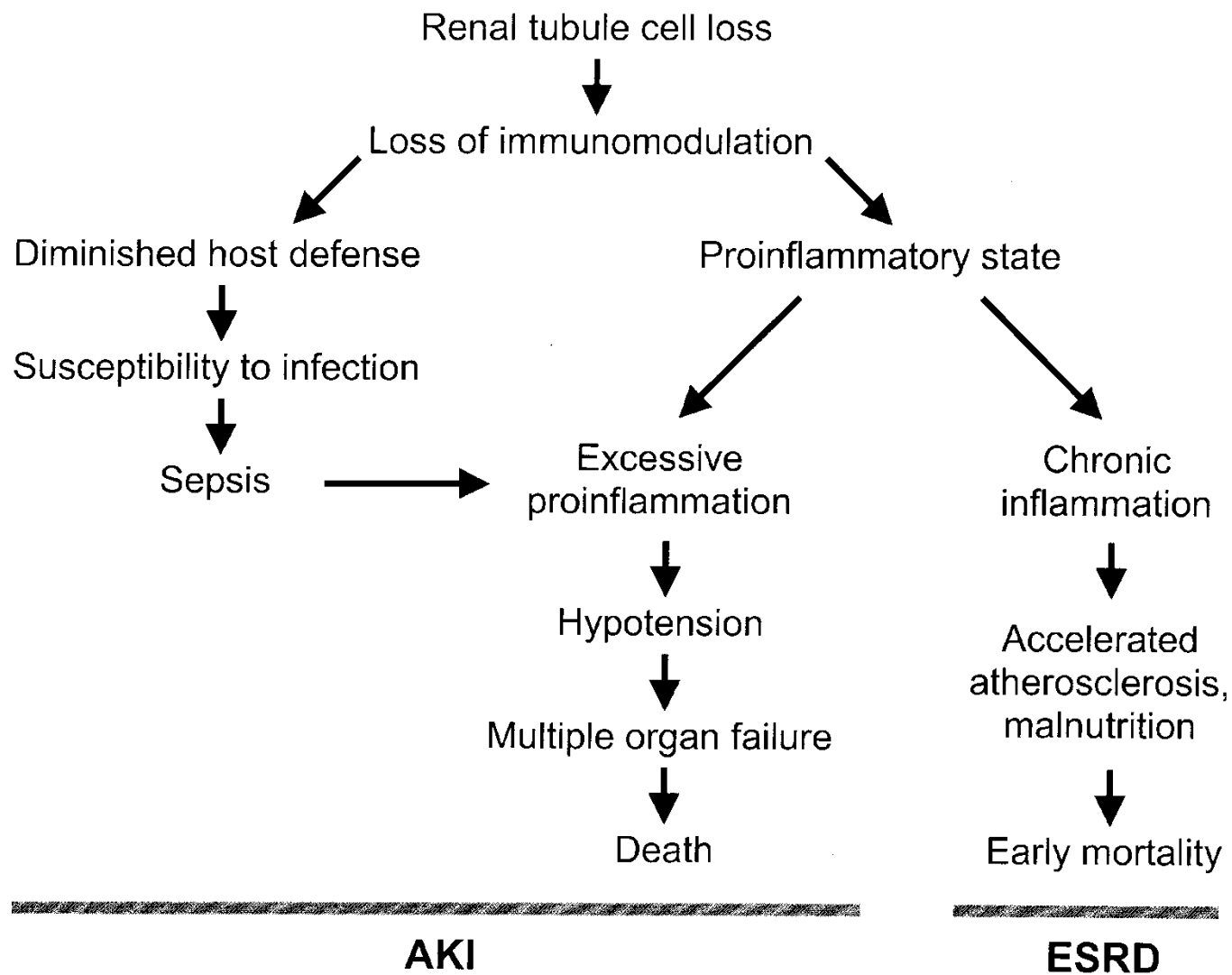
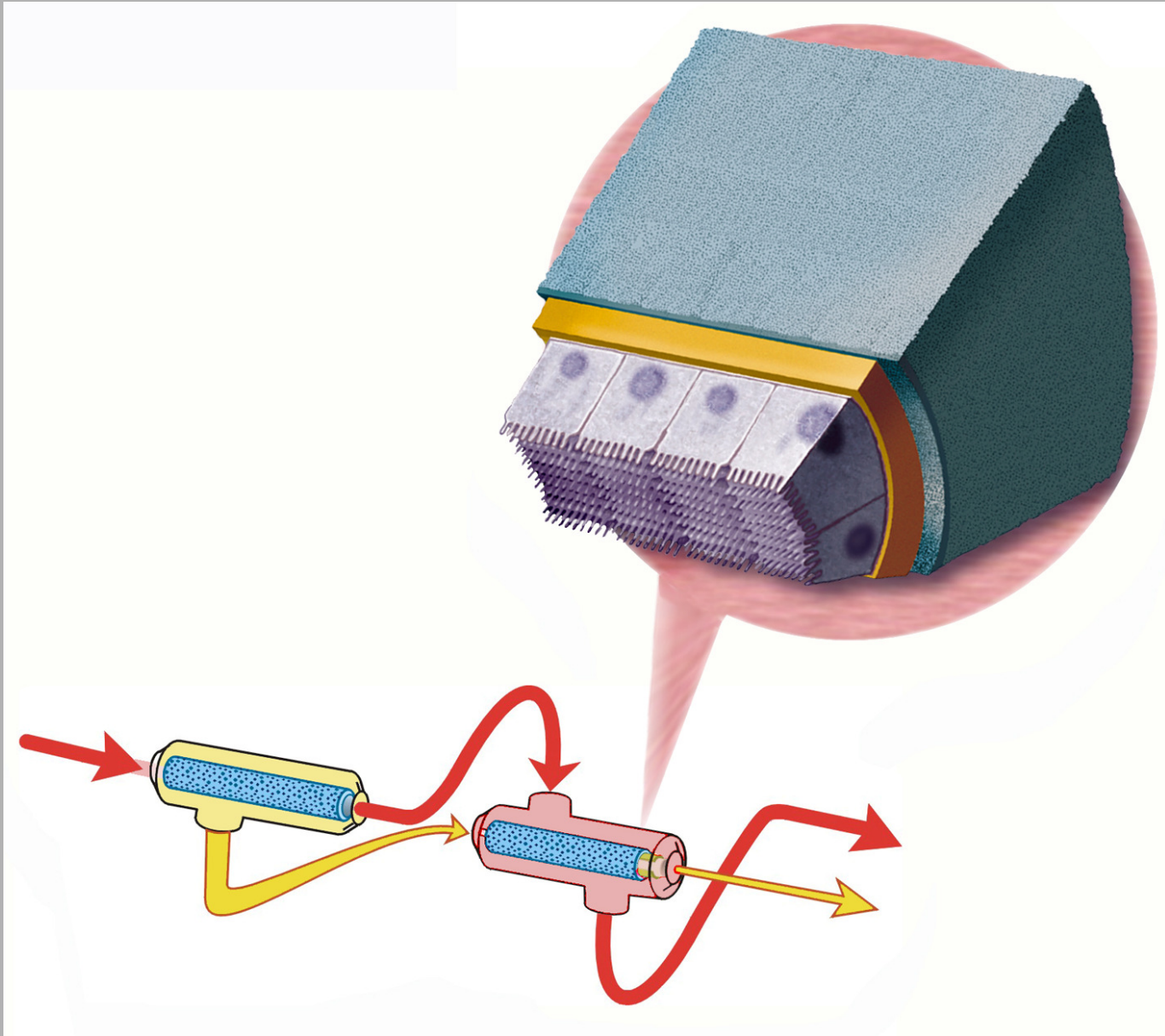


