HELPING REDUCE DEADLY UNCONTROLLED INFLAMMATION IN HOSPITALIZED PATIENTS WORLDWIDE

NASDAQ: CTSO

Piper Jaffray Investor Presentation

November 29, 2018

Safe Harbor Statement

This presentation contains “forward-looking statements” pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include, without limitation, any statement that may predict, forecast, indicate, or imply future results, performance or achievements, and may contain the words "estimate," "intend," "target," “will," “is likely,” "would," "may," or, in each case, their negative, or words or expressions of similar meaning. These forward-looking statements are found at various places throughout this presentation and include information concerning possible or assumed future results of our operations; business strategies; future cash flows; financing plans; plans and objectives of management; any other statements regarding future operations, future cash needs, business plans and future financial results, and any other statements that are not historical facts. Unless otherwise indicated, the terms “CytoSorbents,” “Company,” “we,” “us” and “our” refer to CytoSorbents Corporation. Any or all of the forward-looking statements included in this presentation are not guarantees of future performance and may turn out to be inaccurate. These forward-looking statements represent our intentions, plans, expectations, assumptions and beliefs about future events and are subject to risks, uncertainties and other factors. Many of those factors are outside of our control and could cause actual results to differ materially from the results expressed or implied by those forward-looking statements. 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 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. In light of these risks, uncertainties and assumptions, the events described in the forward-looking statements might not occur or might occur to a different extent or at a different time than we have described. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of the applicable presentation. You 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 8, 2018 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

CytoSorbents At a Glance

- NASDAQ-traded (CTSO): ~$10.75 per share
- CytoSorb® is E.U. approved with 51,000+ treatments; distributed in 53 countries
- $19.1M in trailing 12-month product sales (from $11.7M). 72% blended product gross margins. Healthy cash balance of $24.9M (9/30/18)
- 120 employees with international footprint across two wholly-owned subsidiaries
  - CytoSorbents Medical, Inc - New Jersey, USA
    - Headquarters, ISO 13485 manufacturing, QA/QC, R&D
  - CytoSorbents Europe GmbH: International sales office - Berlin, Germany
- Strategic Partnerships with Fresenius Medical Care, Terumo, Biocon, and Dr. Reddy's
- Strong government support with ~$25M in grants, contracts, other non-dilutive funding
- Russell 2000 & 3000 listed with coverage by Cowen, B Riley, HCW, Aegis, Maxim, Zacks

✓ **Expecting continued growth and quarterly operating profitability* in Q4 2018**

✓ **On path to potential U.S. approval with U.S. REFRESH 2 pivotal trial in cardiac surgery**

