

# CytoSorbents Corporation

NASDAQ: CTSO

Working to Save Lives  
Through Blood Purification  
Cantor Fitzgerald Healthcare Conference  
July 13, 2016



# 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 9, 2016 and other reports and documents filed from time to time by us, which are available online at [www.sec.gov](http://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



# CytoSorbents At a Glance

- NASDAQ-traded (CTSO): Fully-diluted market cap of ~\$140M
- International footprint across two wholly-owned operating subsidiaries
  - CytoSorbents Medical, Inc - Monmouth Junction, NJ
    - Headquarters, ISO 13485 manufacturing, QA/QC, R&D
  - CytoSorbents Europe GmbH: International sales office - Berlin, Germany
    - CytoSorbents Switzerland GmbH
- Flagship product, CytoSorb® is E.U. approved, distributed in 37 countries
- Strategic Partnerships with Fresenius Medical Care and Biocon Ltd
- Strong government support with \$17M+ in grants and contracts
- 67 employees and consultants
- Pursuing U.S. approval of CytoSorb® in cardiac surgery via REFRESH I & II
- ~\$9M in cash at the end of Q2 2016
- Expecting acceleration of growth outside the U.S. this year with record trailing 12-month sales of \$4.9M and gross margins of 62%



# Leadership Background



## **Phillip Chan, MD, PhD – Chief Executive Officer and President**

Former Partner at the \$80M NJTC Venture Fund, leading life science investments for 5 years. Co-founder of Andrew Technologies, commercializing its HydraSolve™ lipoplasty device in the U.S. MD/PhD from Yale School of Medicine, internal medical residency at the Beth Israel Deaconess Medical Center at Harvard.



## **Vincent Capponi, MS - Chief Operating Officer**

20+ years experience in the medical device, pharmaceutical and imaging fields. Led the first regulatory approval for the heparin flush syringe, used worldwide in hospitals, and managed manufacturing of > 1 million units/week



## **Kathleen Bloch, MBA, CPA – Chief Financial Officer**

20+ years as CFO of private and public companies. Former Laureate Biopharma CFO, a contract biopharmaceutical manufacturer, and CFO of Silverline Windows, a \$750M revenue window manufacturing company with 9 manufacturing plants nationally



## **Robert Bartlett, MD - Chief Medical Officer**

World-renowned pioneer of extracorporeal membrane oxygenation therapy (ECMO) – used worldwide in ICUs in refractory lung failure. Former Director of the Surgical Intensive Care Unit at University of Michigan, with extensive experience in cardiothoracic surgery and critical care medicine including the treatment of sepsis



## **Christian Steiner, MD – Vice President of Sales and Marketing**

15+ years experience in sales and marketing of extracorporeal therapy and critical care sales at Teraklin for MARS, the first liver failure dialysis technology, and at Pulsion Medical (hemodynamic monitoring)



## **Christopher Cramer, MS, MBA – Vice President of Business Development**

15+ years experience in business development and commercial experience. Former Senior Director of New Venture Development at Johnson & Johnson, and previously at PwC Consulting



# Severe Inflammation: Deadly in the ICU

Millions worldwide admitted to the intensive care unit annually with deadly inflammatory conditions

Sepsis

Burn Injury

Trauma

Pancreatitis

Influenza

Surgical

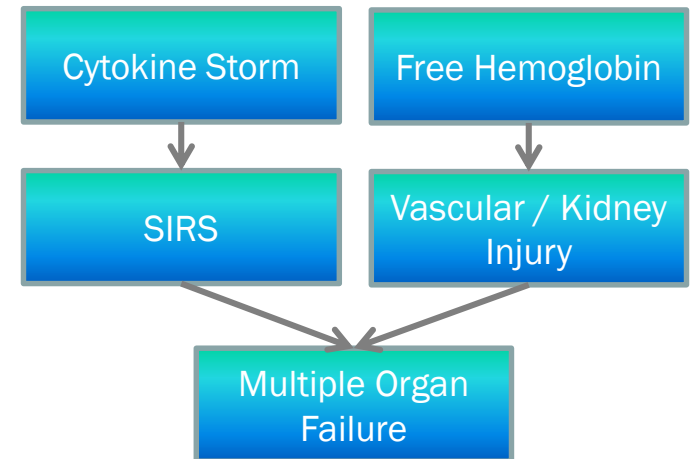
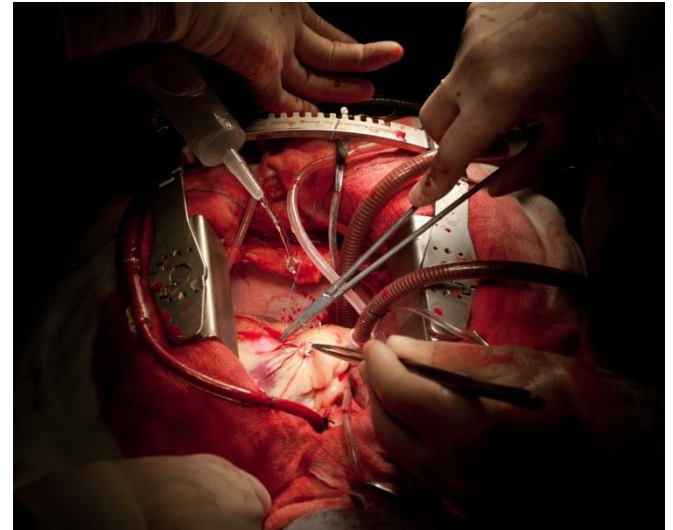
Cancer Immuno-Tx



- In these conditions, little exists to reduce the inflammation and actively help patients get better. Rather, patients often need to be kept alive with machines called “life support”, with the hope that their bodies heal on their own over time
- Without “active” therapies, patients linger at a cost of \$2,000-3,000 a day\* with a risk of death of 1 in every 3 patients
- Critical care costs approximately \$80-90 billion in the U.S. alone, or ~1% of the GDP

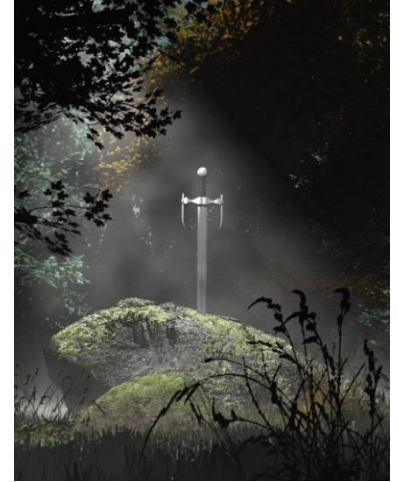
# Inflammation: Dangerous in Cardiac Surgery

- ~1.5M Open Heart Surgeries performed globally
  - Coronary artery bypass graft surgery
  - Valve repair or replacement
  - Heart or lung transplantation
  - Congenital defect repair
  - Aortic reconstruction
- Complex cardiac surgeries require extended surgical times on the heart-lung machine, resulting in increased destruction of blood cells, production of toxic free hemoglobin, cytokines, and other inflammatory substances that can trigger severe inflammation
- The result is frequently organ dysfunction and failure, particularly cardiovascular, lung and kidney failure



# Cytokines Fuel the Fire of Inflammation

- Cytokines are small proteins that normally help stimulate and regulate the immune system and control inflammation
- Cytokines are a dual edged sword
  - They are required for proper immune system function
  - However, in mild to moderate excess, cytokines can cause or exacerbate disease (e.g. autoimmune diseases)
- But cytokines in vast excess, called “cytokine storm” can lead to a massive uncontrolled systemic inflammatory response syndrome (SIRS).





# Massive Inflammation Causes Organ Failure

Organ failure occurs when vital organs stop working,  
causing nearly half of all deaths in the ICU.