Innovative Devices to Treat Kidney Failure

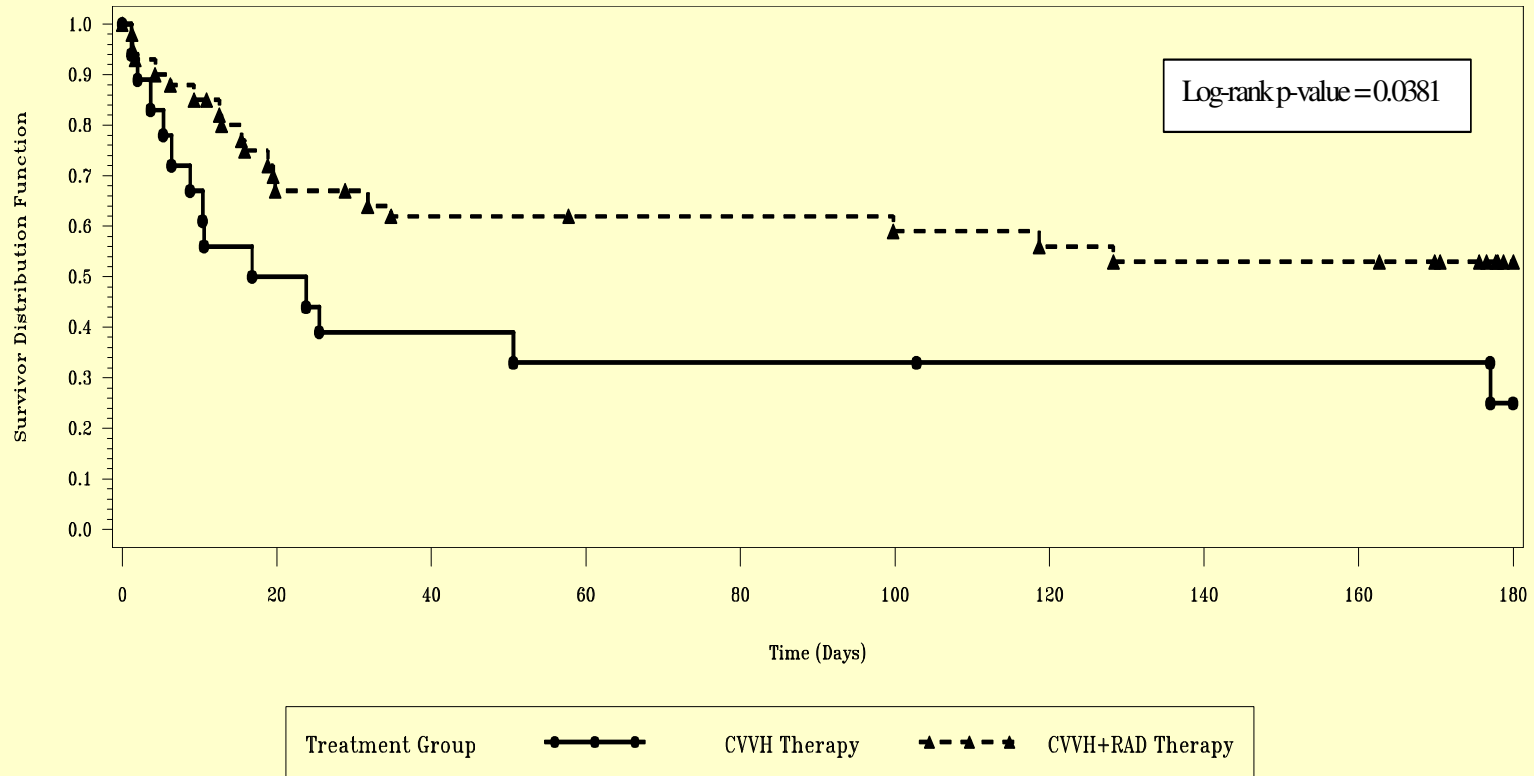
H. David Humes, M.D.
University of Michigan

Disclosures: Innovative BioTherapies, Inc.; CytoPherx,
Inc.; Renal Solutions, Inc.





