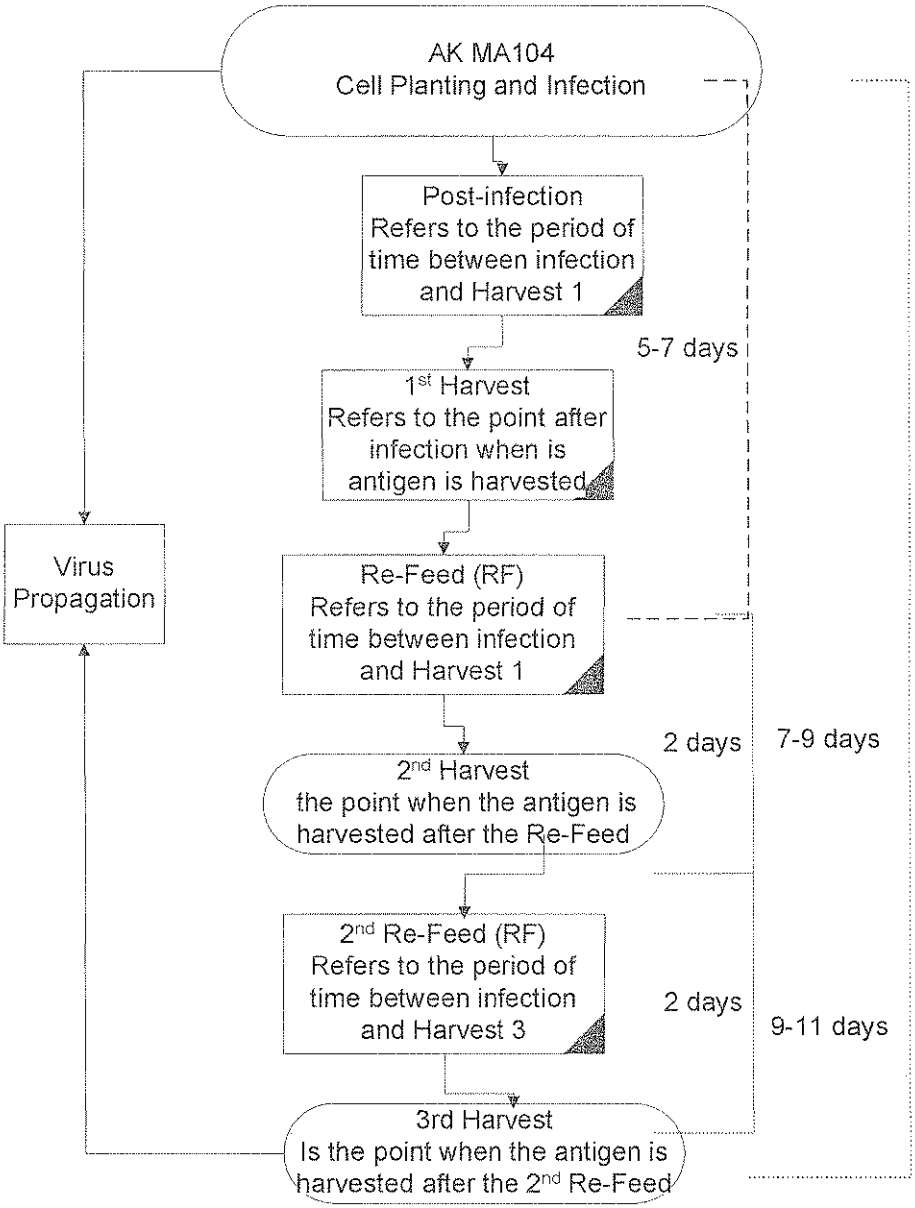

under aseptic conditions, In a sterile container add MEM media plus IFBS (5% of media vol.) then add AK- MA104 cells Calculate volume of virus based on target MOI of 0.1. Add to container
Each roller bottle will contain approximately 1 x 10^7 cells and virus at MOI of 0.1
Mix and dispense approximately 400mL per Corning roller bottle (850Cm2)
Incubate : Temp: 37.0 +/- 1C roller rack at 0.5 rpm
Propagate virus for 5-7 days, then harvest (1st harvest)
Re-Feed
Add 400mL MEM plus IFBS (5% of media vol.) media to the roller bottle
Incubate for 2 days Temp: 37.0 +/- 1C roller rack at 0.5 rpm
Harvest fluids (2nd harvest)
Repeat Re-Feed
Add 400mL of media plus 5% IFBS to the roller bottle
Incubate for 2 days Temp: 37.0 +/- 1C roller rack at 0.5 rpm
Harvest fluids (3rd harvest final)

FIG 8


AK MA104
Cell Planting and Infection
Post-infection
Refers to the period of time between infection and Harvest 1
5-7 days
1st Harvest
Refers to the point after infection when is antigen is harvested
Virus Propagation
Re-Feed (RF)
Refers to the period of time between infection and Harvest 1
2 days
7-9 days
2nd Harvest
the point when the antigen is harvested after the Re-Feed
2nd Re-Feed (RF)
Refers to the period of time between infection and Harvest 3
2 days
9-11 days
3rd Harvest
Is the point when the antigen is harvested after the 2nd Re-Feed