Figure 1

Process 2A: about 22 days from Steps A - E

1. **STEP A**

Obtain Patient Tumor Sample

2. **STEP B**

Fragmentation and First Expansion

3 days to 14 days

3. **STEP C**

First Expansion to Second Expansion Transition

No Storage and Closed System

4. **STEP D**

Second Expansion

IL-2, OKT-3, and antigen-presenting feeder cells

Closed System

5. **STEP E**

Harvest TILS from Step D

Closed System

6. **STEP F**

Final Formulation and/or Transfer to Infusion Bag

(optionally cryopreserve)

Figure 2A

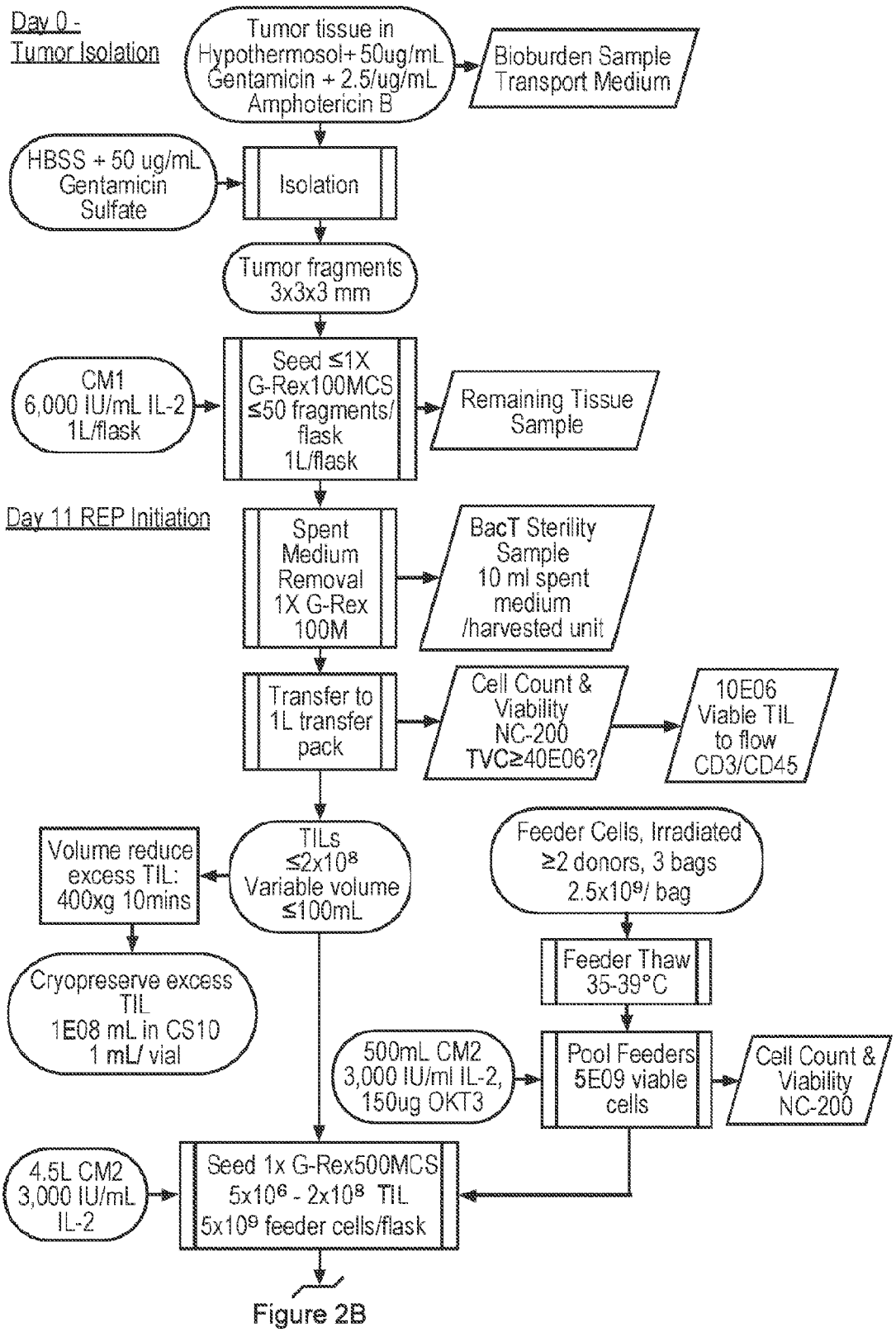


Figure 2B

Figure 2B

Figure 2A

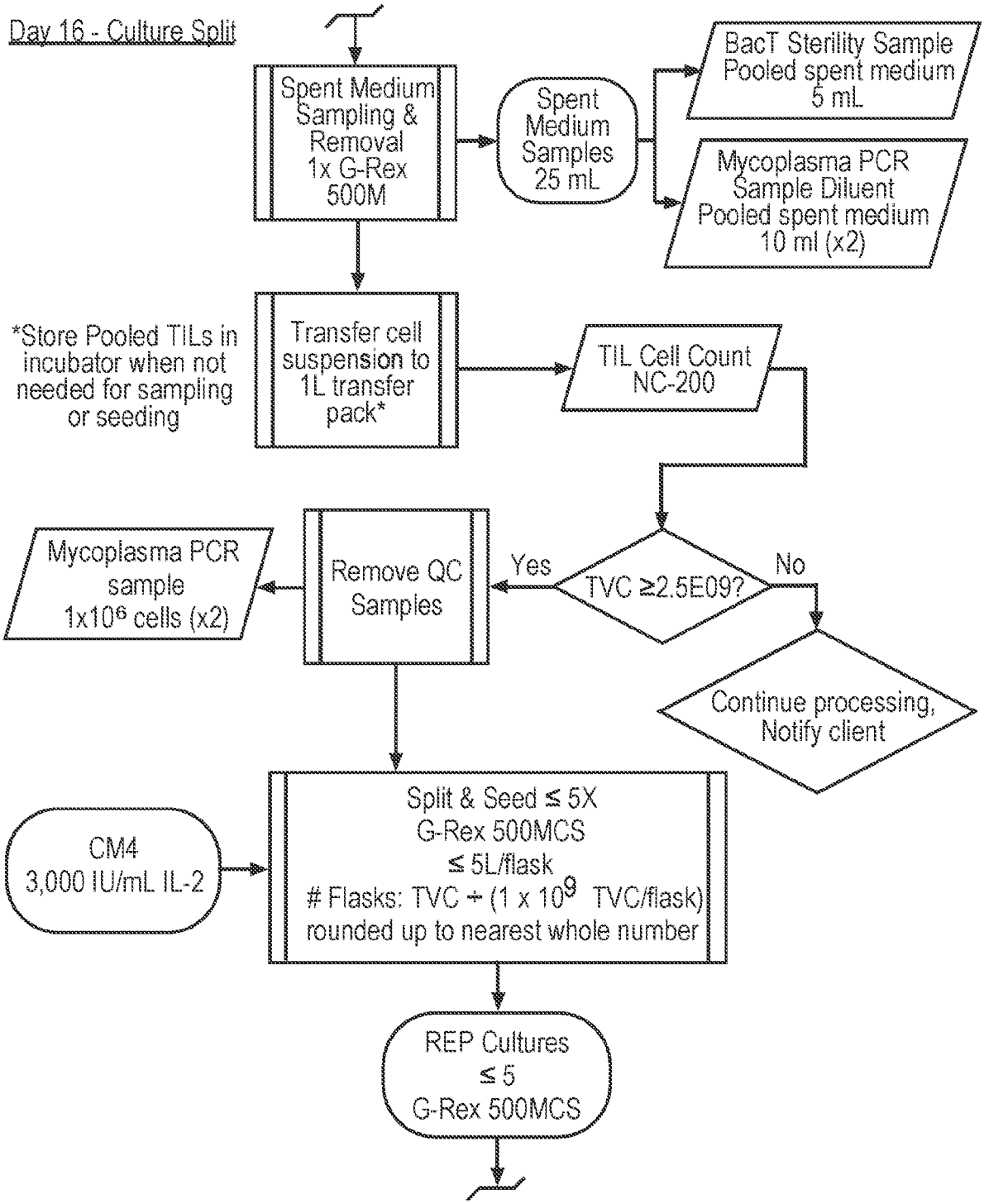
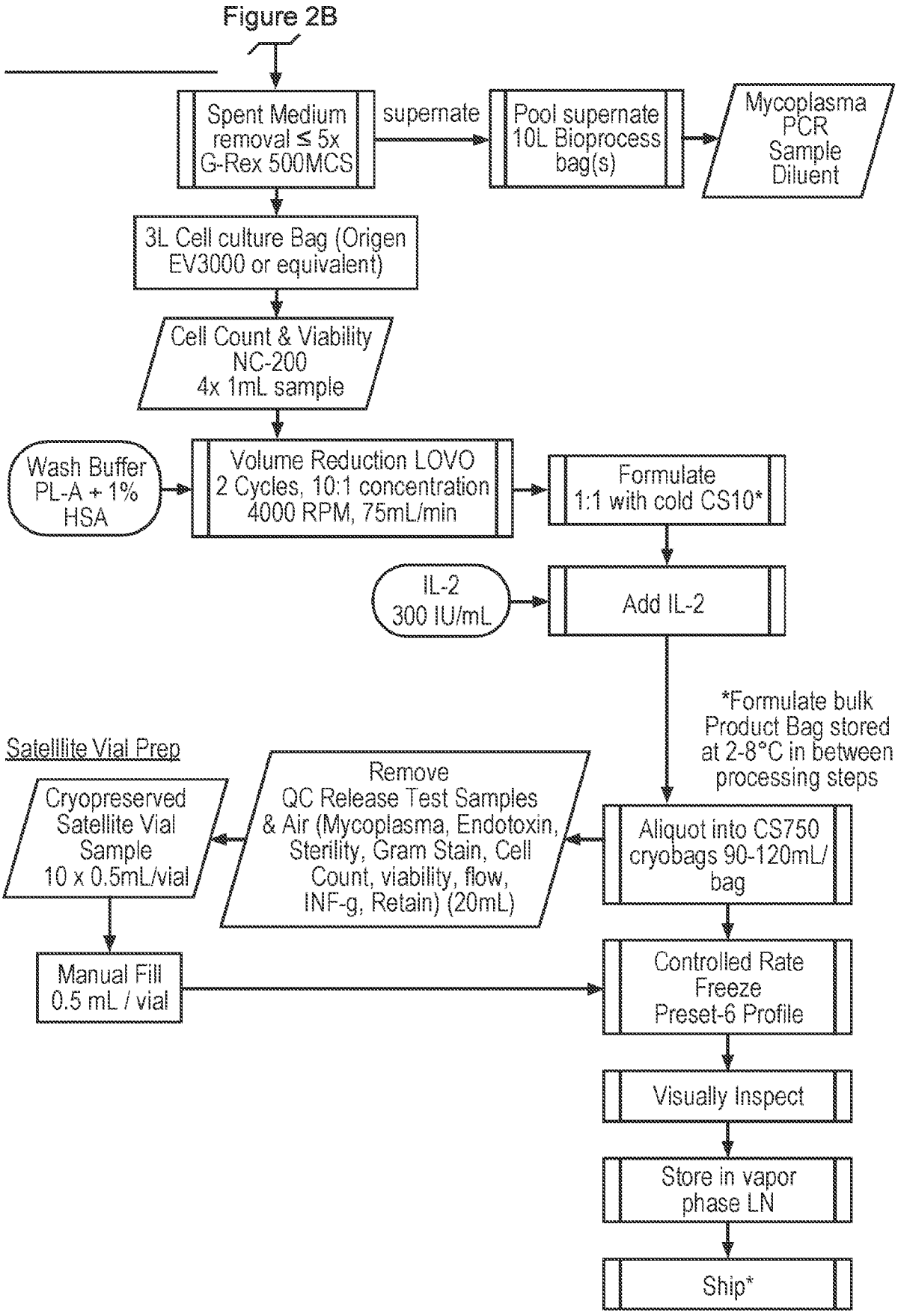