Kaplan-Meier Survival Curve



The Cox Proportional Hazard ratio was 0.49 indicating that the risk of death for patients in the CVVH + RBT group was ~ 50% of that observed in the CVVH alone group.

Cell Therapy Manufacturing

Cell Isolation



Cell Expansion



Device Fabrication



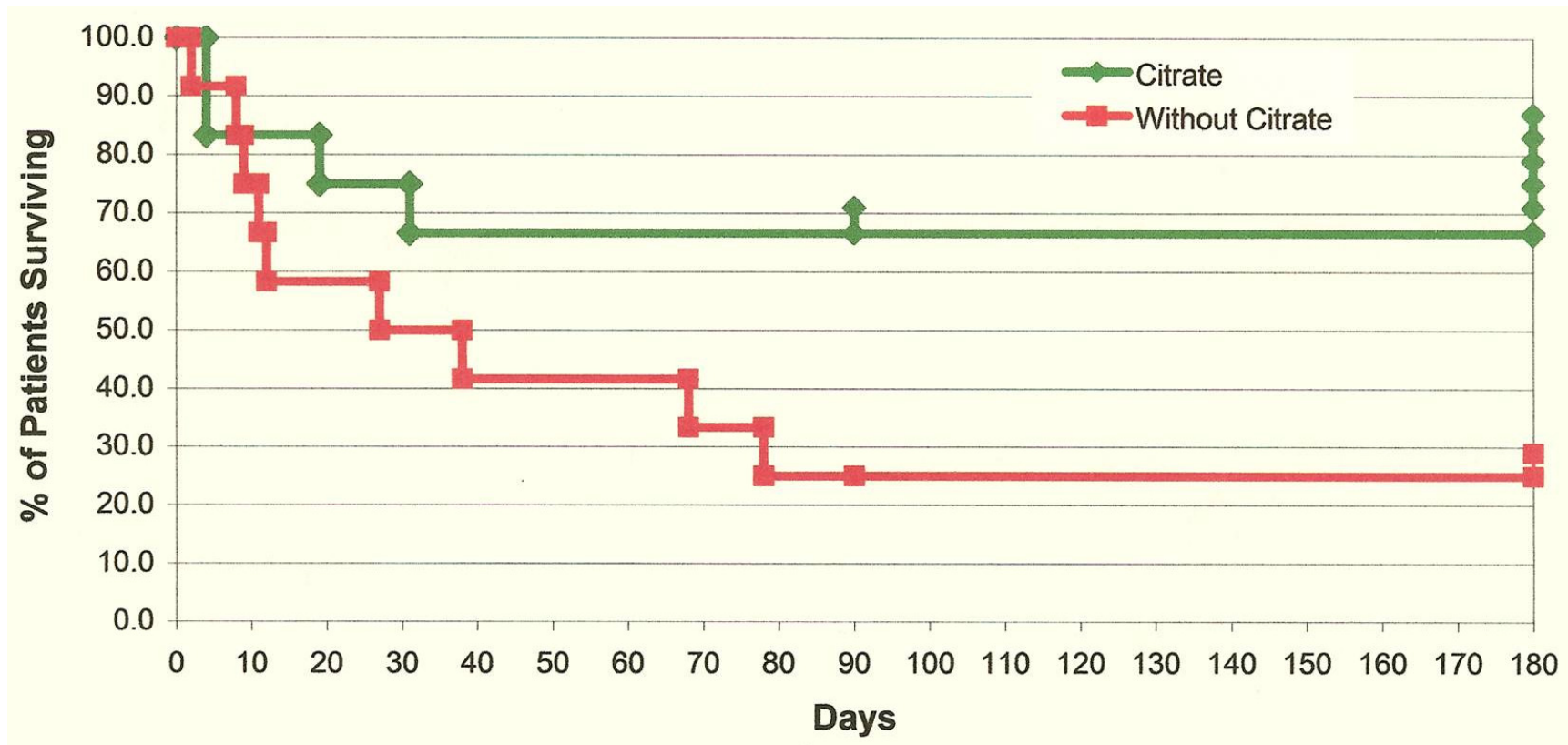
Device Storage and Distribution

RAD PHASE IIb CLINICAL STUDY

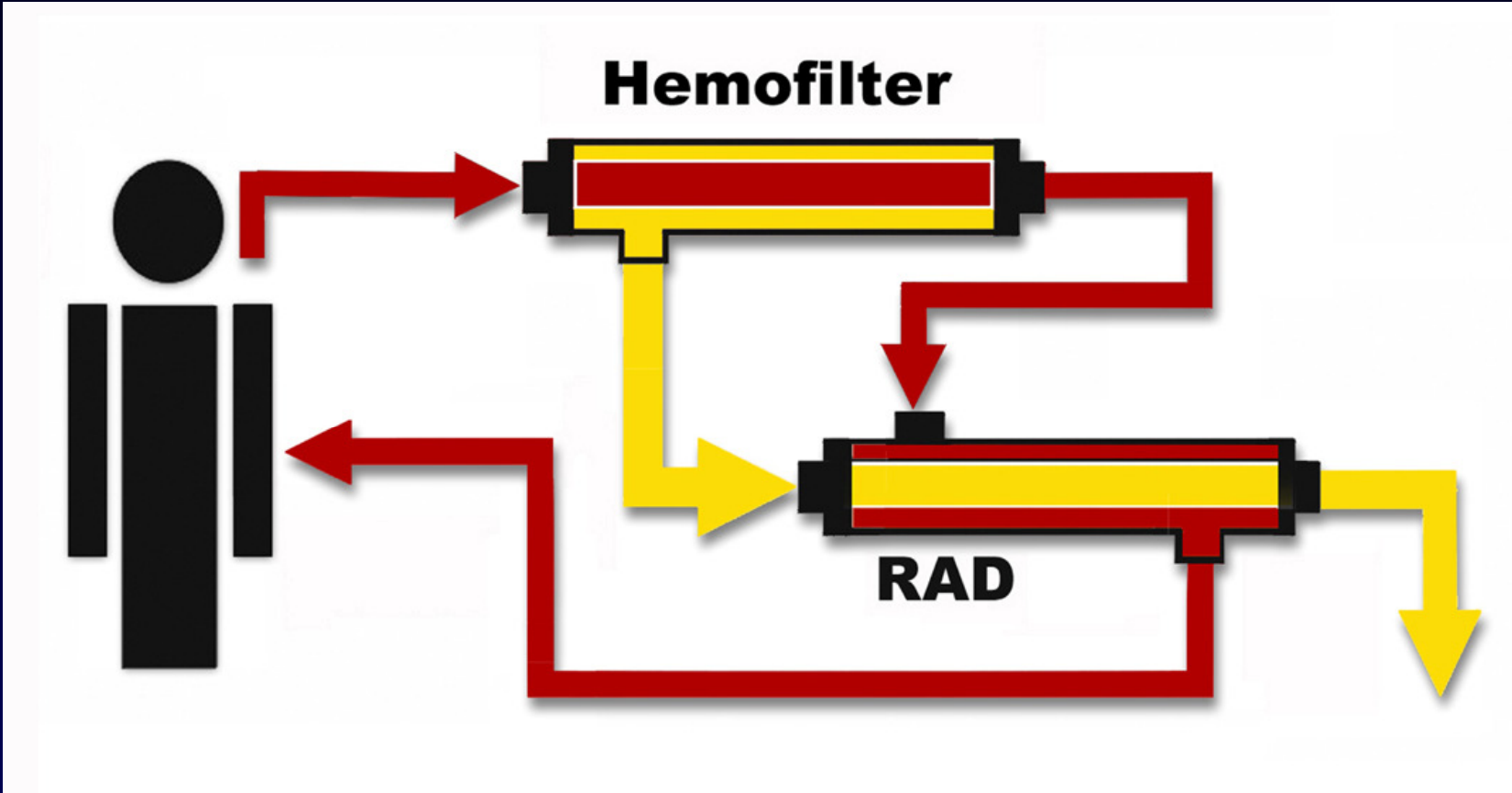