Little can be done to prevent or treat it today



**CytoSorbents**  
Working to Save Lives Through Blood Purification

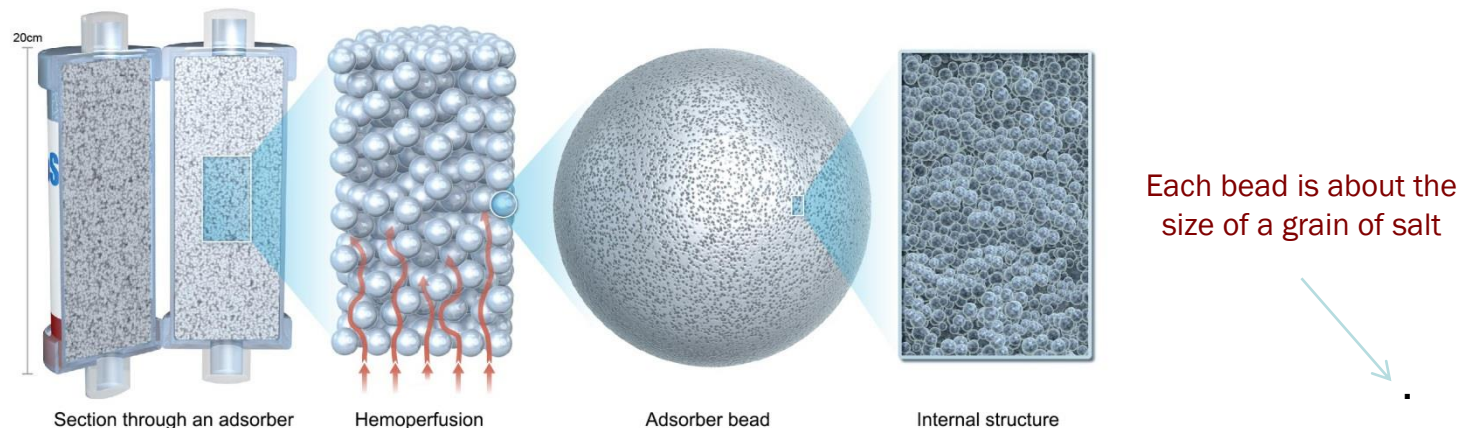
# CytoSorb® Removes the Fuel to the Fire

- Targets \$20+ billion opportunity in critical care and cardiac surgery
- European Union approved as the only specific cytokine filter for elevated cytokines
- Clinically proven to remove key cytokines in blood of critically-ill patients
- Removes many other inflammatory mediators such as free hemoglobin, bacterial toxins, and bilirubin
- Safe and well-tolerated: In 12,000+ human treatments, most in critically-ill patients and more than 2,000 treatments during open heart surgery



# Powerful Blood Purification Technology

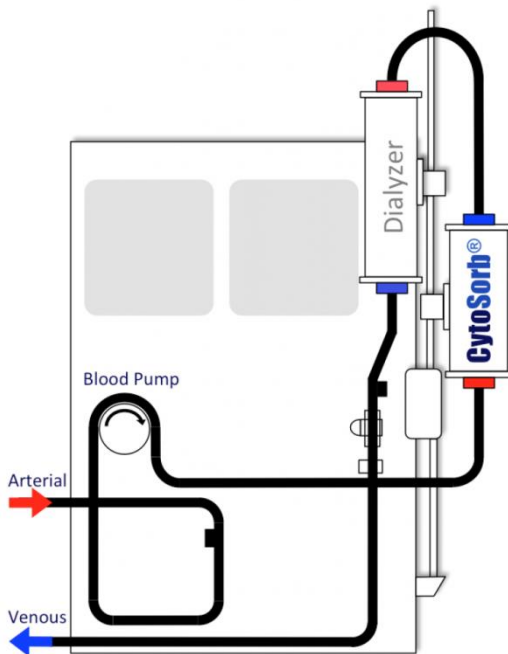
The underlying blood purification technology is based on biocompatible, highly porous polymer beads that act like tiny sponges to remove harmful substances from blood



- Protected by 32 issued US patents and multiple applications pending
- Manufactured at our ISO 13485 certified facility in New Jersey
- One of the highest grade medical sorbents on medical market today

# CytoSorb<sup>®</sup> is Plug and Play with Existing Machines

## Easy to Use, No Special Equipment or Training Required

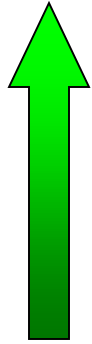


- Place a temporary dialysis catheter in a major vein
- Connect the device to a standard dialysis machines found in hospitals worldwide
- Pump blood out of the body and through the cartridge
- The polymer beads directly contact blood and remove unwanted or toxic substances
- “Purified” blood is pumped back into the patient
- Can treat 70+ total blood volumes per 24 hr treatment
- Each treatment uses a new cartridge

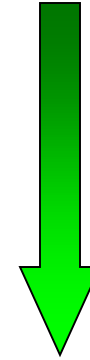




# Goal: To Prevent or Treat Organ Failure

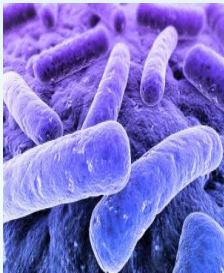


Improve  
Patient  
Outcome  
and  
Survival

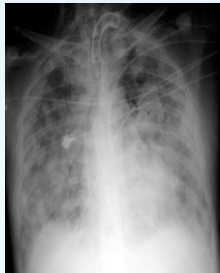


Decrease  
Costs Of  
ICU and  
Patient  
Care

Sepsis



ARDS



Burn Injury



Trauma



Pancreatitis



Influenza



Surgical



The Potential to Revolutionize Critical Care Medicine



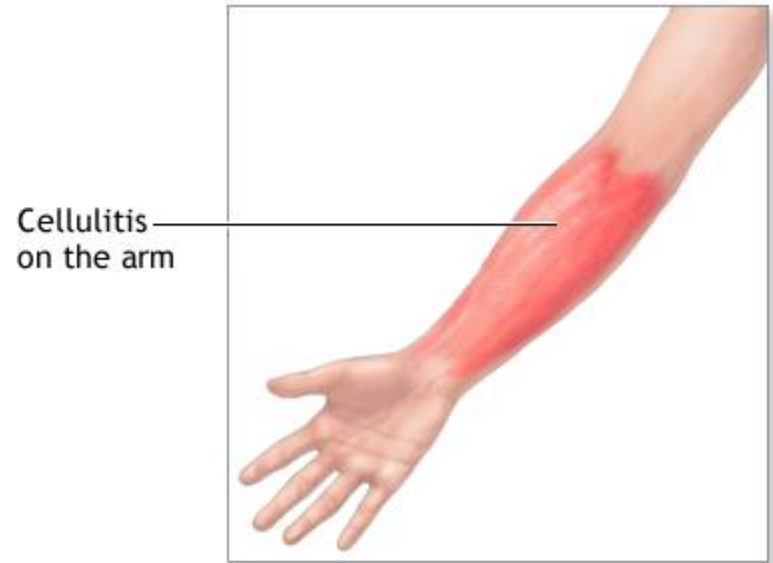
**CytoSorbents**

Working to Save Lives Through Blood Purification



# Case Report: Necrotizing Fasciitis

- A 19-year old man developed a painful infection on his right hand and was rushed to a hospital with high fever and malaise
- Started on broad spectrum antibiotics for a suspected deep infection in the carpal tunnel
- Rapid onset of multi-organ failure with shock, kidney dysfunction and respiratory failure with infection quickly spreading up his arm
- Extensive surgical debridement confirmed beta-hemolytic Streptococcal infection, but conditioned worsened requiring increasing vasopressors and CRRT for kidney failure
- Failing therapy, CytoSorb was started. After first treatment, blood pressure significantly improved and after two treatments, vasopressors were reduced by 90% and IL-6 declined from 2,300 pg/mL to 36 pg/mL



- Renal function returned after the second CytoSorb treatment and mechanical ventilation was weaned 4 days later
- Patient recovered and amputation of his arm was avoided