Figure 2C

Figure 2C


Figure 2B
Spent Medium removal ≤ 5x G-Rex 500MCS
supernate
Pool supernate 10L Bioprocess bag(s)
Mycoplasma PCR Sample Diluent
3L Cell culture Bag (Origen EV3000 or equivalent)
Cell Count & Viability NC-200 4x 1mL sample
Wash Buffer PL-A + 1% HSA
Volume Reduction LOVO 2 Cycles, 10:1 concentration 4000 RPM, 75mL/min
Formulate 1:1 with cold CS10*
IL-2 300 IU/mL
Add IL-2
*Formulate bulk Product Bag stored at 2-8°C in between processing steps
Satellite Vial Prep
Cryopreserved Satellite Vial Sample 10 x 0.5mL/vial
Remove QC Release Test Samples & Air (Mycoplasma, Endotoxin, Sterility, Gram Stain, Cell Count, viability, flow, INF-g, Retain) (20mL)
Aliquot into CS750 cryobags 90-120mL/ bag
Manual Fill 0.5 mL / vial
Controlled Rate Freeze Preset-6 Profile
Visually Inspect
Store in vapor phase LN
Ship*

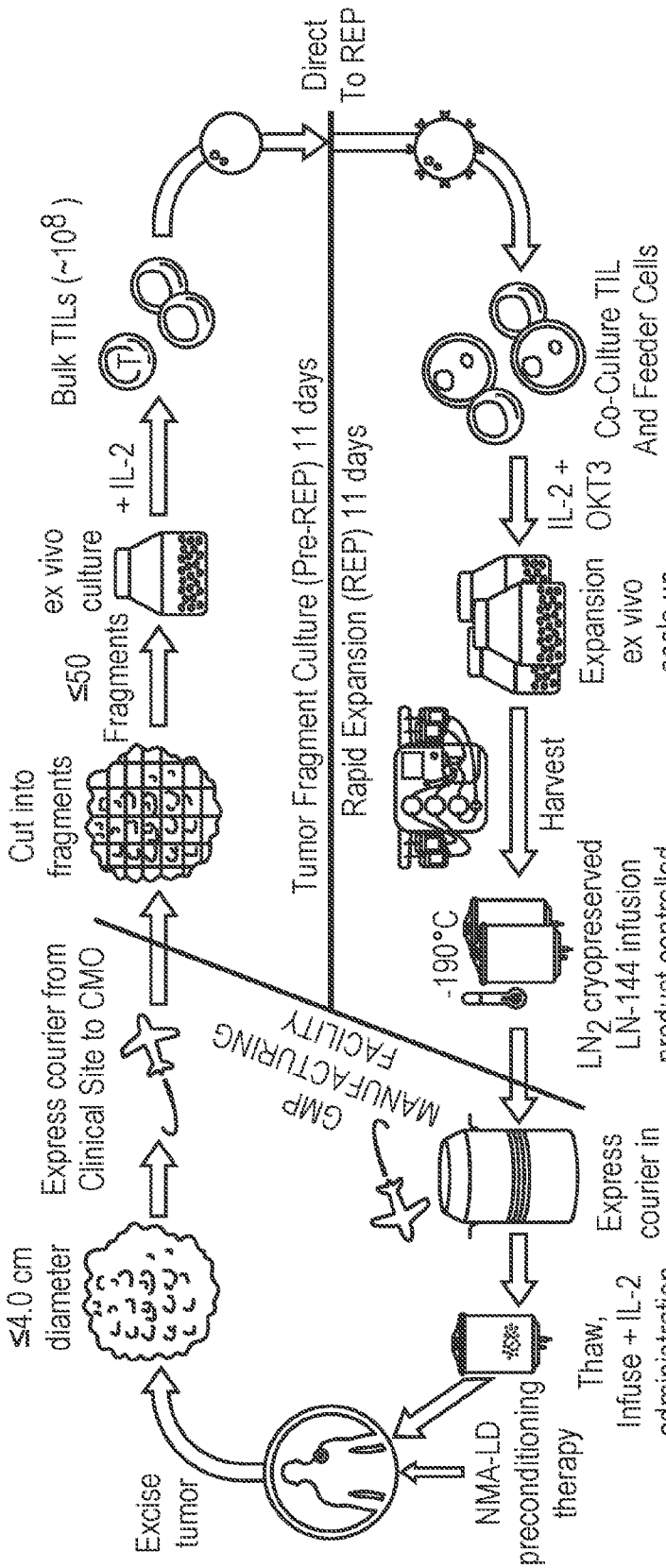

≤4.0 cm diameter
Excise tumor
Express courier from Clinical Site to CMO
Cut into fragments
≤50 Fragments
ex vivo culture
+ IL-2
Bulk TILs (~10^8)
Direct To REP
Tumor Fragment Culture (Pre-REP) 11 days
Rapid Expansion (REP) 11 days
GMP MANUFACTURING FACILITY
NMA-LD preconditioning therapy
Thaw, Infuse + IL-2 administration
Express courier in cryoshipper from CMO to Clinical Site
-190°C
LN2 cryopreserved LN-144 infusion product controlled rate freeze
Harvest
Expansion ex vivo scale up
IL-2 + OKT3
Co-Culture TIL And Feeder Cells