- Interim analysis suspended study
- Predicted improvement in mortality was not achievable due to be higher than expected survival in the control sham group
- Control group had a non-cell second cartridge
- Subgroup analysis demonstrated difference in the sham group between heparin and citrate anticoagulation

Blood Purification 29:183-190,2010

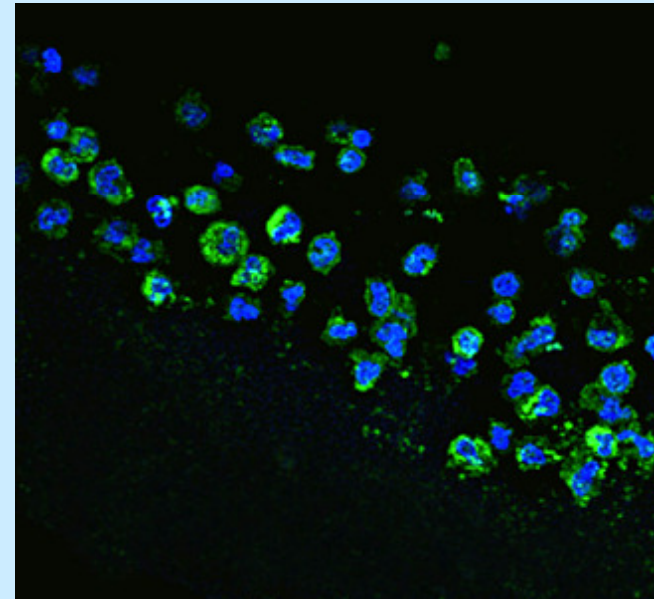
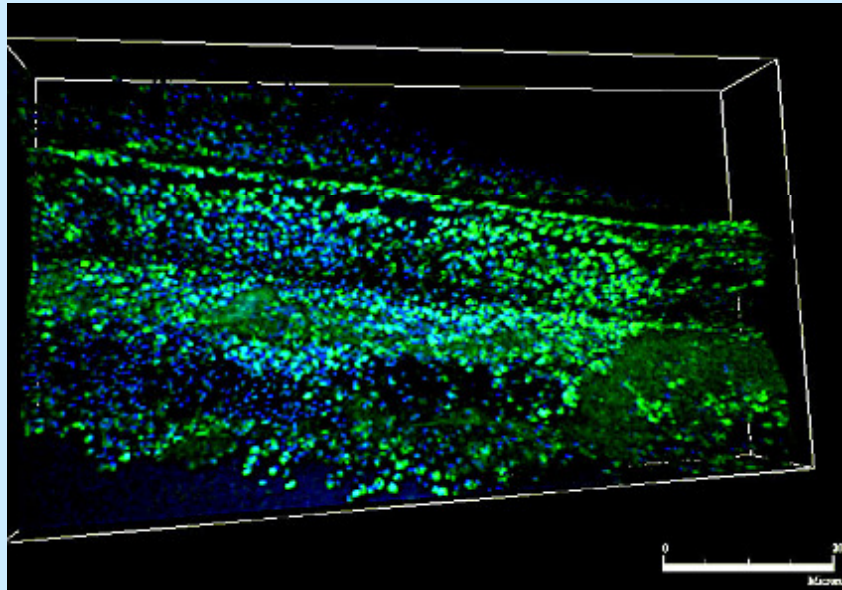
ARF CRRT Human Phase IIB