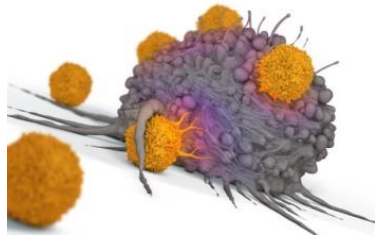


# \$17+ Million in US Government Support

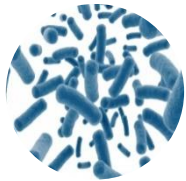
- DARPA awarded \$3.8M five year (2012-present) contract as part of “Dialysis-Like Therapeutics” program to treat sepsis by removing cytokines and pathogen-derived toxins
- U.S. Army awarded ~\$1.2M SBIR contracts for trauma and burn injury research (2011-present)
- U.S. Air Force funding a 30-patient human pilot study (~\$3M) in trauma (2013-present); FDA approved trial
- US Dept of Health and Human Services awarded \$0.5M grant (2010) for therapies that can save lives and reduce costs under the QTDP Program
- NIH grant awarded \$7M five year (2006-2010) to University of Pittsburgh and Dr. John Kellum to research CytoSorb bead for treatment of sepsis
- NIH/NHLBI awarded \$1.7M Phase I & II SBIR contracts to advance HemoDefend purification technology with the goal of improving the quality and safety of blood transfusions (2013- present)
- JPEO-CBD awarded \$150K Phase I SBIR for fungal mycotoxin removal



# The World Needs **CytoSorb®**

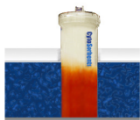
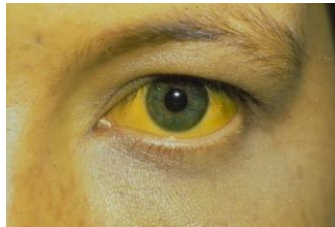
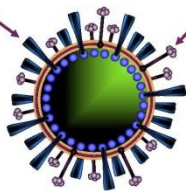


## H1N1



H5

N1



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# Key Catalyst #1:

## Drive CytoSorb Revenues





# CytoSorb® An Excellent Business Model

- **Huge market**

Sold to hospitals & critical care doctors. Targets “need to have” life-or-death scenarios

- **Little to no competition**

- **Critical care physicians understand the problem**

- **Plug and play, high margin, disposable “razorblade”**

Hospital’s existing hemodialysis infrastructure is the “razor”, no new hardware

- **Technicians already know how to use the device**

- **Hospitals in Germany/Austria pay for the device and then receive reimbursement**

Depending on the application and devices used, revenue potential per patient ~\$1-5K

- **Affordable yet profitable with blended gross margins of 60+%, target > 80%**

- **Highly centralized intensive care units easy for small sales force to access**





# Direct Sales: Germany, Austria, Switzerland

CytoSorbents' direct sales force focused on most major university and public hospitals in Germany, Austria and Switzerland. German market alone is \$1.0-1.5 billion



**Dr. Christian Steiner, MD**  
Vice President – Sales and Marketing and General Manager  
CytoSorbents Europe GmbH



**Stefan M. Baudis**  
International Sales Director



**Dr. Joerg Scheier, MD**  
European Medical Director



**Dr. Volker Humbert, MD**  
Director – Clinical Affairs



**Dominik Gutzler**  
Head of Product Management



**Dr. Rainer Kosanke, PhD**  
Head of Scientific Marketing



**Alexandru Bojan**  
Business Manager Export



**Hans-Juergen Kraus**  
Regional Sales Manager  
Southern Germany



**Matthias Hoeldtke**  
Regional Sales Manager  
Southern Germany



**Uwe Gerks**  
Regional Sales Manager  
Northern Germany



**Andreas Gassmann**  
Sales Representative  
Southern Germany



**Christian Koptik**  
Regional Sales Manager  
Austria



**Martin Scherer**  
Regional Sales Manager  
Southwest Germany



**Andreas Hendler**  
Regional Sales Manager  
Western Germany



**Steffen Martens**  
Regional Sales Manager  
Northeast Germany



**Oliver Lupoli**  
Country Sales Manager  
Switzerland



**Harriet Adamson**  
Clinical Study Manager



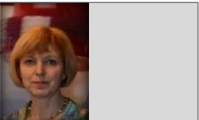
**Eva Wechsler**  
Application Specialist



**Ilona Otto**  
Sales Assistant/Customer Support  
Direct



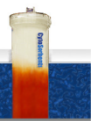
**Petra Hoffman**  
Sales Assistant/Customer Support  
International



**Anke Applehoff**  
Application Specialist



**Franziska Preissing**  
Reimbursement Manager



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# CytoSorb® Distributed in 37 Countries

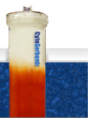


IntensivMed



TekMed

WMC



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# Geographic Expansion – A Growth Engine

January 2016

Contributing to Revenue			Not Yet Contributing to Revenue		
#	Country	Population (M)	#	Country	Population (M)
1	Germany	81	16	France	66
2	Austria	9	17	Poland	39
3	Switzerland	8	18	Sweden	10
4	United Kingdom	64	19	Denmark	6
5	Italy	60	20	Norway	5
6	Turkey	75	21	Finland	5
7	India	1,200	22	Russia	144
8	Sri Lanka	21	23	UAE	9
9	Netherlands	17	24	Qatar	2
10	Romania	20	25	Kuwait	3
11	Ireland	5	26	Oman	4
12	Moldova	4	27	Bahrain	1
13	Australia	23	28	Iraq	33
14	New Zealand	5	29	Jordan	7
15	Saudi Arabia	29	30	Yemen	24
			31	Vietnam	90
			32	Israel	8
Total		1,621	Total		456