* Excluding non-cash expenses and clinical trial costs

Uncontrolled Inflammation is Deadly

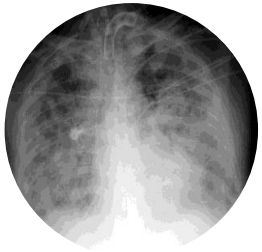
Sepsis

Trauma

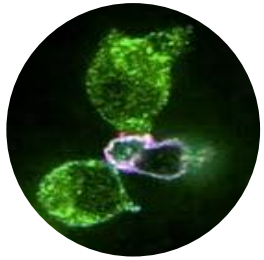
Influenza

Burn Injury

Millions Die Of Uncontrolled Deadly Inflammation Each Year



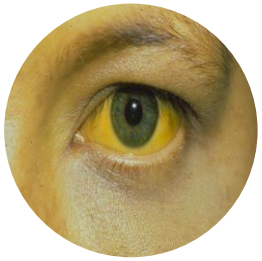
Lung Injury



Cytokine Release Syndrome

Pancreatitis

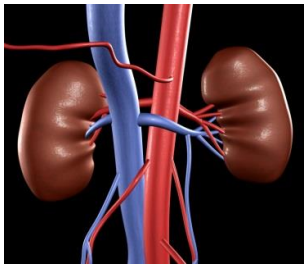
Surgical Complications

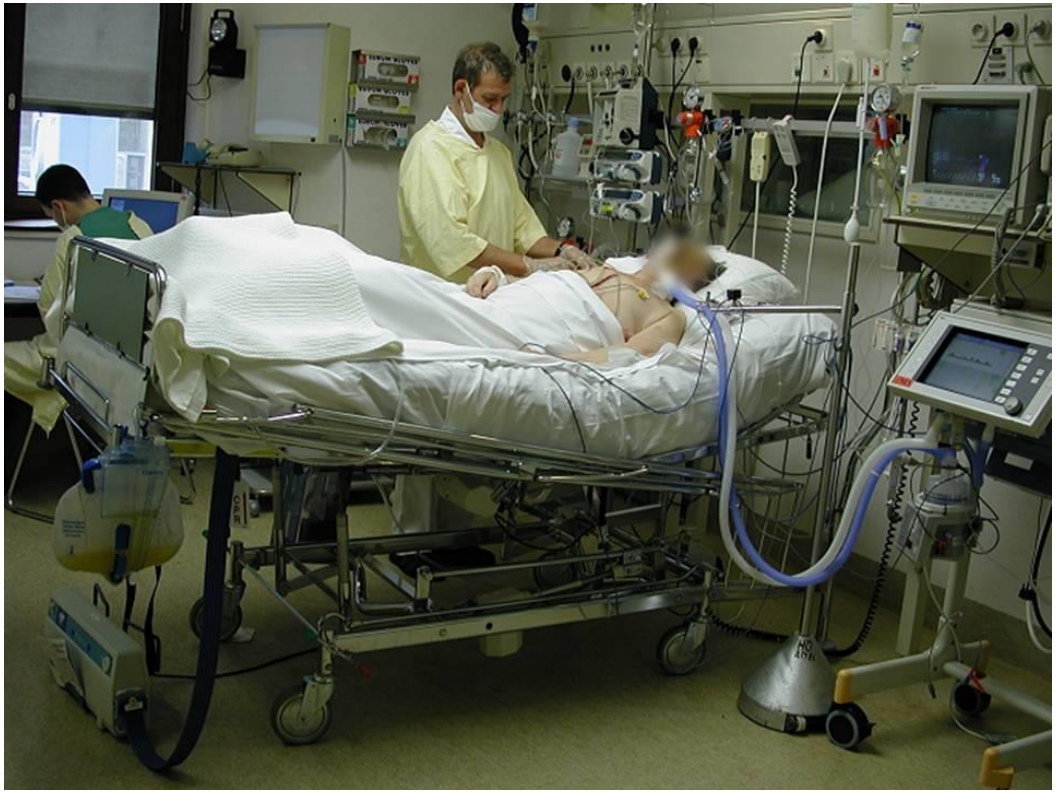


Liver Failure

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 organ failure today

No Ideal Options to Treat Severe Inflammation

Anti-Inflammatory (too weak)

NSAIDs

Aspirin

Anti-cytokine antibodies

Anti-integrin antibodies

Anti-oxidants

Immunosuppressive (too strong)

