



CytoSorbents Corporation (NASDAQ: CTSO)

A Leader in Critical Care Immunotherapy

Q1 2017 Earnings Conference Call

May 8, 2017

Conference Call Participants

Dr. Phillip Chan, MD, PhD

Chief Executive Officer and President

Vincent Capponi, MS

Chief Operating Officer

Kathleen Bloch, MBA, CPA

Chief Financial Officer

Dr. Christian Steiner, MD

Vice President of Sales and Marketing

Christopher Cramer, MS, MBA

Vice President of Business Development

Moderator: Amy Phillips – Pascale Communications

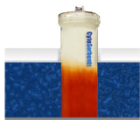
Safe Harbor Statement

Statements in this presentation regarding CytoSorbents Corporation and its operating subsidiaries CytoSorbents Medical, Inc and CytoSorbents Europe GmbH that are not historical facts are forward-looking statements and are subject to risks and uncertainties that could cause actual future events or results to differ materially from such statements. Any such forward-looking statements are made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. It is routine for our internal projections and expectations to change. Although these expectations may change, we are under no obligation to inform you if they do. Actual events or results may differ materially from those contained in the projections or forward-looking statements. The following factors, among others, could cause our actual results to differ materially from those described in a forward-looking statement: our history of losses; potential fluctuations in our quarterly and annual results; competition, inability to achieve regulatory approval for our device, technology systems beyond our control and technology-related defects that could affect the companies' products or reputation; risks related to adverse business conditions; our dependence on key employees; competition for qualified personnel; the possible unavailability of financing as and if needed; and risks related to protecting our intellectual property rights or potential infringement of the intellectual property rights of third parties. This list is intended to identify only certain of the principal factors that could cause actual results to differ from those discussed in the forward-looking statements. Readers are referred to a discussion of important risk factors detailed in the Company's Form 10-K filed with the Securities and Exchange Commission on March 3, 2017 and other reports and documents filed from time to time by us, which are available online at www.sec.gov.

CytoSorbents is A Leader in Critical Care Immunotherapy



Leading the Prevention or Treatment of
Life-Threatening Inflammation
in the ICU and Cardiac Surgery using
CytoSorb® Blood Purification



Sepsis



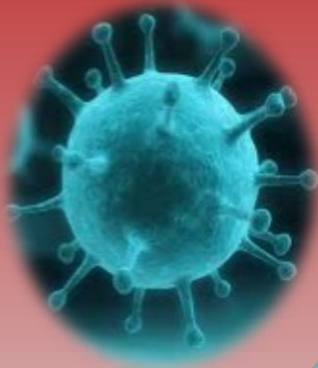
Trauma



Burn Injury



Influenza



**Millions Die
Of Uncontrolled Deadly
Inflammation
Each Year**



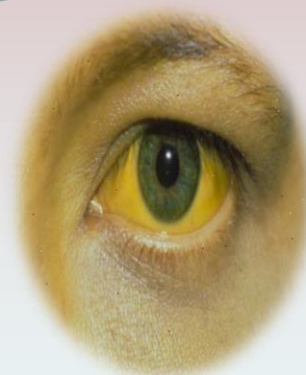
Lung Injury



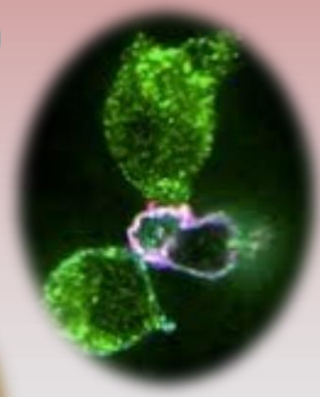
Pancreatitis



Surgical
Complications



Liver Failure



Cytokine
Release
Syndrome



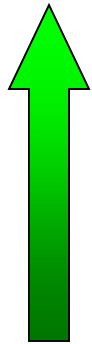
CytoSorbents
Working to Save Lives Through Blood Purification

CytoSorb® Removes the Fuel to the Fire

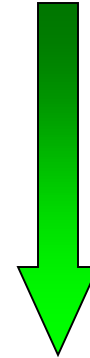
- CytoSorb® targets the \$20+ billion opportunity in critical care and cardiac surgery
- Approved in the European Union as the only specifically approved extracorporeal cytokine filter
- Approved for use in any situation where cytokines are elevated
- Removes cytokines and many other inflammatory mediators such as free hemoglobin, bacterial toxins, myoglobin, and activated complement
- Works with standard dialysis and heart-lung machines
- Safe and well-tolerated: In 23,000+ human treatments, up from 20,000 last quarter