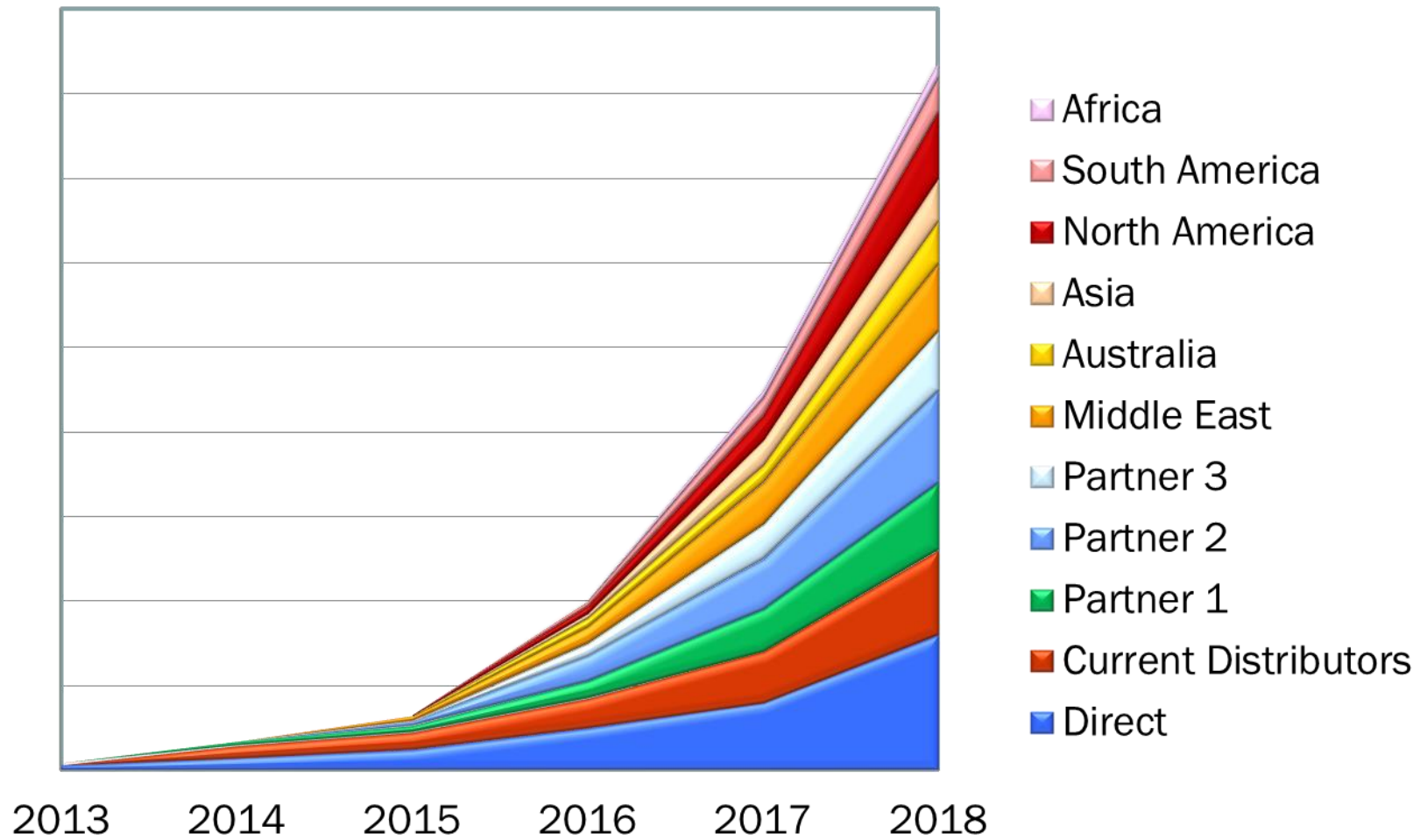
July 2016

Contributing to Revenue			Not Yet Contributing to Revenue		
#	Country	Population (M)	#	Country	Population (M)
1	Germany	81	29	UAE	9
2	Austria	9	30	Qatar	2
3	Switzerland	8	31	Kuwait	3
4	United Kingdom	64	32	Oman	4
5	Italy	60	33	Bahrain	1
6	Turkey	75	34	Iraq	33
7	India	1,200	35	Jordan	7
8	Sri Lanka	21	36	Yemen	24
9	Netherlands	17	37	Israel	8
10	Romania	20			
11	Ireland	5			
12	Moldova	4			
13	Australia	23			
14	New Zealand	5			
15	Saudi Arabia	29			
16	France	66			
17	Poland	39			
18	Sweden	10			
19	Denmark	6			
20	Norway	5			
21	Finland	5			
22	Russia	144			
23	Spain	46			
24	Portugal	10			
25	Vietnam	90			
26	Hungary	10			
27	Czech Republic	11			
28	Slovakia	5			
Total		2,068	Total		91

We continue to add new and existing distributors into the “contributing to revenue” category  
Canada coming on-line soon and many other countries

# Growth Driven by Direct, Distributor, Partner Sales

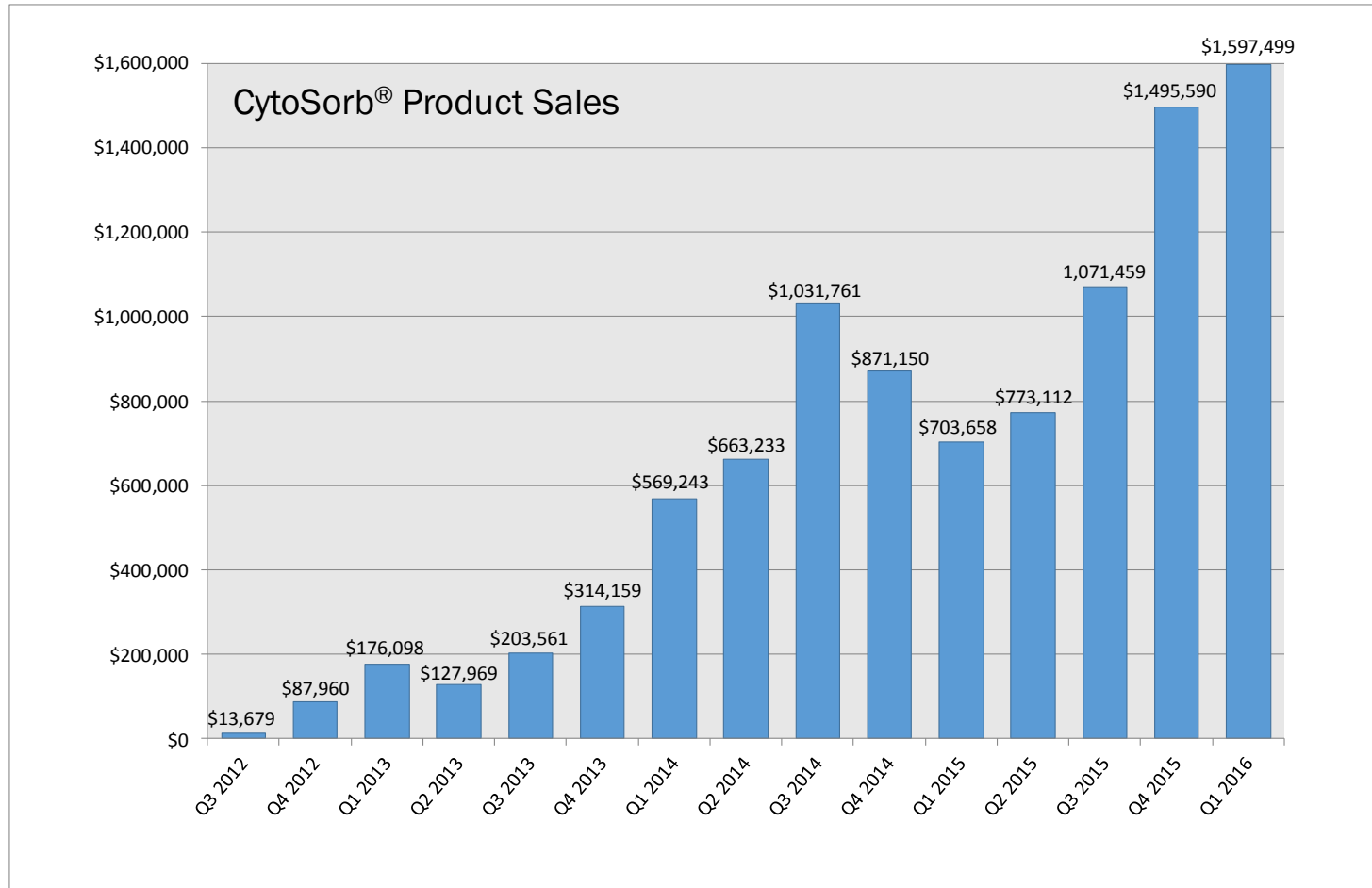
## Theoretical Revenue Growth Based on Layering\*



\* This graph is provided only to demonstrate the concept of revenue layering. It does NOT represent revenue forecasts or guidance