Corticosteroids

Chemotherapy

Organ transplant Anti-rejection drugs

Radiation

Immune system ablation

Anti-leukocyte Abs

CytoSorb® Reduces the Fuel to the Fire

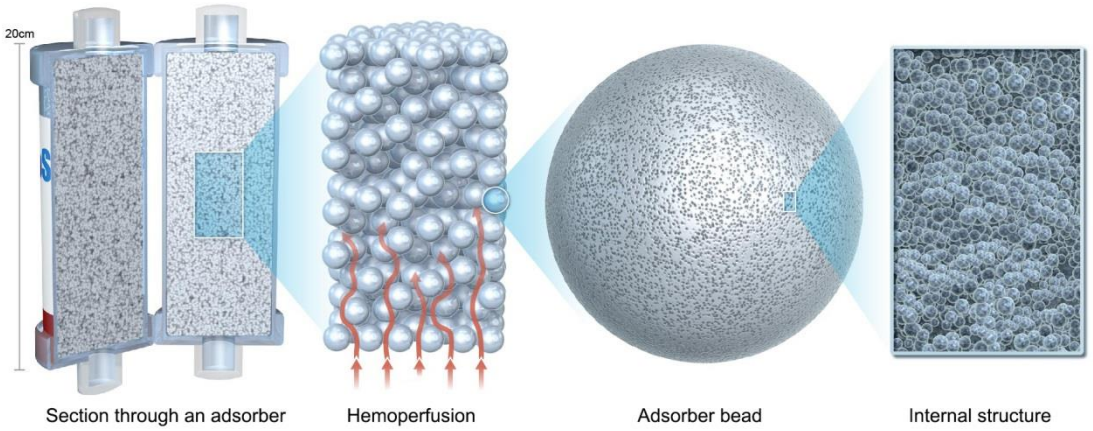
- CytoSorb® targets the $20+ billion opportunity in critical care and cardiac surgery
- Approved in the European Union as the first specifically approved extracorporeal cytokine adsorber
- Broad indication for use where cytokines are elevated
- Removes cytokines and many other inflammatory mediators such as free hemoglobin, bacterial toxins, myoglobin, and activated complement
- Safe and well-tolerated: 51,000+ cumulative treatments delivered, up from 31,000 a year ago

*CytoSorb is not yet approved in the U.S.

CytoSorbents™

Patented 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



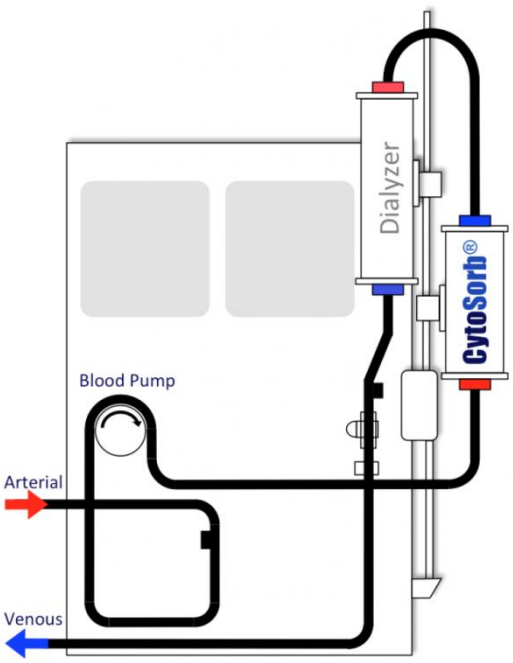
Each bead is about the size of a grain of salt

- Proprietary patented technology with multiple patents pending worldwide
- Manufactured at our ISO 13485 certified facility in New Jersey
- One of the highest grade medical sorbents on medical market today

CytoSorbents™

CytoSorb is “Plug and Play”

Compatible with Existing Dialysis and Heart-Lung Machines



- Place a temporary dialysis catheter in a major vein
- Connect the device to a standard dialysis, ECMO, or heart-lung machine 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 hour treatment
- Each treatment uses a new cartridge

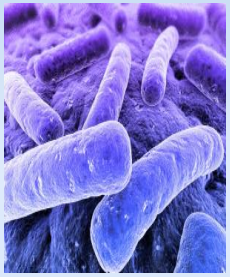
CytoSorbents™

Goal: To Prevent or Treat Organ Failure

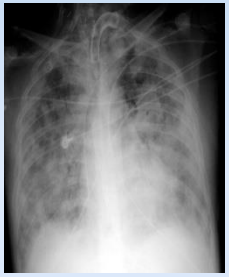
Improve Patient Outcome and Survival

Decrease Costs Of ICU and Patient Care

Sepsis



ARDS



Burn Injury

Trauma

Pancreatitis

Influenza

Surgical

The Potential to Revolutionize Critical Care Medicine

CytoSorbents™

Refractory Septic Shock

Prospective, single arm study in 20 patients with refractory late-stage septic shock using CytoSorb aggressively every 12 hours with a new cartridge

- Patients had refractory shock despite high doses of vasopressors, respiratory failure requiring mechanical ventilation, oligo-anuric kidney failure requiring dialysis, and lactate > 8 mmol/L