Goal: To Prevent or Treat Organ Failure

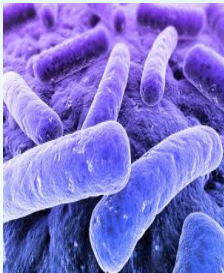


Improve
Patient
Outcome
and
Survival

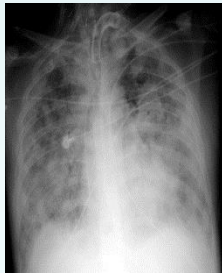


Decrease
Costs Of
ICU and
Patient
Care

Sepsis



ARDS



Burn Injury



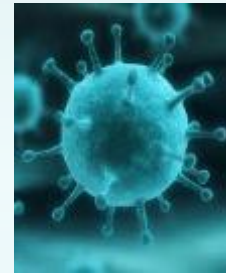
Trauma



Pancreatitis



Influenza



Surgical



The Potential to Revolutionize Critical Care Medicine



CytoSorbents

Working to Save Lives Through Blood Purification

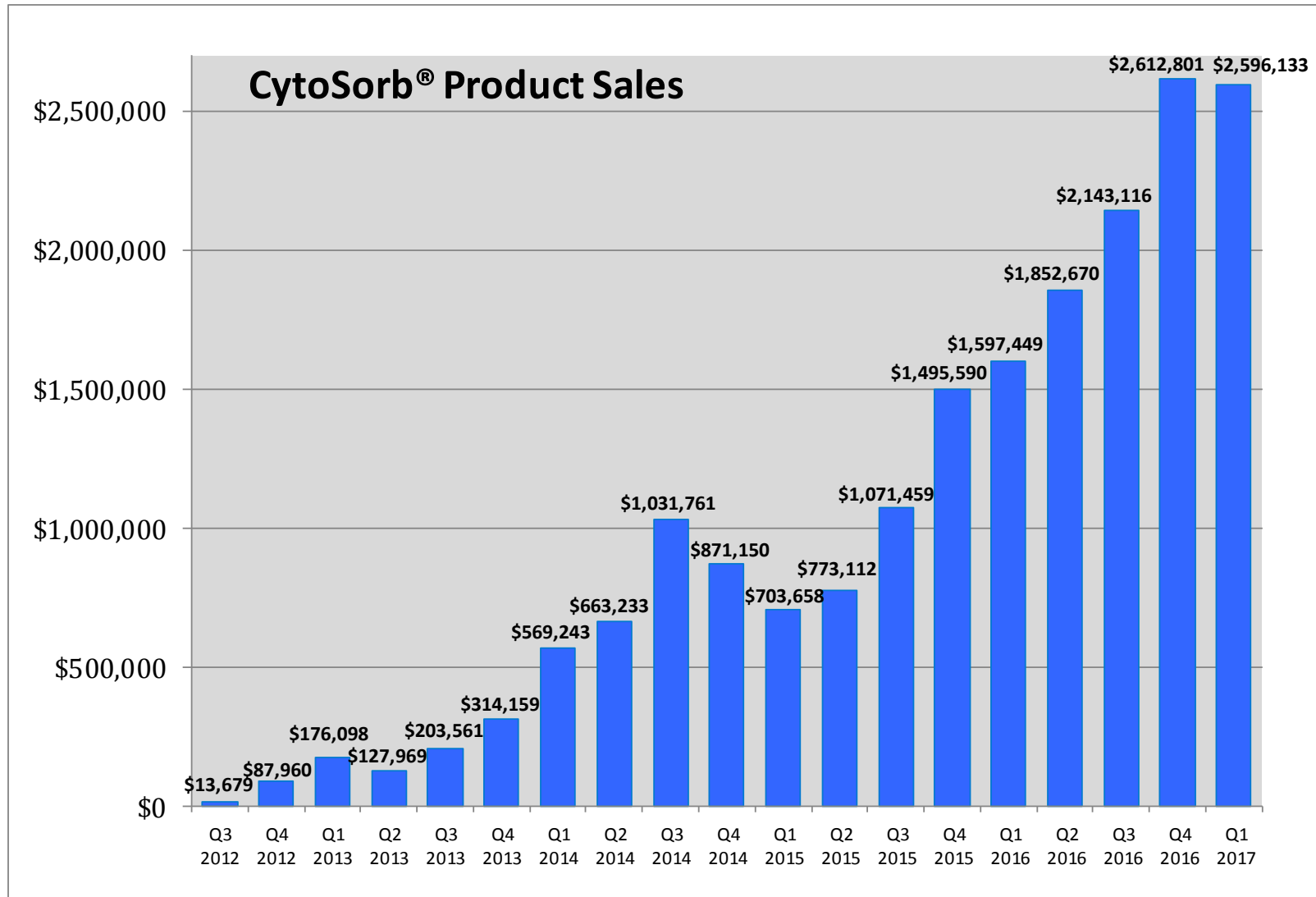
Financial Highlights

Comparative Quarterly Revenue Results

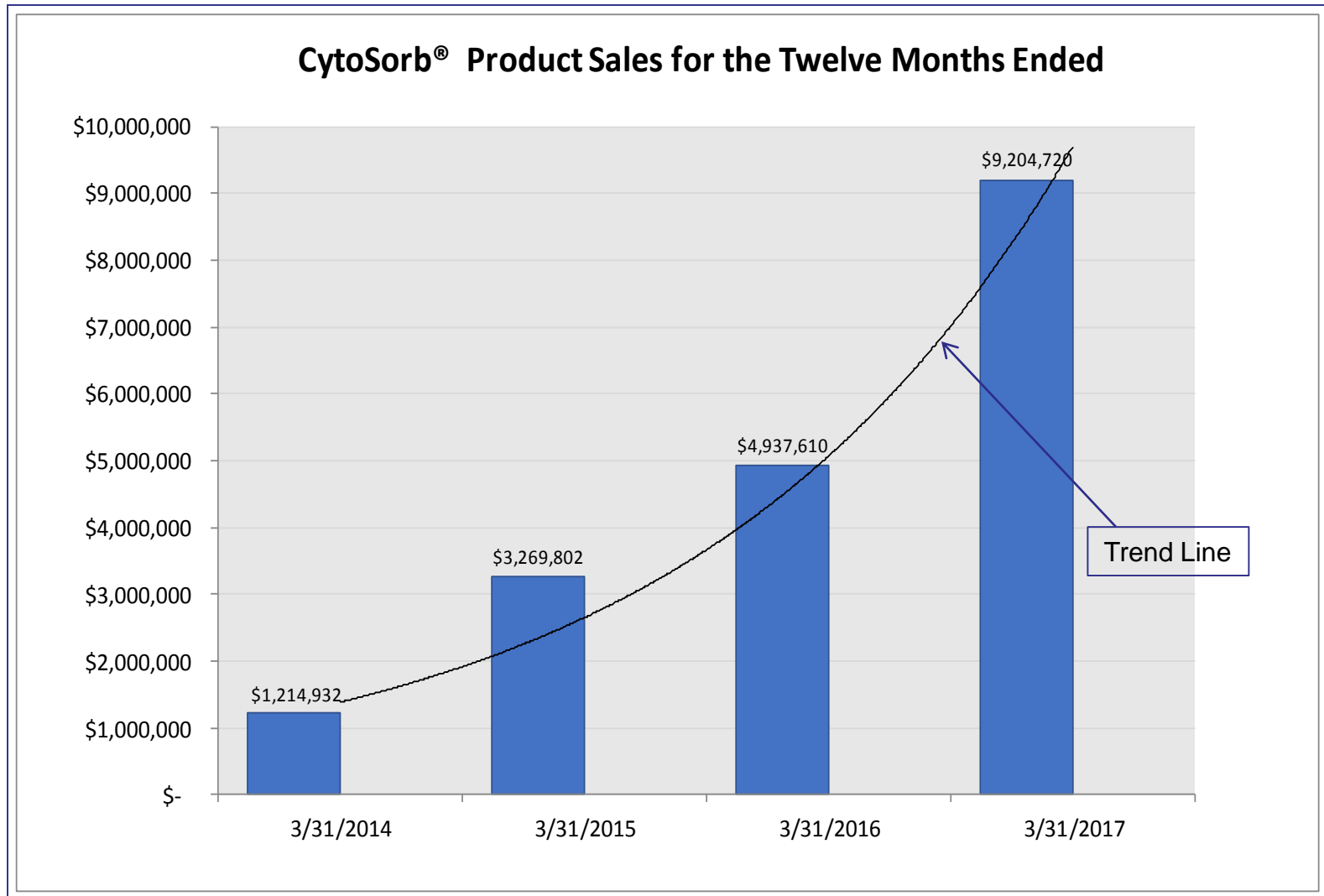
	Quarter Ended Mar 31, 2017		Quarter Ended Mar 31, 2016		% Incr.
Product revenue	\$ 2,596,133		\$ 1,597,449		63%
Grant and other income	517,385		212,733		143%
Total revenue	\$ 3,113,518		\$ 1,810,182		72%