Survival Rates of Patients (n=12 each arm) in Phase II Multicenter, Randomized Clinical Trial

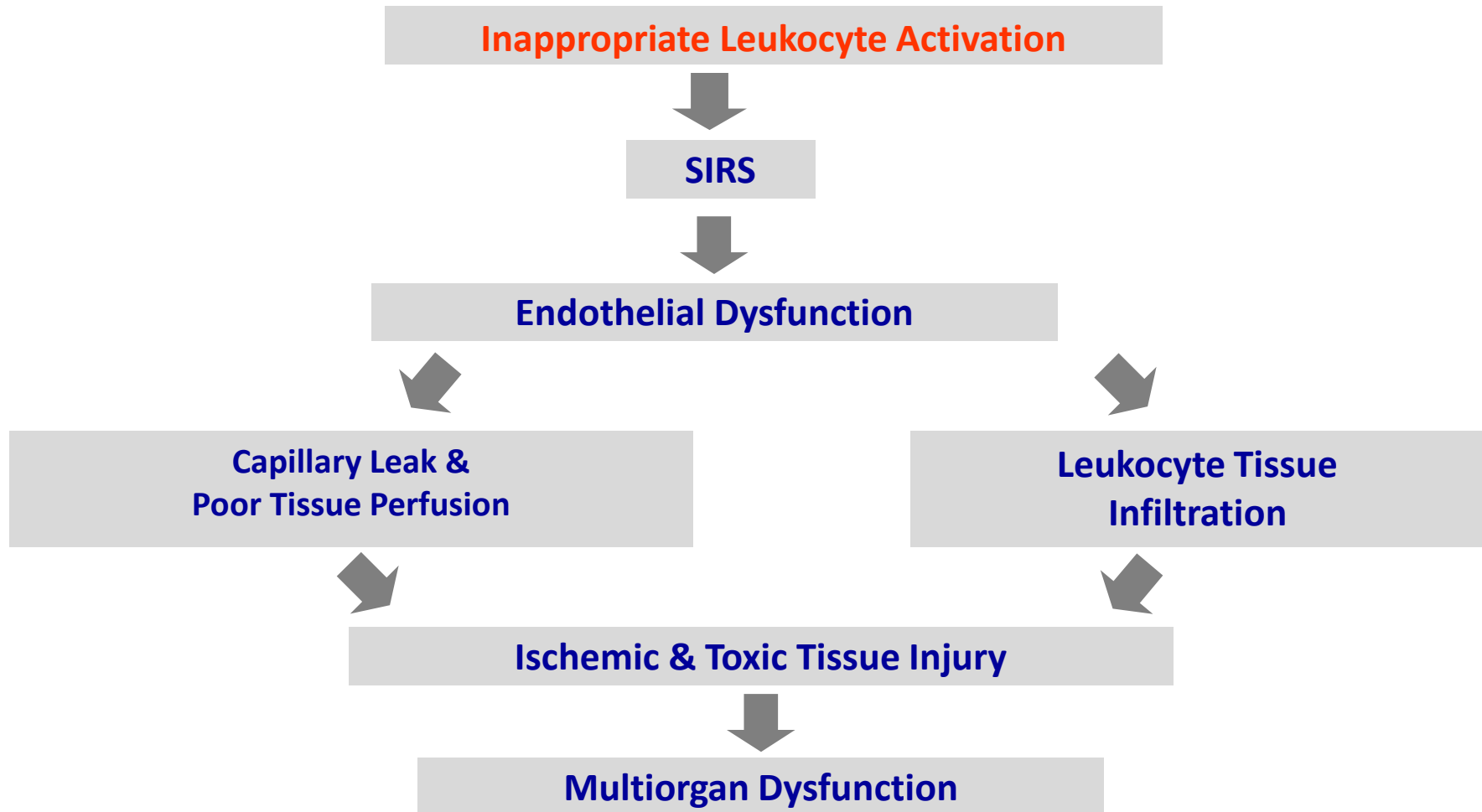


Leukocytes Adherent To Surface of Fibers In Dialysis Cartridge

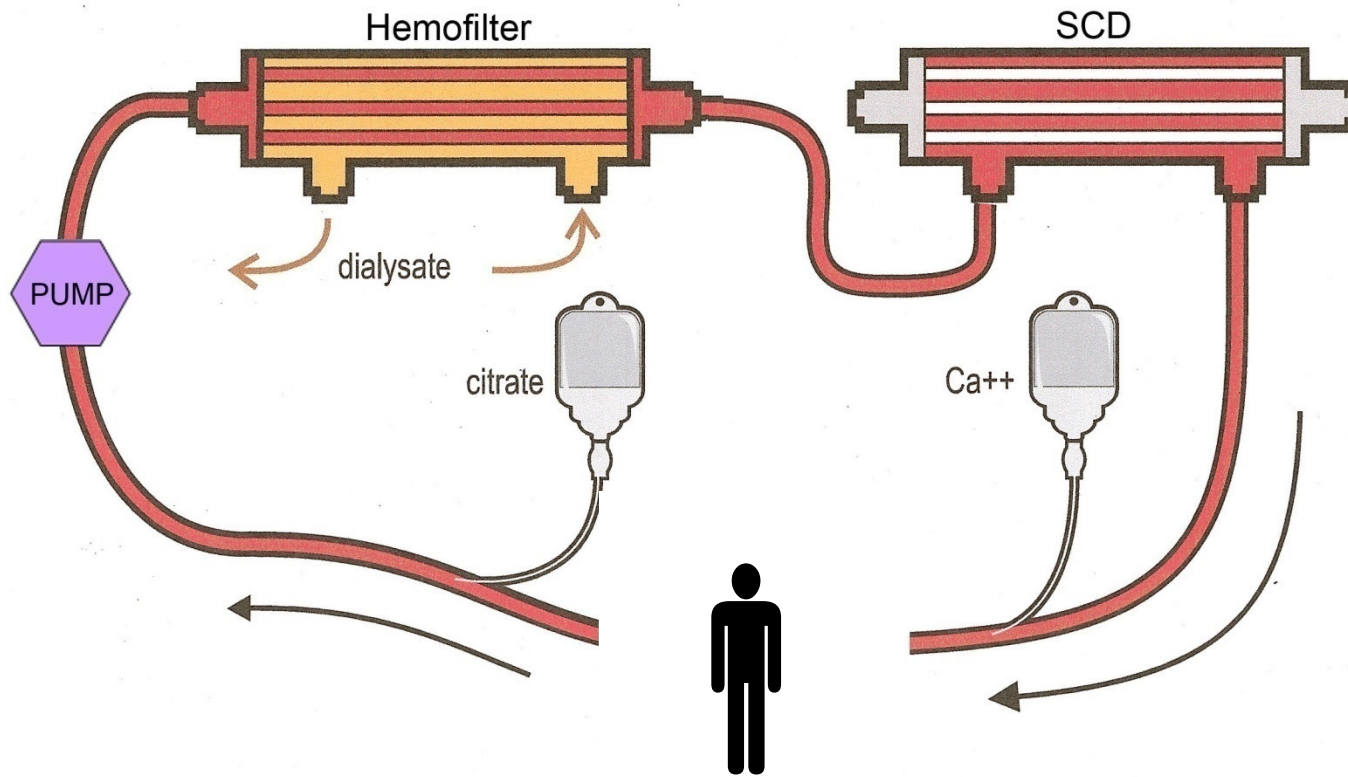


Inappropriate Inflammatory Response

58 + % Mortality in **Acute** Renal Failure