- Results from the CytoSorb Greifswald Study
  - Resolution of shock in 65% of patients treated with CytoSorb
  - 28-day survival was 45%, a 30-40% absolute improvement over expected (0-10%)
  - Reduction of IL-6 from an initial average of 87,000 pg/mL to below 10,000 pg/mL after 24 hours of treatment

- A similar population (n=16) receiving standard of care but no CytoSorb therapy, where shock could not be reversed, also on mechanical ventilation with an initial lactate level of 6.1 ± 4 mmol/L, and 75% requiring renal replacement therapy had a mortality of 100% at 28 days.*

- 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.
- Friesecke, S, et.al.,"Extracorporeal cytokine elimination as rescue therapy in refractory septic shock: a prospective single center study", J Artif Organs 2017 Sep; 20(3):252-259.

Universitätsmedizin GREIFSWALD

CytoSorbents™

CytoSorb

51,000+ Treatments

53 Countries Worldwide with E.U.

Critical Care

Cardiac Surgery

60+ Investigator Initiated Studies

United States

Cardiac Surgery

REFRESH I ✓

↓

REFRESH 2 ✓

↓

FDA ○

2021

CytoSorbents™

CytoSorb® Is a High Margin "Razorblade"

- High margin "razorblade" fully compatible with existing installed base of "razor" blood pumps: Dialysis/CRRT, ECMO machines (ICU), heart-lung machines (OR)
- Blended gross margins are 72%, expected to rise with volume production from new plant that came on-line June 2018
- Average Direct Selling Price is approximately $1,000 per cartridge
- Approximately 1 - 10 cartridges are typically used per patient
  - Open heart surgery: 1-2 cartridges
  - Sepsis: 3-5 cartridges or roughly 1 day in the ICU
- In Germany, 400 hospitals have >400 beds. Each hospital typically sees 300-600 sepsis patients per year. At 3-5 cartridges per patient:
  - Revenue per patient = ~$3,000-5,000
  - Potential revenue per hospital = $1-3M for sepsis alone
- One German hospital has already achieved sales >$1M, validating revenue model

Direct Sales: Focused on 5 Countries

CytoSorbents' direct sales force focused on most major university and public hospitals in Germany, Austria, Switzerland, Belgium and Luxembourg. 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
Senior Medical Director Europe