- CytoSorb® product sales for Q1 2017 increased 63% to \$2.6M, from \$1.6M for Q1 2016
- For the first quarter of 2017 grant revenue 143% to \$517K as compared to \$212K in Q1 2016
- Total revenue, which includes both product sales and grant revenue, increased by 72% to \$3.1M in Q1 2017 as compared to \$1.8M for Q1 2016

Quarterly Product Sales



Trailing Twelve Months Product Sales



Targeting Operating Profitability by 2018

Seeing a very healthy market and continued strong interest in CytoSorb

- Good organic growth across the board in both critical care and cardiac surgery amongst direct sales and distributors
- Finalization of reimbursement rates in Germany very important
- Increased performance by our strategic partners and distributors
- Ramping of co-marketing agreement with Fresenius Medical Care
- New applications such as our Therapeutic-ECMO kit pending launch
- More and more clinical data

Working Capital and Cap Table

The net proceeds of \$10.3M on April 4, 2017, brings cash to \$13.5M. Another \$5M available from term loan may further extend operating runway.

Working Capital as of				
	3/31/17	12/31/16	12/31/15	12/31/14
Current Assets:				
Cash and short-term investments	\$ 3,240	\$ 5,245	\$ 7,509	\$ 5,550
Grants and accounts receivable, net	1,732	1,433	649	819
Inventories	858	834	1,191	538
Prepaid expenses and other current assets	451	316	512	700
Total current assets	6,281	7,828	9,861	7,607
Current Liabilities(1):				
Accounts payable	1,660	1,330	685	698
Accrued expenses and other current liabilities	1,608	2,115	723	825
Current maturities of long-term debt	1,250	833		
Deferred revenue			-	1
Total current liabilities	4,518	4,278	1,408	1,524
Net Working Capital	\$ 1,763	\$ 3,550	\$ 8,453	\$ 6,083

(1) Excludes warrant liability, a current liability that does not have cash implications.

Cap Table 3/31/2017

	Fully Diluted Common Shares
Common Stock	25,552,827
Options	3,730,247
Warrants	1,038,560
	30,321,634



Excerpts from REFRESH I Trial AATS Presentation



Use of a novel hemoadsorption technology to reduce plasma free hemoglobin during complex cardiac surgery: Results from the randomized controlled safety and feasibility REFRESH I Trial