One-Pump System



Working Hypothesis of Mechanism for SCD Influence on SIRS

1. Primed

patient
blood

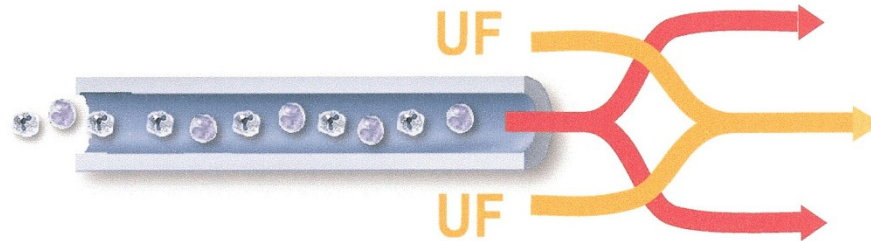


PMN



monocyte

2. Activation



3. Adherence



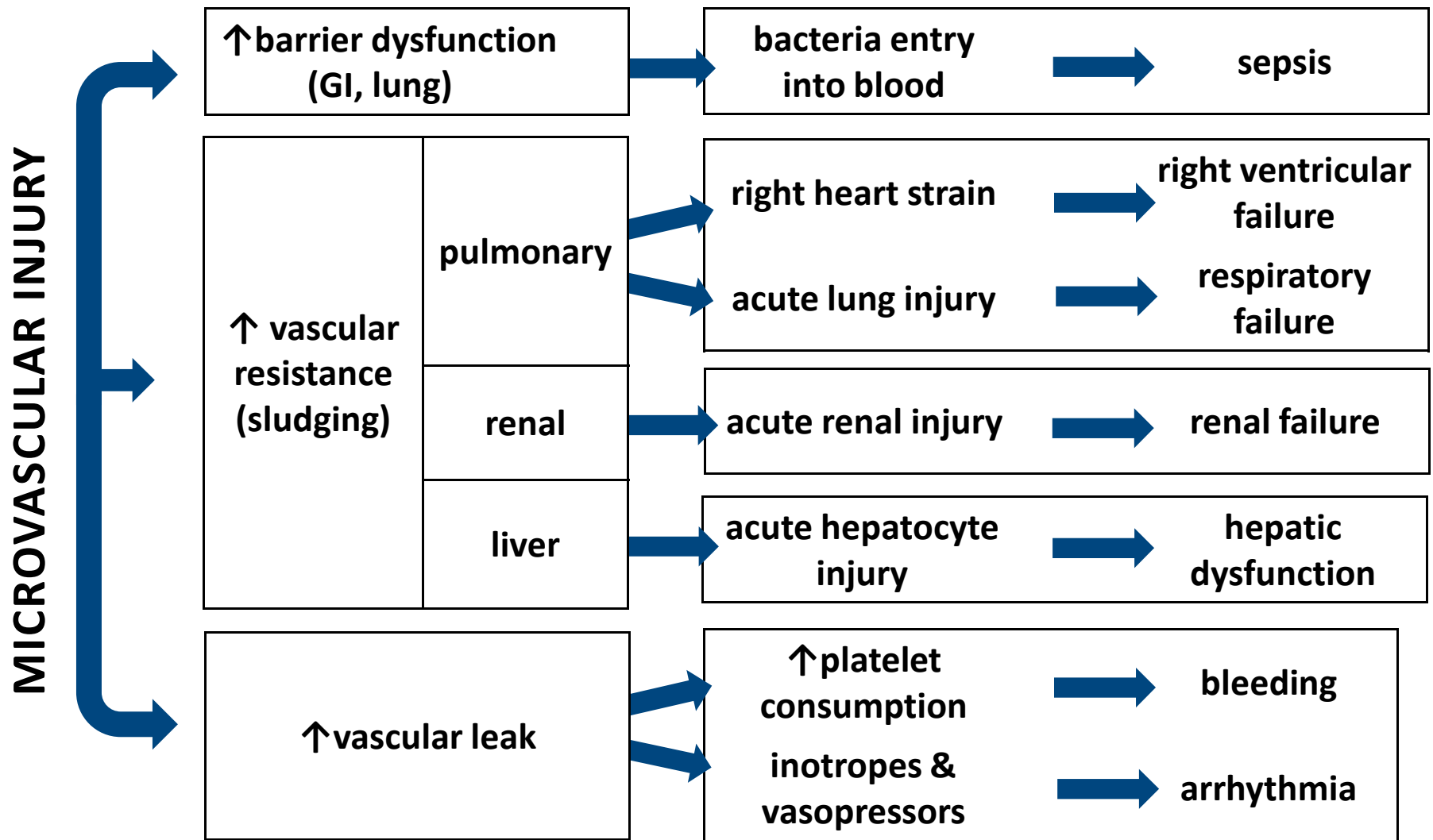
4. Inhibition



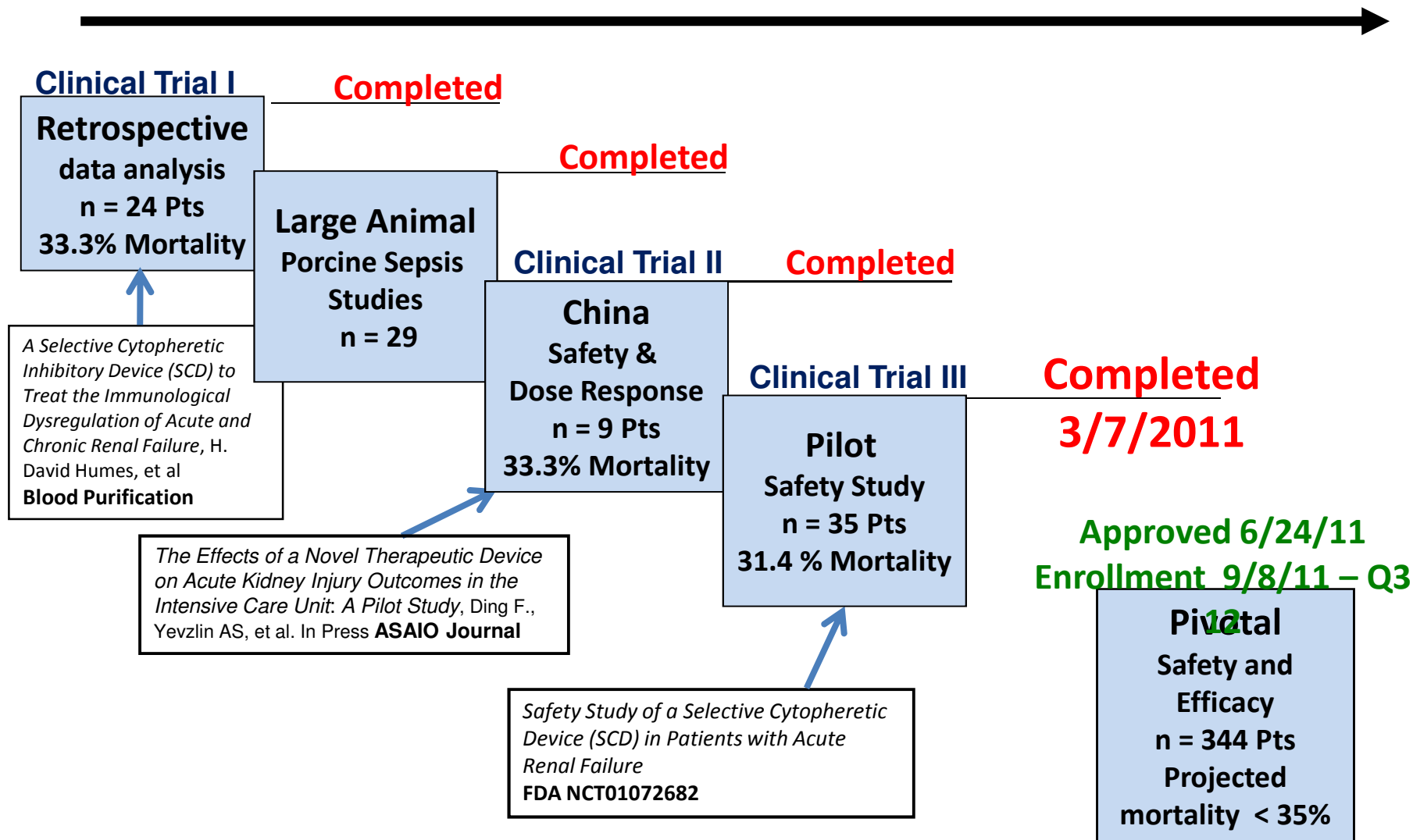