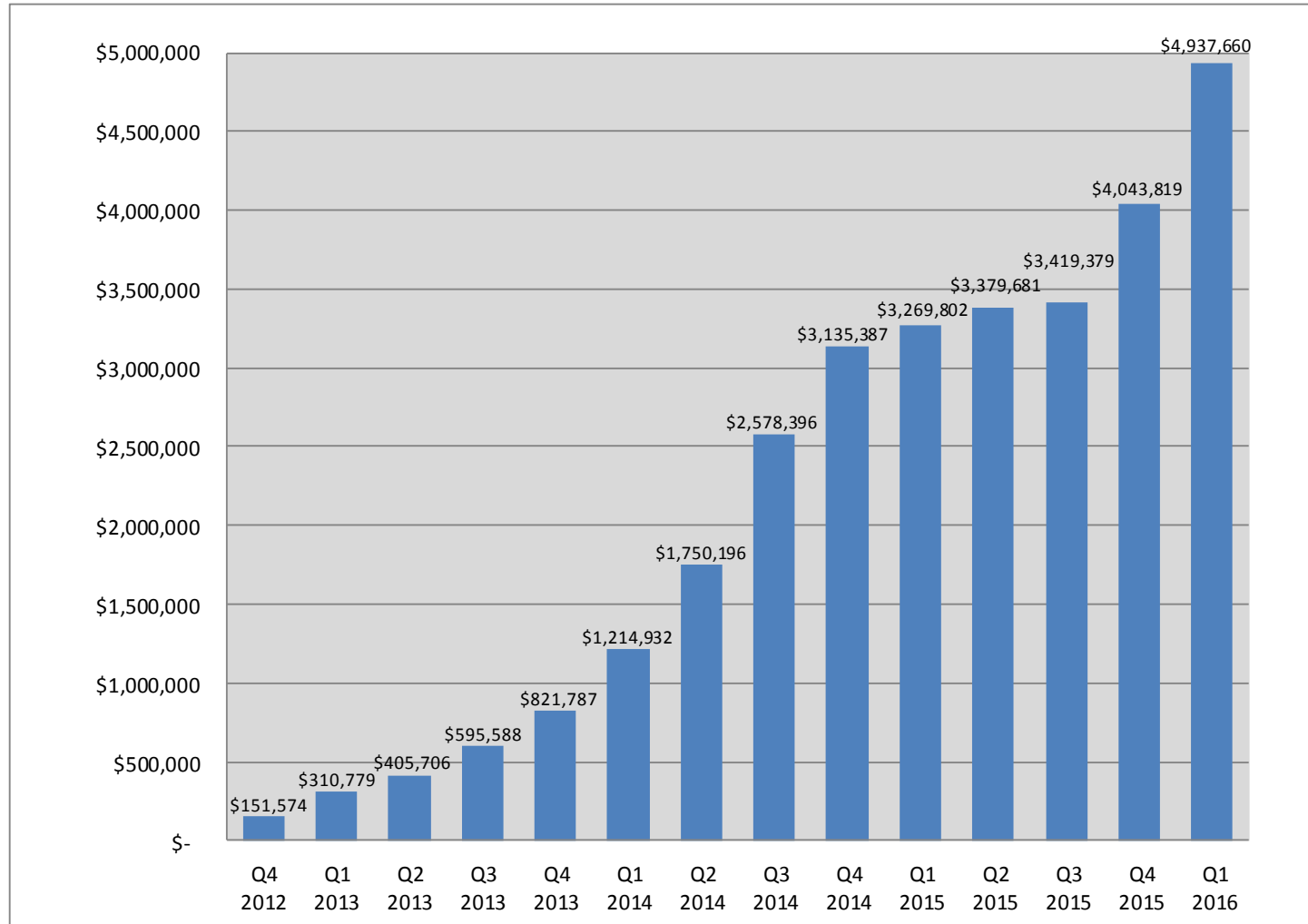
# Quarterly Product Sales

Fourth Consecutive quarter of product sales growth  
Third consecutive quarter of record sales





# Trailing Twelve Months Product Sales

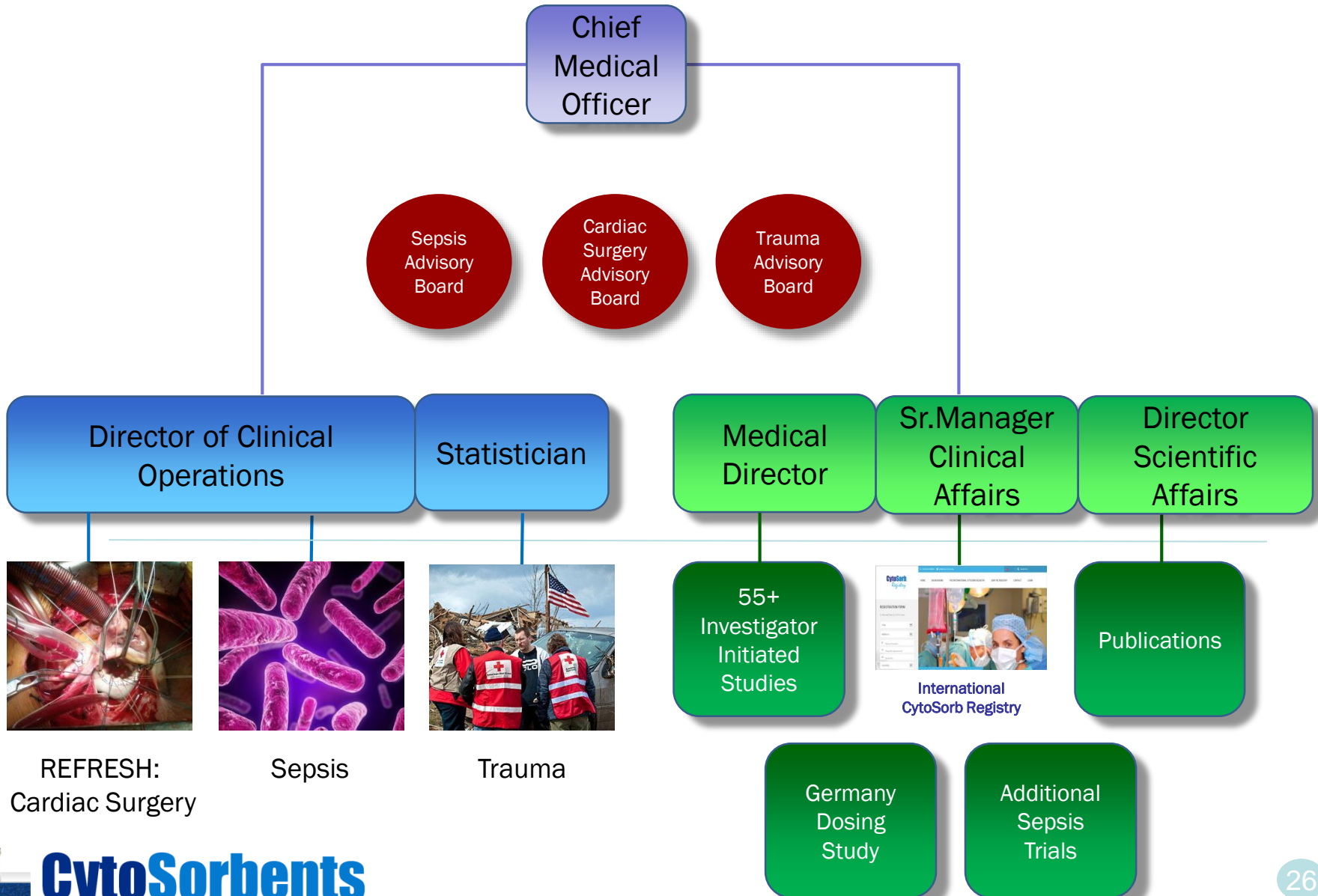


## Key Catalyst #2:

Drive Clinical Data to Support  
CytoSorb As Standard of Care



# Robust Clinical Program and Team



REFRESH:  
Cardiac Surgery

Sepsis

Trauma

55+  
Investigator  
Initiated  
Studies

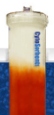


International  
CytoSorb Registry

Publications


Germany  
Dosing  
Study

Additional  
Sepsis  
Trials



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# Many Published Peer-Reviewed Articles



**CytoSorb®**

Case Series  
and Case Reports

**Systemic Inflammatory Response Syndrome in Heart Surgery: New possibilities for treatment through the use of a cytokine adsorber during ECC?**

F. Bern, M. Pichlmair, S. Peters, N. Khalaf, C. Hagl  
Herzchirurgische Klinik und Poliklinik  
an der LMU München Campus Großhadern  
Hartmannstr. 13, D-80539 München  
(Direktor: Prof. Dr. med. Christian Hagl)

DOI: 10.5005/jao.50003115

**Septic shock secondary to  $\beta$ -hemolytic streptococcus-induced necrotizing fasciitis treated with a novel cytokine adsorption therapy**

Hubert Hetz<sup>1</sup>, Reinhard Berger<sup>1</sup>, Peter Recknagel<sup>1</sup>, Heinz Steltzer<sup>1</sup>

Int J Artif Organs 2014;37 (03): 000-000

SHORT COMMUNICATION

**Improvement of Hemodynamic and Inflammatory Parameters by Combined Hemoadsorption and Hemodiafiltration in Septic Shock: A Case Report**

Steffen R. Mitzner<sup>a</sup>, Martin Gloger<sup>b</sup>, Jörg Henschel<sup>b</sup>, Sebastian Koball<sup>a</sup>

Blood Purif 2013;35:314-315  
DOI: 10.1159/000351206

Published online: July 31, 2014

**First successful combination of ECMO with cytokine removal therapy in cardiogenic septic shock: a case report**

Frank Bruenger<sup>a</sup>, Lukas Kizner<sup>a</sup>, Jan Welle<sup>a</sup>, Michael Morshuis<sup>a</sup>, Jan F. Gommert<sup>a</sup>