Dr. Thomas G. Gleason, MD

University of Pittsburgh Medical Center

For the REFRESH I Investigators

Michael Argenziano

Joseph E. Bavaria

Lauren C. Kane

Joseph S. Coselli

Richard M. Engelman

Kenichi A Tanaka

Ahmed Awad

Michael E. Sekela

PI: Joseph B. Zwischenberger

Columbia University Medical Center

University of Pennsylvania

Texas Children's Hospital

Texas Heart Institute

Baystate Medical Center

Univ of Maryland School of Medicine

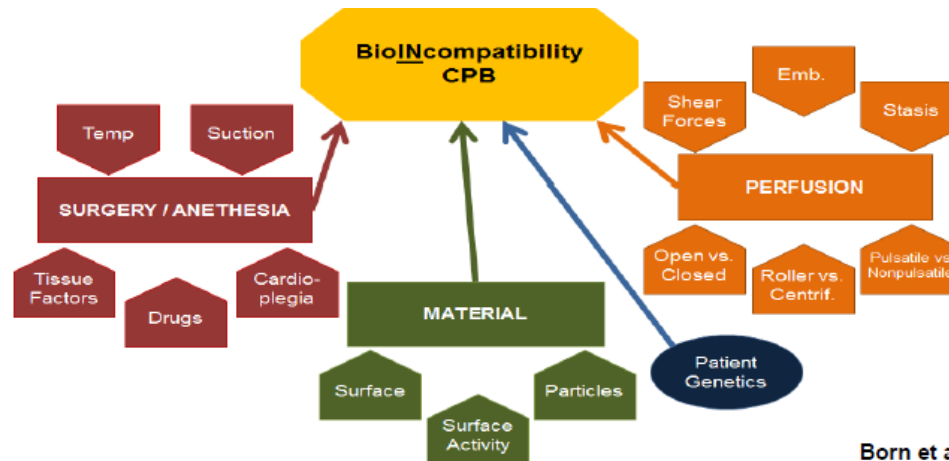
Cooper University Hospital

Univ of Kentucky School of Medicine

Univ of Kentucky School of Medicine

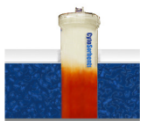


Inflammation in Cardiopulmonary Bypass



Born et al., Kardiotechnik 2014 2/2014

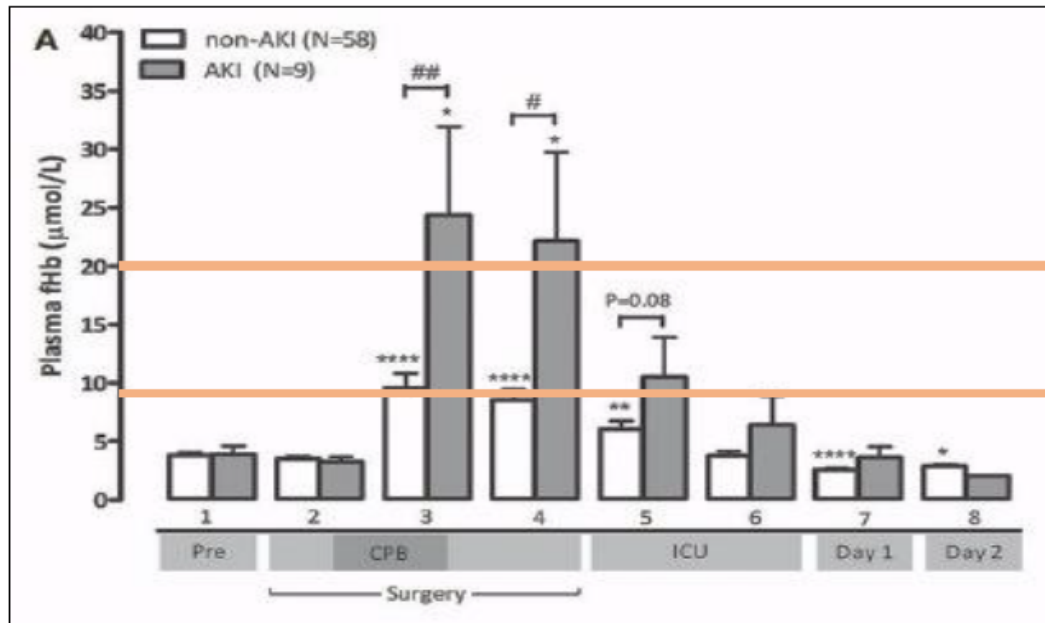
- **Hemolysis and release of plasma free hemoglobin**
Cardiotomy suction, shear, blood transfusions
- **Activation of complement (C3a, C5a)**
Blood contact with air and artificial surfaces
- **Cytokine generation**
Surgery, ischemia-reperfusion injury, endotoxin



Dangers of Plasma Free Hemoglobin (pfHb)

- **Depletes nitric oxide (NO):** Pulmonary hypertension, acute kidney injury, intestinal mucosal injury
- **Causes oxygen free radicals:** Vascular endothelial injury
- **Causes pigment nephropathy:** Renal tubule injury

pfHb is correlated to the development of AKI

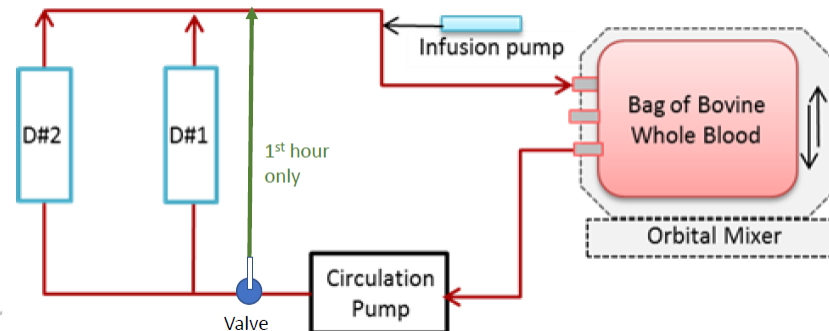
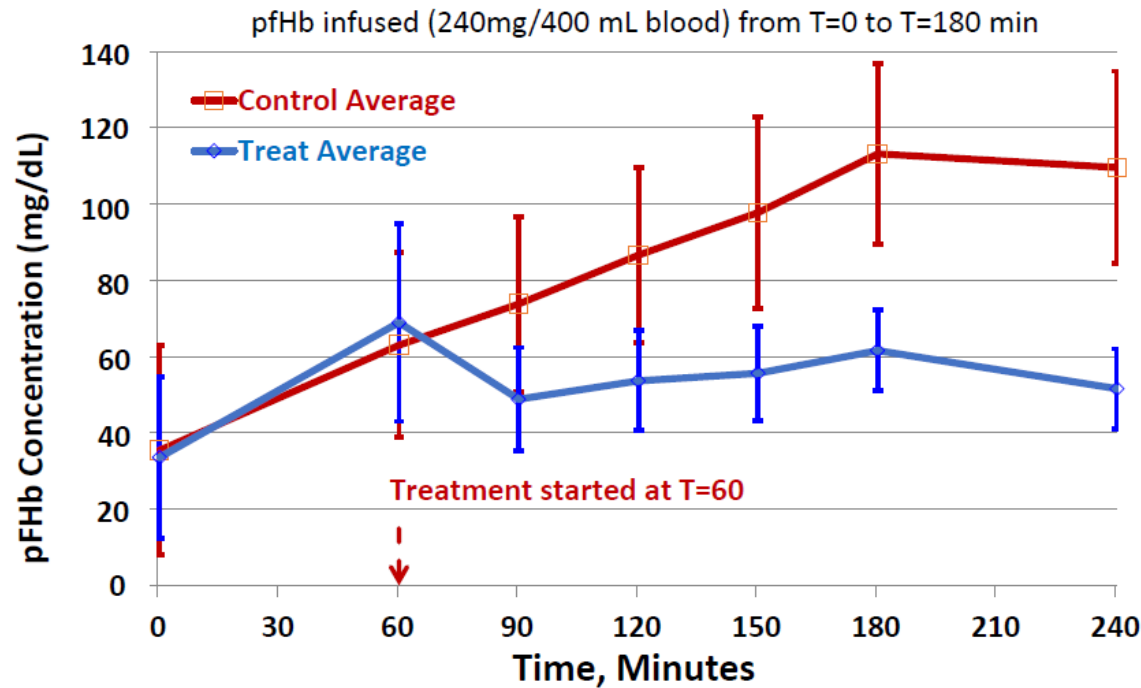