Dr. Volker Humbert, MD
Senior Manager - Clinical Affairs

Franziska Preissing
Senior Manager – Reimbursement & Health Economics

Patrick Waltrich
Senior Manager – Finance/Operations

Kristin von Hammerstein
Marketing Manager

Dominik Gutzler
Head of Product Management

Dr. Rainer Kosanke, PhD
Director Scientific Affairs Europe

Alexandru Bojan
Regional Sales Director

Bettina Sabisch
Regional Sales Director

Christian Tembaak
Regional Sales Director

Winfried Dramburg
Regional Sales Director

Uwe Gerks
Sales Director Central Europe

Hans-Juergen Kraus
Regional Sales Manager Southern Germany

Matthias Hoeldtke
Regional Sales Manager Southeast Germany

Andreas Gassmann
Sales Representative Southern Germany

Christian Koptik
Regional Sales Manager Austria

Daniel Gadke
Regional Sales Manager Northern Germany

Martin Heinzinger
Regional Sales Manager Central Germany

Christin Preiss
Executive Admin

Martin Scherer
Regional Sales Manager Southwest Germany

Andreas Pendleder
Regional Sales Manager Western Germany

Marco Dietrich
Regional Sales Manager Northeast Germany

Oliver Lupoli
Country Sales Manager Switzerland

Brigitta Waldmueller
Sales Manager/Application Specialist Austria

Josephine Kraus
Administrative Support

Dr. Maria Stevenson
IT Management

Patrick Hunneshagen
Congress Management National

Harriet Adamson
Clinical Research Manager

Eva Wechsler
Application Specialist

Anke Applehoff
Application Specialist

Pamela Leckie
Application Specialist International

Paolo Balboni
Application Specialist Internationalt

Petra Hoffman
Sales Assistant/Customer Support

Fernanda Goncalves Zawieja
Sales Assistant/Customer Support

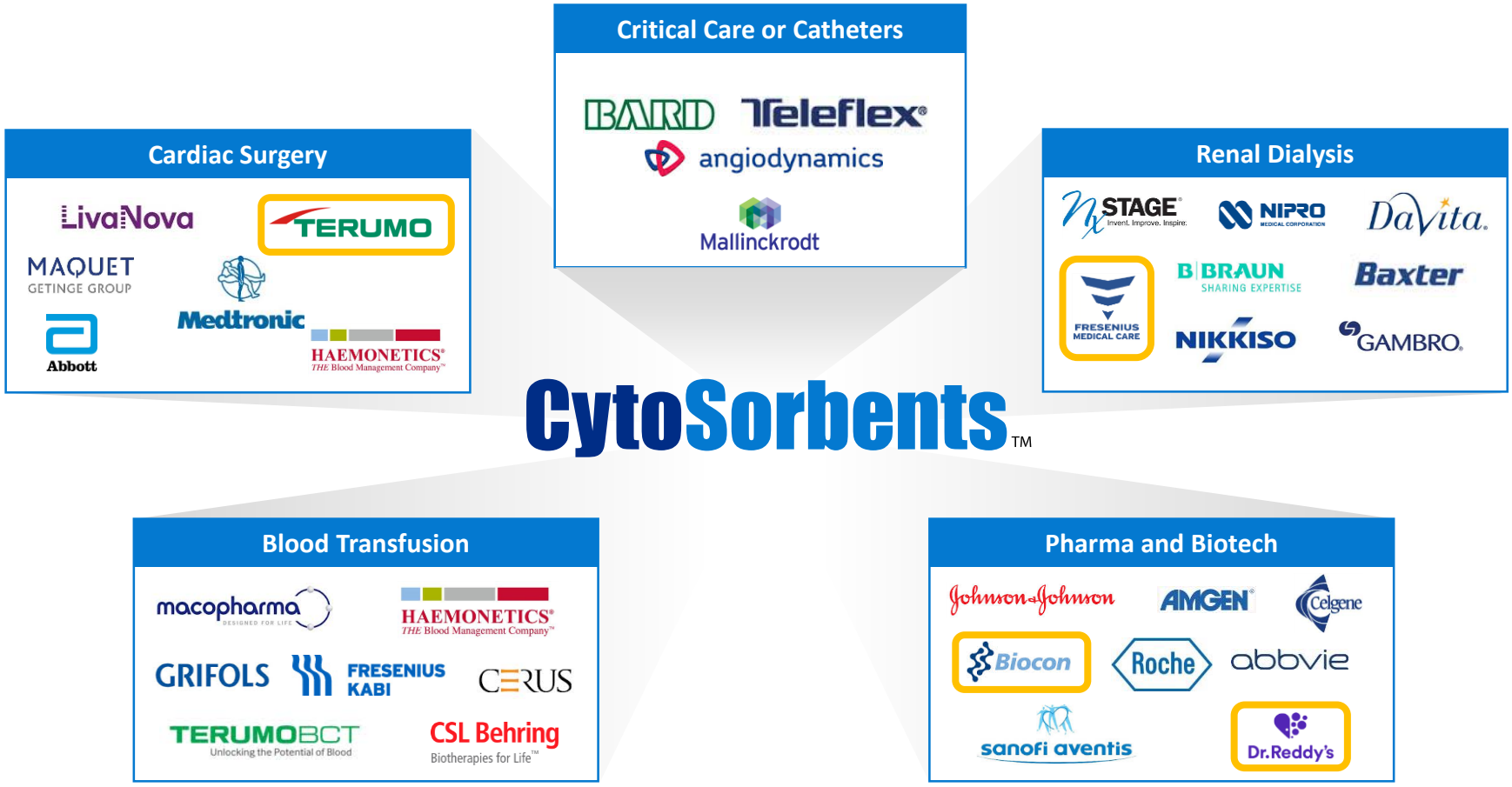
Jaqueline Bloch
Sales Assistant Customer Support