Citrate and Ca i ↓

SCD Mechanism of Action

REGULATION AND MODULATION OF NEUTROPHIL KINETICS



Clinical Studies



Cell Therapy Manufacturing

Cell Isolation



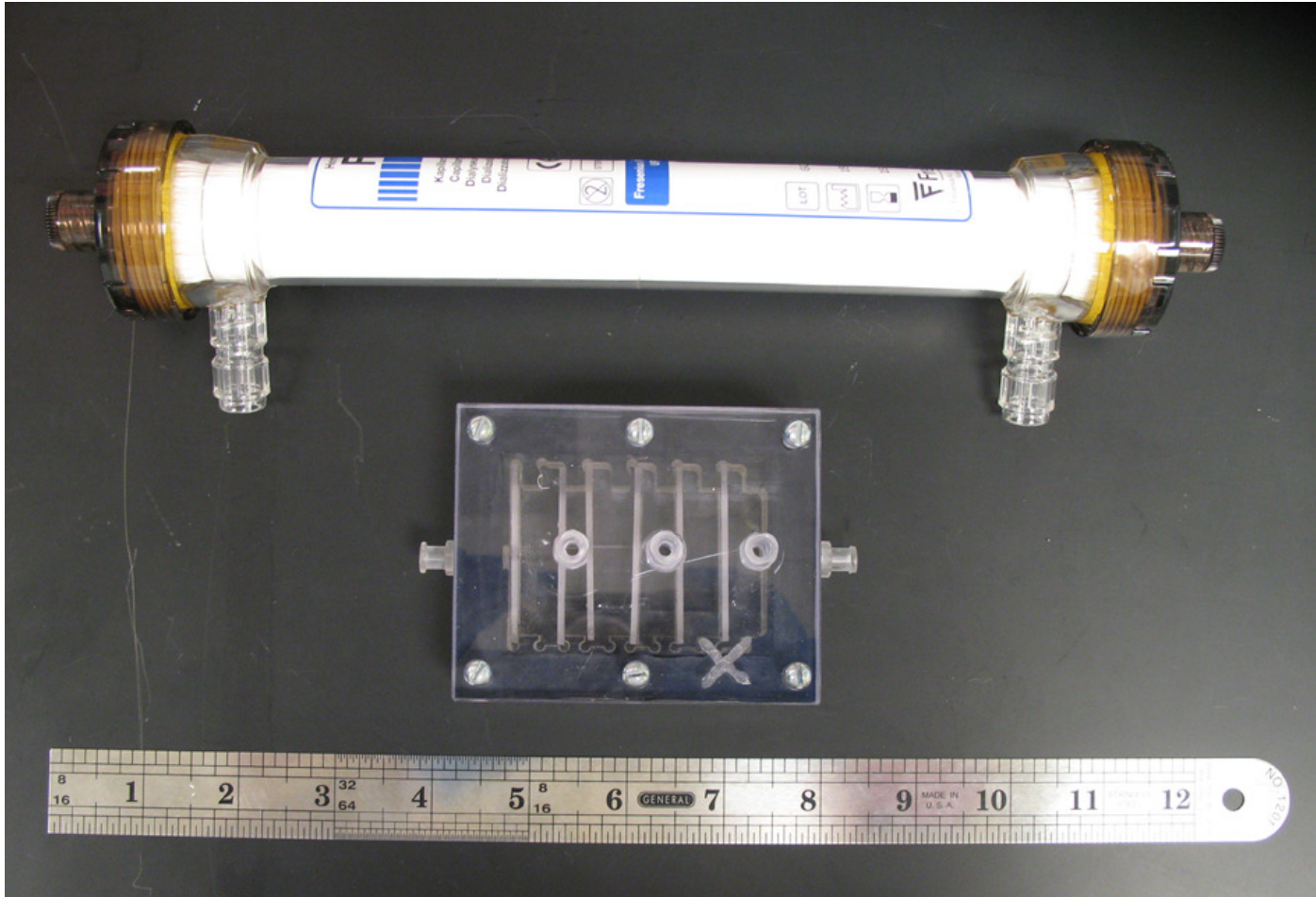
Cell Expansion



Device Fabrication



Device Storage and Distribution



Renal Cell Therapy Development

- Cardiorenal syndrome: BRECS(Bioartificial Renal Epithelial Cell System) testing in a CHF canine model
- ESRD: WEBAK(Wearable Bioartificial Kidney) using recycling peritoneal fluid for dialysate regeneration(sorbent based) and BRECS maintenance testing in a chronic uremic sheep model.
- BRECS improves MOF in pig septic shock model.