Windsant ICV, et al., Frontiers in Physiology, 2014, 5:340



In vitro modeling of pfHb reduction

In vitro pfHb removal from bovine whole blood using dual CytoSorb cartridges



Study Design: Prospective, Open Label RCT

Randomization (on day of surgery):

- Control: Standard of Care
- Treatment: Standard of care + dual 300 mL CytoSorb cartridges

Inclusion Criteria

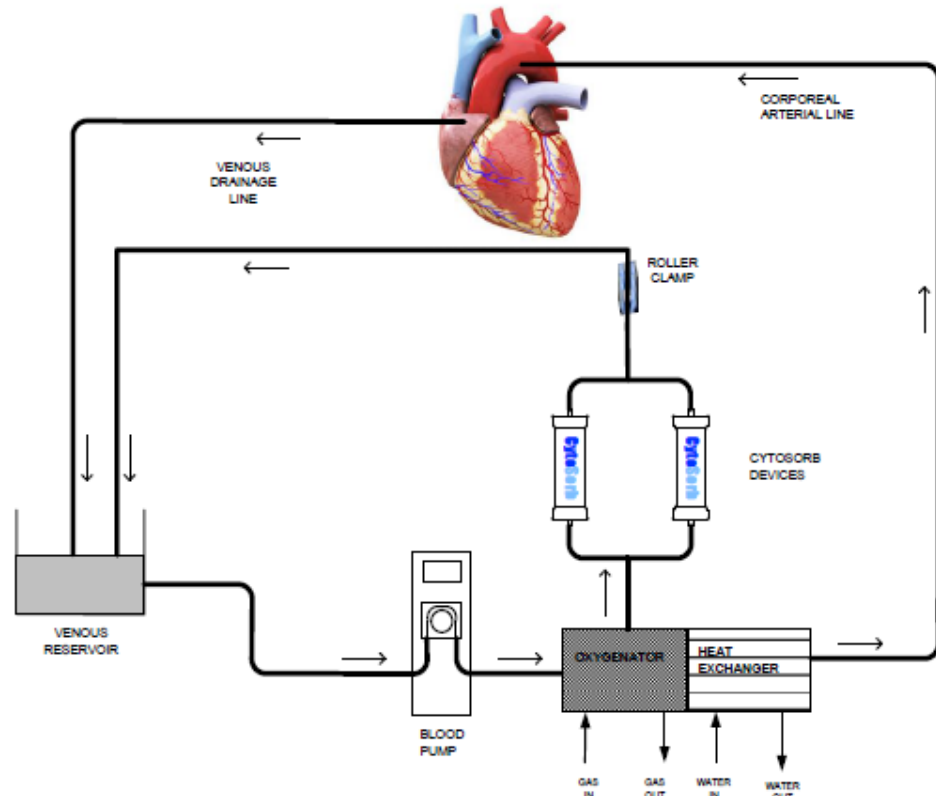
- 18 – 80 years of age
- Elective, non-emergent complex cardiac surgery with CPB
- Anticipated duration of cardiopulmonary bypass ≥ 3 hours

Exclusion Criteria

- CABG only, Single Valve procedures, Cardiac Transplant, LVAD
- End-stage organ failure or near-term death
- Contraindications: PLT < 20,000/uL, active infection, BMI < 18

Treatment Procedure During CPB

**Dual 300 ml
CytoSorb devices**



Configured in parallel circuit between oxygenator and reservoir

- Target 600 mL/min total blood flow monitored by Transonic flow meters
- Initiated 1 hour after start of CPB and stopped at end of CPB
- ≥ 3 hours CPB expected



Enrollment/Patient Population

- **52** Patients enrolled (informed consent)
- **49** Randomized (**3** withdrew consent prior to surgery)
 - **Safety Population** (All **46** who underwent surgery)
 - Control = **23**; CytoSorb = **23**
 - **Efficacy Population** (**38** patients with valid pfHb)
 - Control = **20**; CytoSorb = **18**

Safety summaries based on the Safety Population

PfHb analysis based on the Efficacy Population

Safety Demographics

Treatment groups were similar with the exception of smoking and gender

	Safety Population		P-value
	Control N = 23	CytoSorb N = 23	
Age (mean± std)	61 ± 17	66 ± 8	0.20†
BMI (mean± std)	29 ± 7	28 ± 4	0.29†
Gender (Male)	78%(18/23)	56% (13/23)	0.21‡
Hispanic	4% (1/23)	0%	1.00‡
Current Smoker	9% (2/23)	30% (7/23)	0.13‡

† T-test

‡ Fisher's Exact Test

Peak pfHb during cardiac surgery

Most patients had multiple procedures during surgery

75% Control vs. **89%** CytoSorb

	Control (N=23)	CytoSorb (N=23)
Aortic Reconstruction	65%	56%
Valve Replacement	48%	56%
CABG	26%	35%
Valve Repair	22%	22%
Congenital Defect Repair	9%	0%

Control group only: Peak PfHb in Different Surgical Procedures (mg/dL)