Figure 3

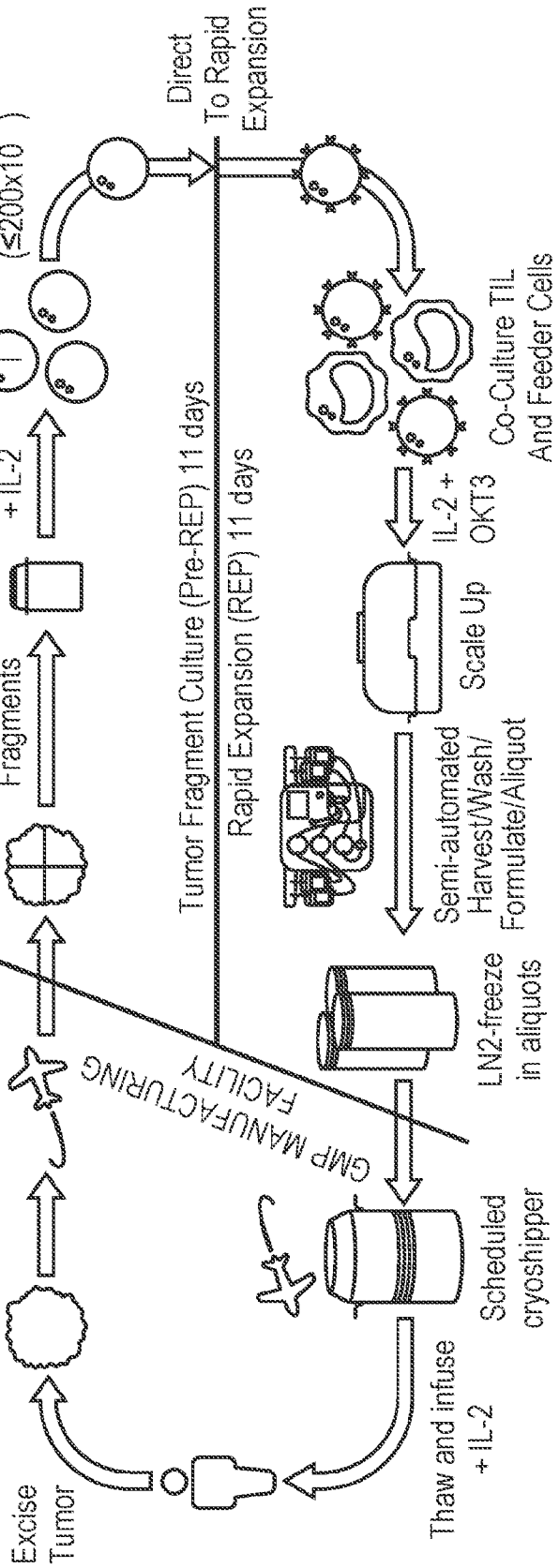

Excise Tumor
≤4.0 cm Diameter
≤96hrs
8-27 mm3 Fragments
≤50 Fragments
Closed single use bioreactor
+ IL-2
Bulk TILs (≤200x10)
Direct To Rapid Expansion
Tumor Fragment Culture (Pre-REP) 11 days
Rapid Expansion (REP) 11 days
GMP MANUFACTURING FACILITY
Thaw and infuse + IL-2
Scheduled cryoshipper
LN2-freeze in aliquots
Semi-automated Harvest/Wash/ Formulate/Aliquot
Scale Up
IL-2 + OKT3
Co-Culture TIL And Feeder Cells

Figure 4

Figure 5

Process 1C: 43-55 Days for Steps A - E	**Process 2A: about 22 days from Steps A - E**
1. STEP A Obtain Patient Tumor Sample	**1. STEP A** Obtain Patient Tumor Sample
2. STEP B Fragmentation and First Expansion 11 days to 21 days	**2. STEP B** Fragmentation and First Expansion 3 days to 14 days
3. STEP C First Expansion to Second Expansion Transition Optional Storage until Selection	**3. STEP C** First Expansion to Second Expansion Transition No Storage and Closed System
4. STEP D Second Expansion IL-2, OKT-3, antigen-presenting feeder cells Optionally repeat one or more times	**4. STEP D** Second Expansion IL-2, OKT-3, and antigen-presenting feeder cells Closed System
5. STEP E Harvest TILS from Step D	**5. STEP E** Harvest TILS from Step D Closed System
6. STEP F Final Formulation and/or Transfer to Infusion Bag	**6. STEP F** Final Formulation and/or Transfer to Infusion Bag (optionally cryopreserve)

Figure 6

Process Step	Process 1C Embodiment	Process 2A Embodiment	Advantages
Pre-REP	• 4 fragments per 10 GREX-10 flasks • 11-21 day duration	• 40 fragments per 1 GREX-100M flask • 11 day duration	• Increased tumor fragments per flask • Shortened culture time • Reduced number of steps • Amenable to closed system
Pre-REP to REP Transition	• Pre-REP TIL are frozen until phenotyped for selection then thawed to proceed to the REP (~day 30) • REP requires >40×10^6 TIL	• Pre-REP TIL directly move to REP on day 11 • REP requires 25-200×10^6 TIL	• Shortened pre-REP-to-REP process • Reduced number of steps • Eliminated phenotyping selection • Amenable to closed system
REP	• 6 GREX-100M flasks on REP day 0 • 5×10^6 TIL and 5×10^8 PBMC feeders per flask on REP day 0 • Split to 18-36 flasks on REP day 7 • 14 day duration	• 1 GREX-500M flask on day 11 • 25-200×10^6 TIL and 5x10^9 PBMC feeders on day 11 • Split to ≤ 6 GREX-500M flasks on day 16 • 11 day duration	• Reduced number of steps • Shorter REP duration • Closed system transfer of TIL between flasks • Closed system media exchanges
Harvest	• TIL harvested via centrifugation	• TIL harvested via LOVO automated cell washing system'	• Reduced number of steps • Automated cell washing • Closed system • Reduced loss of product during wash
Final Formulation	• Fresh product in Hypothermosol • Single infusion bag • Limited shipping stability	• Cyropreserved product in PlasmaLyte-A + 1% HSA and CS10 stored in LN_2 • Multiple aliquots • Longer shipping stability	• Shipping flexibility • Flexible patient scheduling • More timely release testing
Overall Estimated Process Time	• 43-55 days	• 22 days	• Faster turnaround to patient