Int J Artif Organs 2015; 00(00): 000-000  
DOI: 10.5301/ijao.50000382

ISSN 0391-3988

SHORT COMMUNICATION

**Cytosorb™ in a Patient with Legionella-Pneumonia Associated Rhabdomyolysis: A Case Report**

Marion Wiegeler and Claus G. Krenn

ASAIO Journal 2015

**IJAO**

Int J Artif Organs 2015; 00(00): 000-000  
DOI: 10.5301/ijao.5000429

ISSN 0391-3988

SHORT COMMUNICATION

**CytoSorb, a novel therapeutic approach for patients with septic shock: a case report**

Burkhard Hinze<sup>1</sup>, Oliver Jauch<sup>1</sup>, Toralf Noky<sup>1</sup>, Sigrun Friesecke<sup>2</sup>, Peter Abel<sup>1</sup>, Rolf Kaiser<sup>1</sup>

**Effects of a novel cytokine haemoadsorption system on inflammatory response in septic shock after cephalic pancreatectomy – a case report**

Dana Tomescu<sup>1,4</sup>, Simona O. Dima<sup>2</sup>, Sabina Tănăsescu<sup>1</sup>, Cristiana Pistol Tănase<sup>1</sup>, Anca Năstase<sup>2</sup>, Mihai Popescu<sup>1</sup>

Romanian Journal of Anaesthesia and Intensive Care 2014 Vol 21 No 2, 134-138

**First Description of Single-Pass Albumin Dialysis Combined With Cytokine Adsorption in Fulminant Liver Failure and Hemophagocytic Syndrome Resulting From Generalized Herpes Simplex Virus 1 Infection**

Received September 4, 2014; accepted September 12, 2014.

LETTER FROM THE FRONTLINE

LIVER TRANSPLANTATION 20:1523-1524, 2014

**Early report: The use of Cytosorb™ haemabsorption column as an adjunct in managing severe sepsis: initial experiences, review and recommendations**

Craig Morris<sup>1</sup>, Lewis Gray<sup>2</sup> and Marco Giovannelli<sup>1</sup>

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DOI: 10.1177/1751375715575485  
jics.sagepub.com  
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JICS

**Use of a novel hemoadsorption device for cytokine removal as adjuvant therapy in a patient with septic shock with multi-organ dysfunction: A case study**

Reshma Basu, Sunjay Pathak<sup>1</sup>, Jyoti Goyal<sup>1</sup>, Rajeev Chaudhry<sup>1</sup>, Rati B. Goel<sup>1</sup>, Anil Barwal<sup>1</sup>

Case Report

# Refractory Septic Shock

At the 26<sup>th</sup> Symposium for Intensive Medicine + Critical Care in Bremen, Germany, Dr. Sigrun Friesecke, Senior Intensivist in the Greifswald University Hospital MICU reported on a prospective, single arm study in 22 patients with refractory late-stage septic shock

- Patients had refractory shock despite high doses of vasopressors, respiratory failure requiring mechanical ventilation or ECMO, anuric kidney failure requiring dialysis, and lactate > 8 mmol/L
- A similar population (n=16) receiving standard of care, where shock could not be reversed, also on mechanical ventilation with an initial lactate level of  $6.1 \pm 4$  mmol/L, and 75% requiring renal replacement therapy had a mortality of 100% at 28 days.\*
- Results from the CytoSorb Greifswald Study
  - 28-day survival was 41%, a 30-40% absolute improvement over expected (0-10%)
  - Resolution of shock in 68% of patients treated with CytoSorb
  - Reduction of IL-6 from an initial average of 87,000 pg/mL to below 10,000 pg/mL after 24 hours of treatment

\* Conrad, M., et. al., "Early prediction of norepinephrine dependency and refractory septic shock with a multimodal approach of vascular failure", J Crit Care, 2015; 30:739-743.



# CytoSorb Website – A Wealth of Info

Contact: +49 30 654 99 145 info@cytosorb-therapy.com DE f Search ...

**CytoSorb®**

The Therapy The Studies The Adsorber Customer Service About us

**SIRS and SEPSIS**  
in Cardio-thoracic Surgery

Regain control

**THE THERAPY**  
Facts and background  
information on mode of action

**THE ADSORBER**  
Explanations of the mechanisms  
of action and the practical  
application

**THE FIELDS OF APPLICATION**  
Discussion on current and  
potential applications

**THE STUDIES**  
Current, published and planned  
studies on evidence creation

**CytoSorb** The international CytoSorb registry Universitätsklinikum



**CytoSorbents**

Working to Save Lives Through Blood Purification

Visit us at [www.cytosorb.com](http://www.cytosorb.com)

# 3<sup>rd</sup> International CytoSorb Users Meeting





# CytoSorbents ISICEM Research Symposium



## Key Catalyst #3:

Pursue U.S. Regulatory Approval  
of CytoSorb in Cardiac Surgery

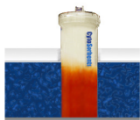


# REFRESH I Trial Update

## REduction in FREe Hemoglobin



- 40-patient, eight-center study evaluating the safety and efficacy of intra-operative use of CytoSorb® in a heart-lung machine during complex cardiac surgery in elective, non-emergent cardiac surgery > 3 hours
  - Aortic reconstruction, CABG redos, multiple valve replacements, etc
- Goal: Safe reduction of plasma-free hemoglobin and other inflammatory mediators that can cause post-operative complications





# REFRESH I Trial Update

## REduction in FREe Hemoglobin Trial



- Working with major cardiac surgery centers
  - Baylor College of Medicine and Texas Heart Institute
  - Baystate Medical Center
  - Columbia University
  - Cooper University Hospital
  - University of Kentucky
  - University of Maryland
  - University of Pennsylvania
  - University of Pittsburgh Medical Center
- DSMB analyzed safety data from the first 24 patients and found no safety concerns
- Final 6 patients left to enroll. Expect to complete enrollment soon with top-line results available in Q3 2016
- Pending the successful completion of REFRESH I and agreement with the FDA, the REFRESH 2 trial is expected to start early next year

## Key Catalyst #4:

Leverage Pipeline to Establish  
Strategic Partnerships



# Beads Enable a Broad and Valuable Pipeline

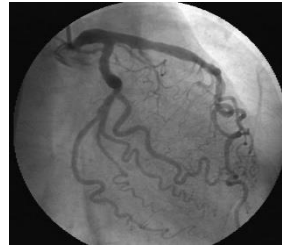


Critical Care, High  
Risk Surgery



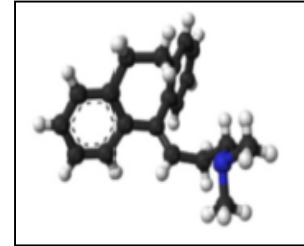
Blood  
Collection &  
Transfusion

**ContrastSorb**



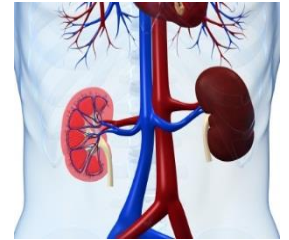
CT Imaging,  
Interventional  
Radiology