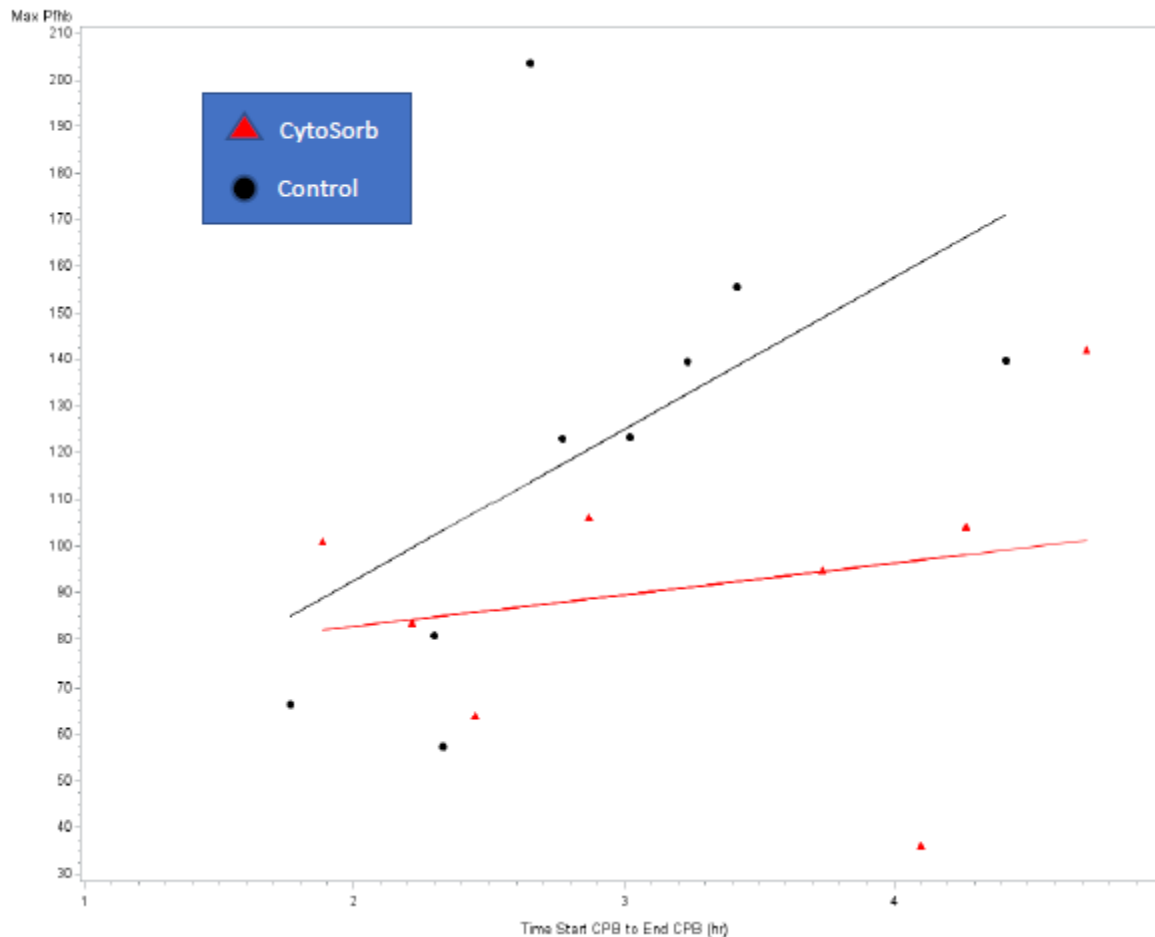
Procedure	N	Mean	Std	Median	Min	Max
All	20	104.0	58.54	101	23	245
Valve Replacement	9	121.0	46.57	123	57	204
Non-valve Replacement	11	90.1	65.60	61	23	246

CPB Length (median control): 2.8h (Valve) vs 4.0h (Non-valve), p=0.03



Valve Replacement pfHb Reduction

Observed and Predicted pfHb (mg/dL) values by length CPB (hr)



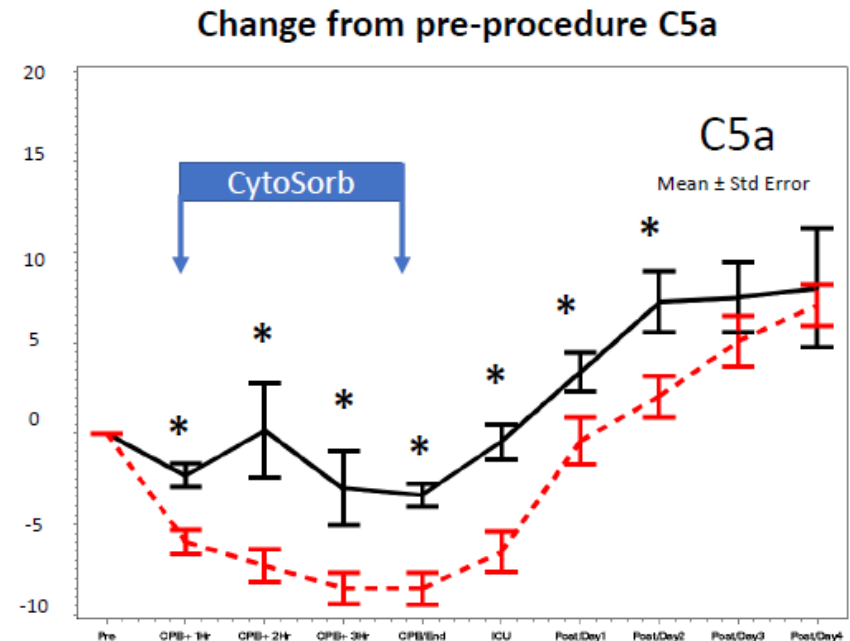
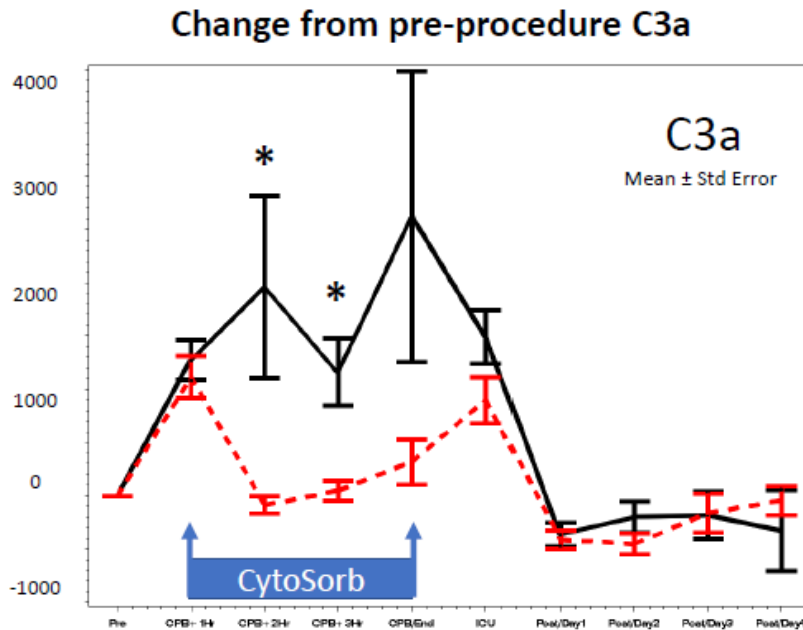
- Among cases CPB \leq 5h, significant reduction in pfHb was achieved by CytoSorb