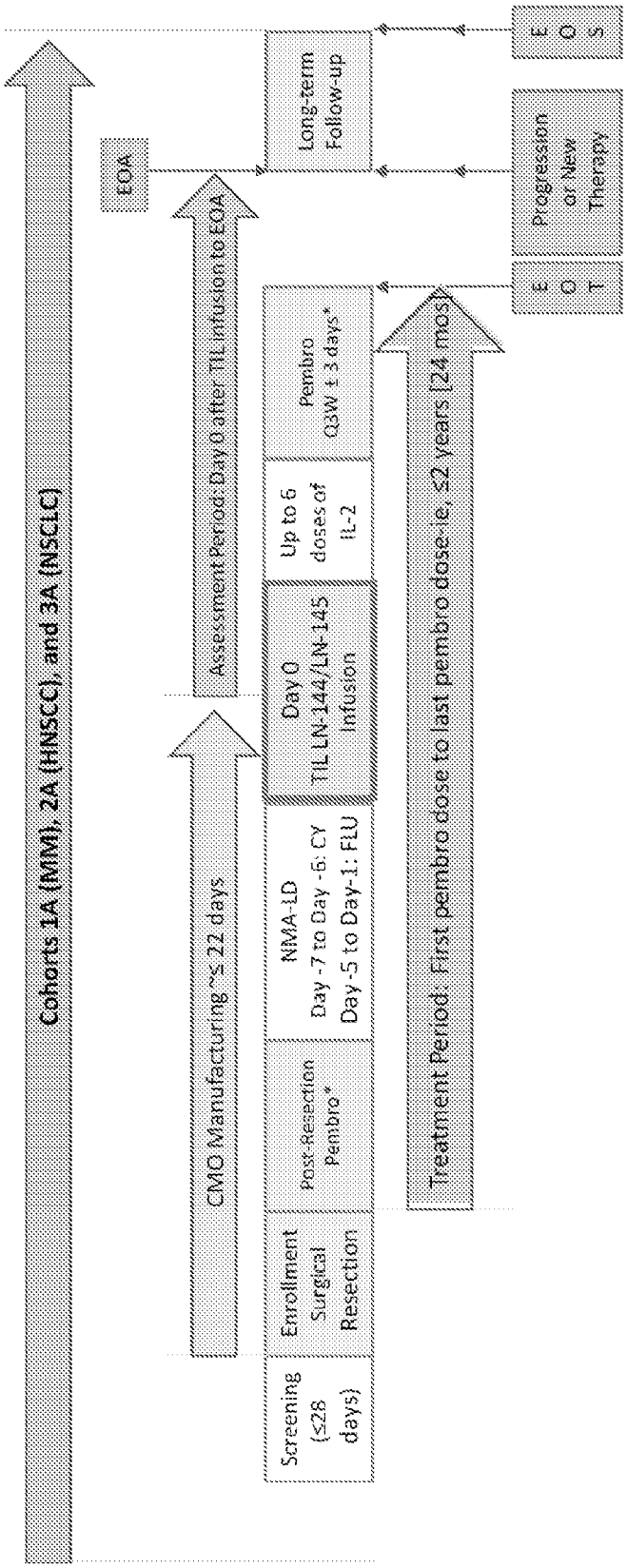

Cohorts 1A (MM), 2A (HNSCC), and 3A (NSCLC)
EOA
Long-term Follow-up
E O S
Progression or New Therapy
E O T
Assessment Period: Day 0 after TIL infusion to EOA
CMO Manufacturing ~≤ 22 days
Pembro Q3W ± 3 days*
Up to 6 doses of IL-2
Day 0 TIL LN-144/LN-145 Infusion
NMA-LD Day -7 to Day -6: CY Day -5 to Day -1: FLU
Post-Resection Pembro*
Enrollment Surgical Resection
Screening (≤28 days)
Treatment Period: First pembro dose to last pembro dose-ie, ≤2 years [24 mos]