**DrugSorb**



Drug Overdose,  
Chemo Removal

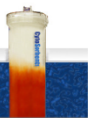
**BetaSorb**



Improving  
Dialysis

CE Mark Approved

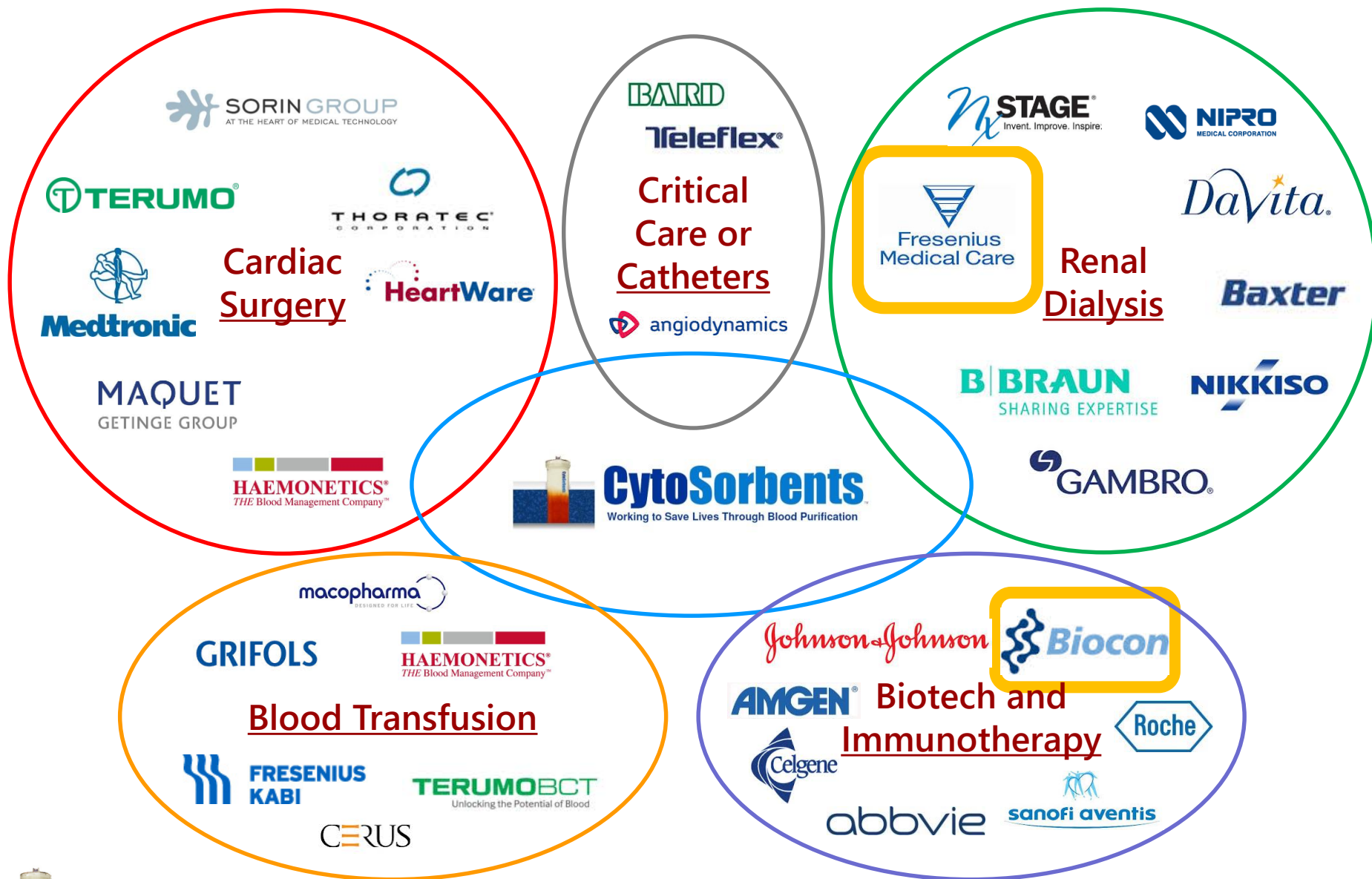
Under Development



**CytoSorbents**

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# Potential for More Partnerships



\*Companies listed here are used simply as examples of companies in these respective verticals. We make no other representations to our relationship with any of these companies.

# Fresenius Medical Care Partnership

- Entered into a multi-year partnership with Fresenius, the world's largest dialysis company, for exclusive distribution of CytoSorb® in critical care in France, Poland, Denmark, Norway, Sweden, and Finland
- CytoSorb® is a key part of Fresenius' growth strategy in critical care
- Fresenius has committed to annual minimum purchases to maintain exclusivity
- Leveraging Fresenius' critical care leadership and industry-leading sales force and distribution
- Potential for broader future synergy and expansion
- In May, Fresenius launched CytoSorb® with a 30-person ICU sales force that is also selling Fresenius products





# **Biocon** Strategic Partnership: Creating the Most Comprehensive Treatment for Sepsis



Treat Primary Infection with  
Antibiotics

Treat Massive  
Inflammatory Response

- Biocon is the largest biotechnology company in India
- Significant growth in India with expansion into Sri Lanka
- Expanded partnership to include co-development and funding of small trials
- Creating a separate sales division to focus specifically on CytoSorb

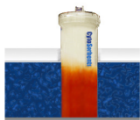


# Key Catalyst #5: Increase Investor Awareness



# NASDAQ Capital Market Listed

- Clean capital structure with good liquidity for investors



# Added to Russell Microcap Index

## CytoSorbents Corporation Set to Join Russell Microcap Index

6/19/15

**CytoSorbents Corporation** (NASDAQ: CTSO), a critical care immunotherapy leader commercializing its CytoSorb® blood purification technology to reduce deadly uncontrolled inflammation in hospitalized patients around the world, is set to join the Russell Microcap® Index at the conclusion of the Russell indexes annual reconstitution on June 26, 2015, according to a [preliminary list of additions](#) posted on June 12, 2015.

Membership in the Russell Microcap Index, which remains in place for one year, means automatic inclusion in the appropriate growth and value style indexes. FTSE Russell determines membership for its Russell indexes primarily by objective, market-capitalization rankings and style attributes.

Dr. Phillip Chan, Chief Executive Officer of CytoSorbents stated, "We are pleased to be included in the Russell Microcap Index, a significant corporate achievement that is expected to increase visibility and exposure of our company and life-saving technology to the broader investment community. This complements our continued institutional investor outreach, where the response has been extremely positive to date."

Russell indexes are widely used by investment managers and institutional investors for index funds and as benchmarks for active investment strategies. Approximately \$5.7 trillion in assets are benchmarked to the Russell's U.S. indexes. Russell Indexes are part of FTSE Russell, a leading global index provider.

For more information on the Russell 1000 and the Russell indexes reconstitution, go to "Recon Central"

June 2015



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# Increase Institutional Ownership

## CytoSorbents™ (NASDAQ: CTSO)

Owner Name	Date	Shares Held	Change (Shares)	Change (%)	Value (in 1,000s)
VANGUARD GROUP INC	03/31/2016	532,261	24,198	4.76	2,369
AMERICAN INTERNATIONAL GROUP INC	03/31/2016	271,045	27,000	11.06	1,206
GEODE CAPITAL MANAGEMENT, LLC	03/31/2016	125,772	(101)	(0.08)	560
RAYMOND JAMES & ASSOCIATES	03/31/2016	77,551	77,551	New	345
SKYLANDS CAPITAL, LLC	03/31/2016	52,500	0	0.00	234
CALIFORNIA PUBLIC EMPLOYEES RETIREMENT SYSTEM	03/31/2016	46,100	0	0.00	205
BLACKROCK FUND ADVISORS	03/31/2016	38,712	(2,884)	(6.93)	172
SUSQUEHANNA INTERNATIONAL GROUP, LLP	03/31/2016	37,797	5,628	17.50	168
BANK OF NEW YORK MELLON CORP	03/31/2016	29,946	11,065	58.60	133
BLACKROCK INSTITUTIONAL TRUST COMPANY, N.A.	03/31/2016	26,460	0	0.00	118
CREDIT SUISSE AG/	03/31/2016	25,527	10,971	75.37	114
NORTHERN TRUST CORP	03/31/2016	23,709	0	0.00	106
LADENBURG THALMANN FINANCIAL SERVICES INC	03/31/2016	23,600	4,419	23.04	105
GLENMEDE TRUST CO NA	03/31/2016	19,008	0	0.00	85
FORTALEZA ASSET MANAGEMENT INC/	03/31/2016	14,910	0	0.00	66

5.6%  
Institutional  
Ownership  
(3/31/16)





# Increase Investor Coverage

## REVIEW OF EARNINGS

**CytoSorbents Corporation**  
May 10, 2016

(CTSO/ NASDAQ)

**BREAN CAPITAL, LLC**

jaschoff@breancapital.com  
lma@breancapital.com

Jonathan Aschoff, (212) 702-6652  
Ivy Ma, (212) 702-6620

**REFRESH | Data In 3Q16, Fresenius To Soon Start Selling CytoSorb, Reports 1Q16**

### Investment Summary

1Q16 revenue and EPS were \$1.8 million and \$(0.08), respectively, which slightly beat consensus

**Buy**  
TP: \$24.00



MERRIMAN CAPITAL

Andrew D'Silva, Analyst

**CytoSorbents Corporation (CTSO)**

**CTSO: Update On Recent Events**

**Buy**

May 3, 2016

### Key Metrics

Price:	\$4.43
Price Target:	\$18.75
52-Week Range:	\$3.11-\$8.19
Cash (M):	\$7.5

### Investment Conclusion

CytoSorbents (CTSO) has developed a potentially breakthrough technology to extract inflammatory mediators such as cytokines and toxins from blood in critically ill patients with a wide range of inflammatory conditions such as sepsis, trauma, lung injury, burn injury, pancreatitis and many others. The company's various technologies are centered around its highly porous polymer beads which are backed by 32 issued U.S. patents.