CPB Length	Mean Reduction of pfHb (mg/dL)	P-value
3.0	35 mg/dL	0.09
3.5	48 mg/dL	0.05
4.0	61 mg/dL	0.05
4.5	74 mg/dL	0.07



Activated Complement C3a and C5a Reduction

- Significant reductions in C3a & C5a during surgery
- C5a reduction sustained through ICU Stay



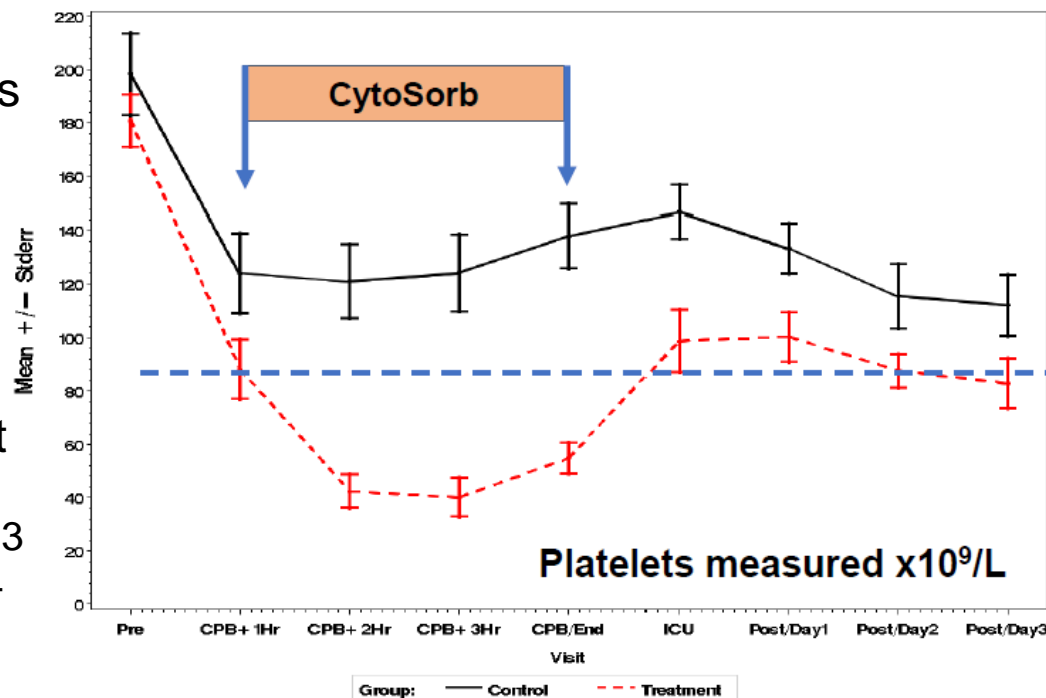
* $p \leq 0.05$



Adverse Events

	Control (N = 23)	CytoSorb (N = 23)
Total Number AEs	137	121
Total Number SAEs	43	44
Mortality	1 (4.3%)	2 (8.7%)
Device Related AEs		2

- Coagulation parameters and bleeding complications were not significantly different post-operatively
- Differences in median transfusions from surgery through ICU not significant
 - pRBCs: 1 v 1 control, $p=0.15$
 - Platelets: 2 v 1 control, $p=0.13$
 - Plasma: 1 v 0 control, $p=0.14$



REFRESH I Summary and Next Steps



- pfHb was related to CPB length and procedure type
- pfHb was highest in high cardiectomy suction and complex cases like valve replacement, where CytoSorb significantly reduced pfHb and activated complement
- No differences in rates of AEs or SAEs between groups
- Treatment caused transient thrombocytopenia during CPB

REFRESH 2

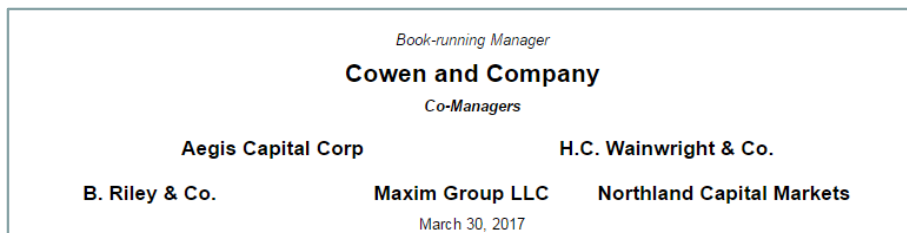
- Compare CytoSorb vs control in larger study enriched for high hemolysis, high pfHb cases like valve replacement
- Correlate reduction in pfHb and activated complement with reduced organ dysfunction such as AKI, stroke risk, respiratory dysfunction (vent time), others
- Confirm safety and risk/benefit of treatment