Figure 7

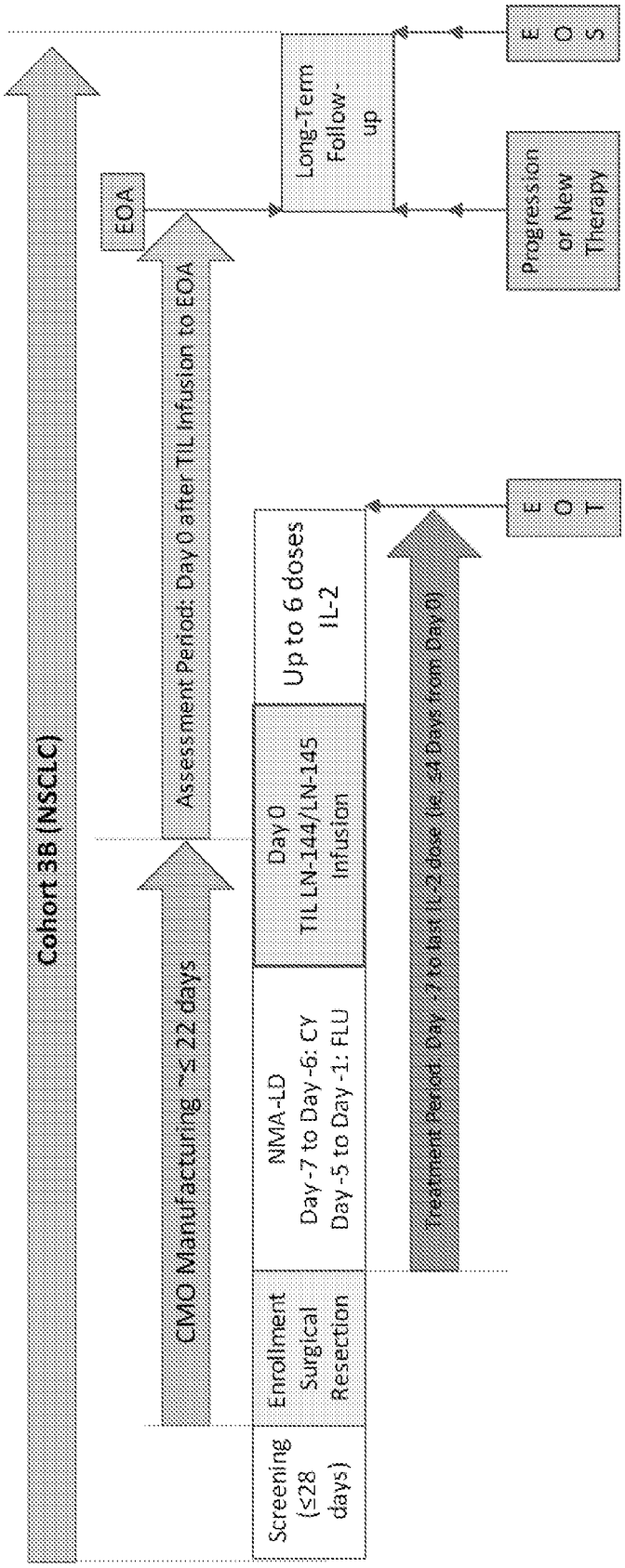

Cohort 3B (NSCLC)
Screening (≤28 days)
Enrollment Surgical Resection
CMO Manufacturing ~≤ 22 days
NMA-LD Day-7 to Day-6: CY Day-5 to Day-1: FLU
Day 0 TIL LN-144/LN-145 Infusion
Up to 6 doses IL-2
Assessment Period: Day 0 after TIL infusion to EOA
Treatment Period: Day 1 to last IL-2 dose (ie, ≤4 Days from Day 0)
EOA
Long-Term Follow-up
Progression or New Therapy
E O T
E O S