**MAXIM GROUP**

**EQUITY RESEARCH INITIATION**

**Cytosorbents Corporation**

**Buy**

**Biotechnology**

May 23, 2016

**CTSO - NYSE**

Closing Price 05/23/2016

Rating:

12-Month Target Price:

52-Week Range:

Market Cap (M):

Shares O/S (M):

Float:

Avg. Daily Volume (000):

Dividend:

Dividend Yield:

Risk Profile:

Fiscal Year End:

**Total Revenues ('000)**

	2015A	2016E	2017E
1Q	981	1,810A	4,723
2Q	1,233	3,091	4,917

**A New Paradigm in Sepsis and More; Initiating Coverage with a Buy Rating and a \$8.00 Price Target**

### Summary

- CytoSorbents is now commercializing its CE-approved product CytoSorb in the EU (direct in Germany, Austria & Switzerland) and in a total of 32 countries worldwide (ex.US) for complications related to life-threatening inflammatory diseases such as sepsis, trauma, burn injury, liver failure, and lung injury as well as cardiac surgery.
- CytoSorb has the potential to become part of the standard of care for sepsis, a top-10 cause of death worldwide. It is an extracorporeal blood purifier (a filter) that targets the immunological "cytokine storm" that accelerates organ dysfunction and failure and ultimately death. By extending the treatment window for these patients, the product could be the difference between life and death for some patients.
- CytoSorb has yet to build sales traction. Revenues last year from both direct sales and distributorship amounted to a total of only \$4M. Introducing a new treatment paradigm to these very sick patients will take time for adoption in

**H.C.WAINWRIGHT&CO.**

**CytoSorbents Corp (CTSO)**  
Rating: Buy

**Earnings Update**  
Medical Device  
May 10, 2016

Swayampakula Ramakanth, Ph.D.  
212-356-0544  
sramakanth@hcrresearch.com  
Sean Lee  
212-356-0521  
slee@hcrresearch.com

**Fresenius to Rollout in May; REFRESH to Report in 3Q16; Reiterate Buy**

Stock Data	05/09/2016
Price	\$4.47
Exchange	NASDAQ

Financial update and changes to our model. CytoSorbents reported 1Q16 financial results and held a conference call on May 9. The company reported revenues of \$1.8M, higher than our estimate of \$1.6M. We expect 2Q16 revenues to be in the range of \$2.0M to \$2.2M.



**WBB Securities, LLC**

Stephen G. Brozak • [sbrozak@wbsec.com](mailto:sbrozak@wbsec.com) • (908) 518-7610

**INITIATING COVERAGE – FEBRUARY 25, 2015**

**CytoSorbents Corporation (NasdaqCM: CTSO)**

Initiating Coverage with a Speculative Buy Rating and One-Year Price Target of \$13.00

12 Month Target Price	\$13.00
12 Month Trading Range	\$4.40-\$12.87
Market Capitalization (Mil)	\$267.87

**Zacks Small-Cap Research**

[scr.zacks.com](http://scr.zacks.com)

**CytoSorbents Corporation (CTSO-NASDAQ)**

**CTSO: Fresenius Commences Sales, DSMB Recommends Continuation of REFRESH I**

Based on our 10-year DCF model, which uses a 13% discount rate to account for certain risks and uncertainties that CytoSorbents faces, and a 2% terminal growth rate, the shares are valued at approximately \$12.50.

Current Price (06/01/16) \$4.48  
Valuation \$12.50

June 2, 2016

Brian Marckx, CFA  
[bmarckx@zacks.com](mailto:bmarckx@zacks.com)  
Ph (312) 265-9474

10 S. Riverside Plaza, Chicago, IL 60606

### OUTLOOK

We view 2015 as somewhat of a re-grouping year on the income statement - although "re-grouping" should be put into context given strides on the operational front in 2016. In addition to Fresenius coming online, expansion into other geographic territories (in addition to those detailed by Fresenius), an expected continued regular flow of clinical data (including that from the patient registry as well as REFRESH I), potential additional production gains from the direct sales force, sales through Biocon could also accelerate further. And the cardiac-surgery channel also holds significantly potential. Consummation of a partnering agreement could further this opportunity.

We expect to see accelerating product sales growth as well as more strides on the operational front in 2016. In addition to Fresenius coming online, expansion into other geographic territories (in addition to those detailed by Fresenius), an expected continued regular flow of clinical data (including that from the patient registry as well as REFRESH I), potential additional production gains from the direct sales force, sales through Biocon could also accelerate further. And the cardiac-surgery channel also holds significantly potential. Consummation of a partnering agreement could further this opportunity.

**CytoSorbents**  
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# Build Momentum in Key Media

## +MASS DEVICE

CytoSorbents inks deal with Fresenius Medical Care ([link](#))  
By Mark Hollmer  
Mass Device  
December 16, 2014

Fresenius Medical Care is slated to distribute CytoSorbents' cytokine blood purification filters in several countries as part of a new strategic partnership.

CytoSorbents (OTC:CTSO) said yesterday that it scored an international strategic partnership with Fresenius (NYSE:FMS) that will boost access to international markets for its cytokine blood purification

## CardiovascularNews

CytoSorbents submits IDE application for US CytoSorb cardiac surgery trial ([link](#))  
By Dawn Powell  
Cardiovascular News  
January 2, 2014

## MICROCAP DAILY

Cytosorbents Corp (NASDAQ:CTSO) Rebounding on a Stronger Note ([link](#))  
By James Elliot  
MicroCap Daily  
December 30, 2014

Cytosorbents Corp (NASDAQ:CTSO) is coming back strong after a shack to just over \$9 a share. The stock has been upwards on huge strength in recent days hitting a high of \$12.86. The ticks

## FierceMedical Devices

CytoSorbents To Advance HemoDefend Towards Commercialization with \$1.5 Million Phase II SBIR Contract from NHLBI/NIH  
October 27, 2015



## FDANEWS

Simplifying Global Compliance

CytoSorbents Files IDE for CytoSorb Cardiac Surgery Trial ([link](#))  
By Kellen Owings  
FDANews  
January 2, 2015

## BioCentury

CytoSorb  
By Staff  
BioCentury  
December

## FierceDrugDelivery

CytoSorbents no longer an OTC stock, uplists to Nasdaq ([link](#))  
By Varun Saxena  
FierceDrugDelivery  
December 24, 2014

Starting today, CytoSorbents, maker of the CytoSorb extracorporeal cytokine adsorber to reduce inflammation in critically ill and cardiac surgery patients, will begin trading on the Nasdaq Capital Market instead of the over-the-counter market. Recent developments at the company include a partnership with dialysis magnate Fresenius Medical Care to help commercialize and distribute the product. "As we continue to advance our business through the ongoing commercial ramp of CytoSorb in 28 countries



**CytoSorbents**

Working to Save Lives Through Blood Purification

# CytoSorbents Has Tremendous Potential

CytoSorbents is a hybrid: Combines the greater visibility and lower risk of a medical device company with product sales with the upside potential of biotech

- Massive untapped \$20 billion unmet, medical need in critical care
- Generating significant international CytoSorb® sales growth with 60+% gross margins
- Fueling growth through more usage, clinical data, and continued geographic expansion
- Pursuing CytoSorb® FDA approval through our REFRESH I and II cardiac surgery trials
- Expansion of existing strategic partnerships and addition of new partners
- Greater market awareness and financing for success

CytoSorb is helping to save lives throughout the world





***Providing Hope***  
*in a helpless situation*



HELPING PATIENTS SURVIVE CRITICAL ILLNESSES WORLDWIDE



**CytoSorbents™**

Working to Save Lives Through Blood Purification

NASDAQ: CTSO

Dr. Phillip Chan, MD, PhD – CEO

[pchan@cytosorbents.com](mailto:pchan@cytosorbents.com)