Building for Success



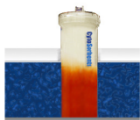
Financing and Investor Relations

- Completed an \$11.5M equity financing with Cowen & Co, one of the leading mid-tier healthcare investment banks in the U.S., and existing investment banking syndicate
- Strengthened balance sheet enabling us to fund our commercial expansion and clinical trial strategy
- Gained support from Cowen and interest from other leading mid-tier healthcare investment banks
- Met with a large number of fundamental investors that form the base from which we plan to grow institutional sponsorship and drive liquidity of the stock
- Represents another example of our growth and standing in the investment community
- Finalizing evaluation of well known IR firms with goal of starting new program soon targeting institutional and retail investors



Gearing up Clinical Infrastructure

- Plan to initiate the U.S. REFRESH 2 Trial later this year, pending FDA approval
- We are also planning other smaller company sponsored RCTs in different areas including sepsis at modest cost
- Currently in process of bringing in key hires expected by summer



Numerous Clinical Studies Being Published

ACCEPTED

- Breakthrough publication on 22 patients in refractory septic shock
 - Unexpectedly high shock reversal rate and much improved survival vs historical
- Biggest endocarditis case series to date in cardiac surgery (39 patients)
 - Improved stability and very good safety and feasibility
- First review article on use of CytoSorb in septic shock
 - Summarizes the positive clinical results so far while confirming safety

PUBLISHED

- Case series on septic shock patients
 - Improved outcome (survival); earlier CytoSorb therapy increases therapeutic success
- Largest animal sepsis study to date
 - Improved cardiac function and increased survival in septic rats with CytoSorb treatment

PENDING

- REFRESH I trial
- Interim analysis of International CytoSorb Registry in ~200 patients
- 30 patient case series in septic shock
- Case reports on antidepressant intoxication treatment, toxic shock syndrome, and many others



Please visit [CytoSorb.com](https://www.CytoSorb.com) under “Case of the Week”



Launch of New Therapeutic-ECMO Kit

- Respiratory failure is often caused by excessive inflammation causing capillary leak syndrome in the lungs – “drowning from inside out”
- Mechanical ventilation for respiratory failure is dangerous: oxygen toxicity, pressure and volume trauma on lungs, complications like ventilator acquired pneumonia, pneumothorax, and ventilator dependence
- Extracorporeal membrane oxygenation (ECMO) is a supportive care therapy that is increasing in popularity as an alternative to mechanical ventilation as a way to provide gas exchange, and sometimes hemodynamic support, in critically-ill patients
- ECMO is typically used as a rescue therapy for those failing mechanical ventilation
- Both standard mechanical ventilation and ECMO do not directly address the underlying cause of disease, only helping keep the patient alive
- Therapeutic-ECMO, or the combination of ECMO with CytoSorb, has been used reduce cytokines and other inflammatory mediators in 1,000+ treatments as a lung-preservation strategy for gas exchange. We are now launching a specific ECMO kit enabling safe and rapid connection of CytoSorb to ECMO

Manufacturing

- Original goal was to re-site manufacturing to a new business facility
- Have now secured new space at our current complex allowing us to expand our scaled up manufacturing at a fraction of the cost (<20%) of a new facility by leveraging our existing infrastructure
- Will quadruple our production capability in two phases to approximately \$80M in revenue
- We have already begun buildout of the space and placed orders for much of the capital equipment
- Expect the site to be validated and operational by early 2018

CytoSorb®

SIRS and Sepsis: Regain Control!



CytoSorbents

Working to Save Lives Through Blood Purification

Q&A Session

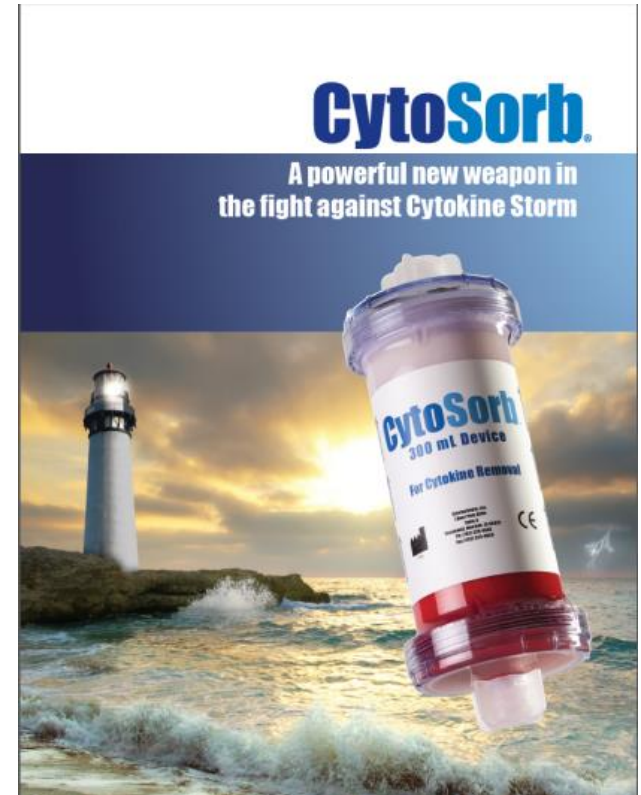
CytoSorbents Corporation

NASDAQ: CTSO

Phillip P. Chan, MD, PhD - CEO
7 Deer Park Drive, Suite K
Monmouth Junction, NJ 08852
pchan@cytosorbents.com



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