Figure 8

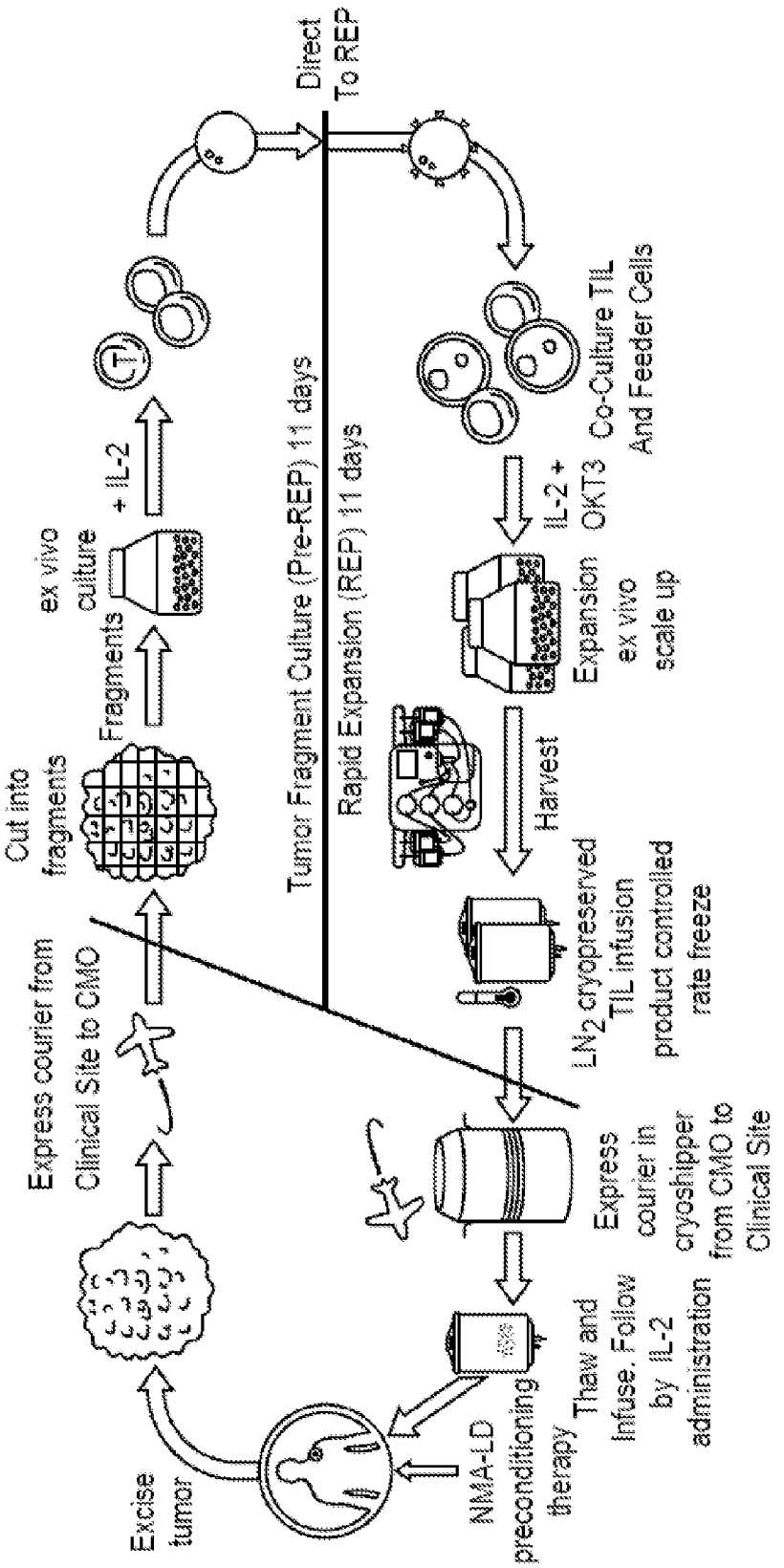

Excise tumor
NMA-LD preconditioning therapy
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Fragments
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Tumor Fragment Culture (Pre-REP) 11 days
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Harvest
Expansion ex vivo scale up
IL-2 + OKT3
Co-Culture TIL And Feeder Cells
Direct To REP

Figure 9

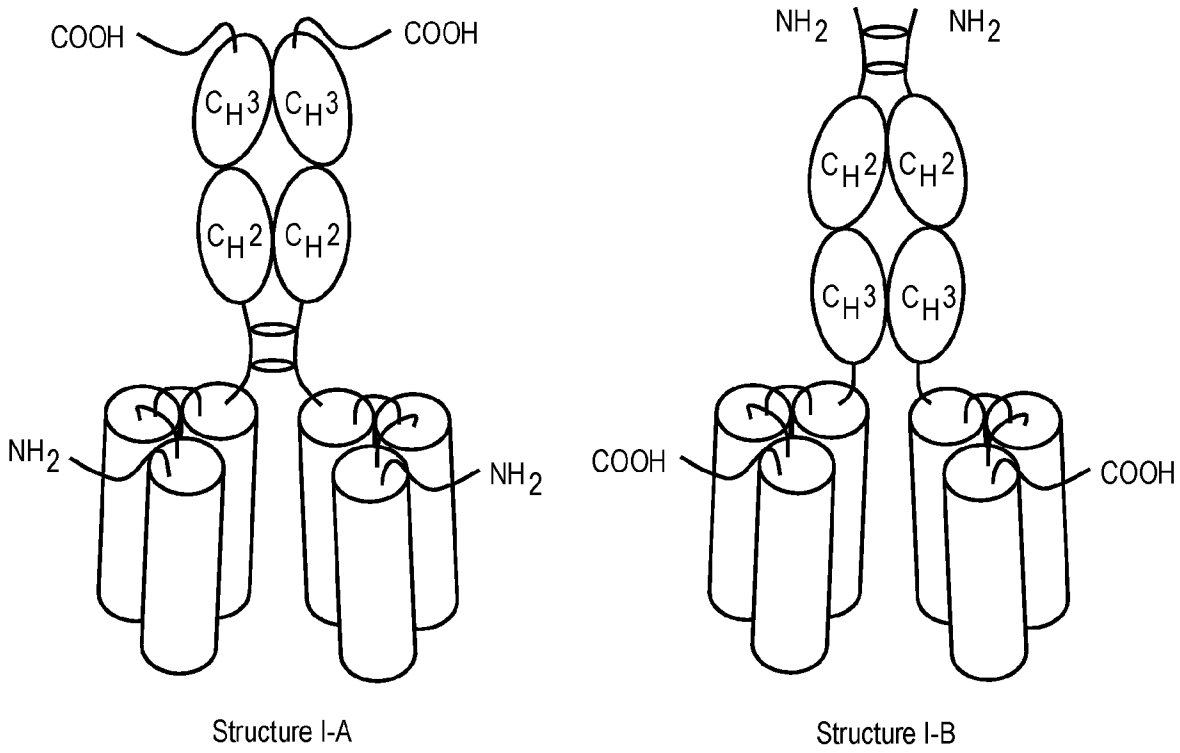

COOH
COOH
C_H3
C_H3
C_H2
C_H2
NH_2
NH_2
Structure I-A
NH_2
NH_2
C_H2
C_H2
C_H3
C_H3
COOH
COOH
Structure I-B

Figure 10