CytoSorbents™

CytoSorb® Distributed in 53 Countries

CytoSorbents™

Four Major Partnerships, Potential for More

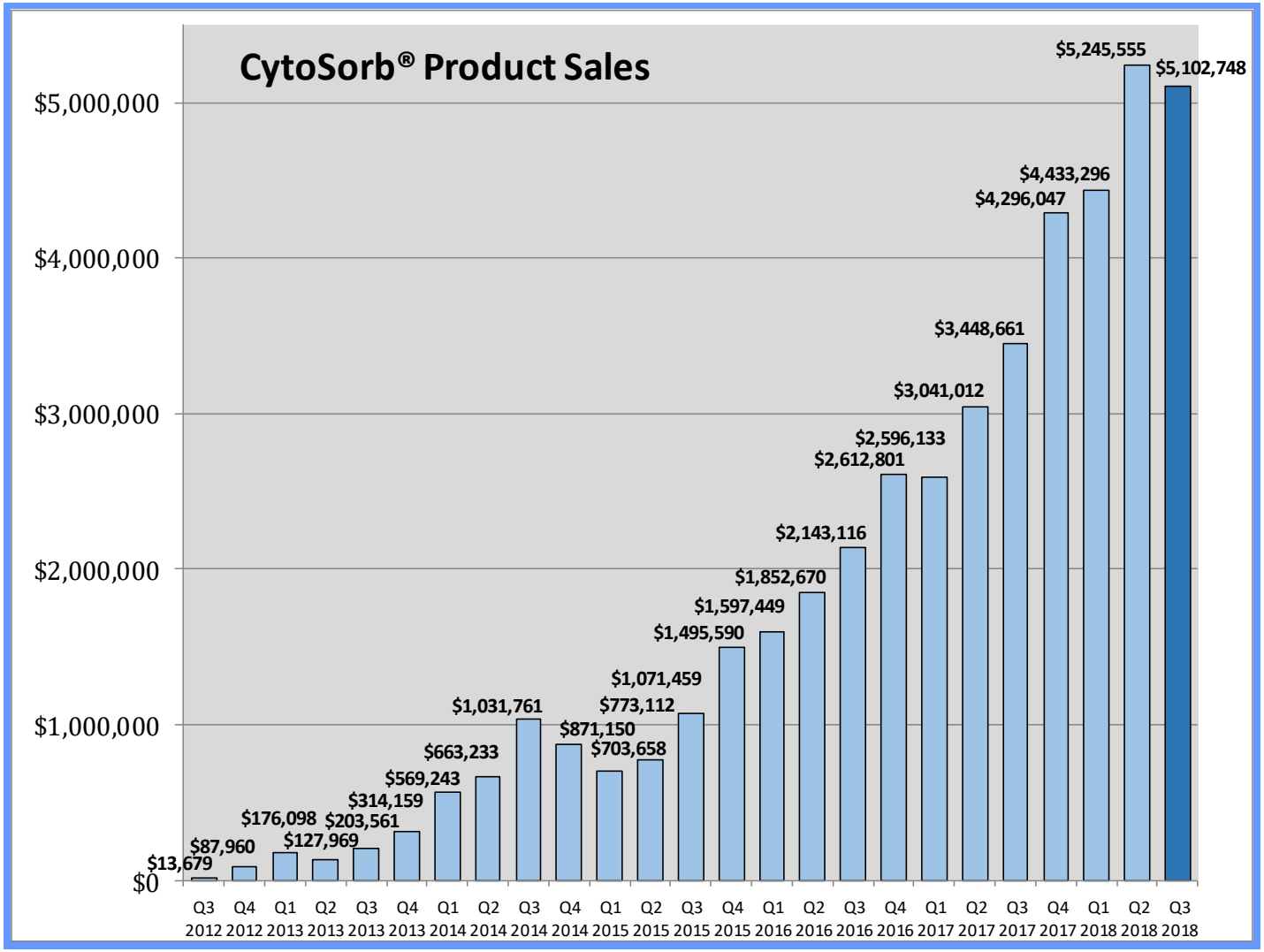


Partnered with leading multinational corporations:
Fresenius Medical Care, Terumo Cardiovascular, Biocon Ltd, and Dr. Reddy's Laboratories

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

Quarterly Product Sales

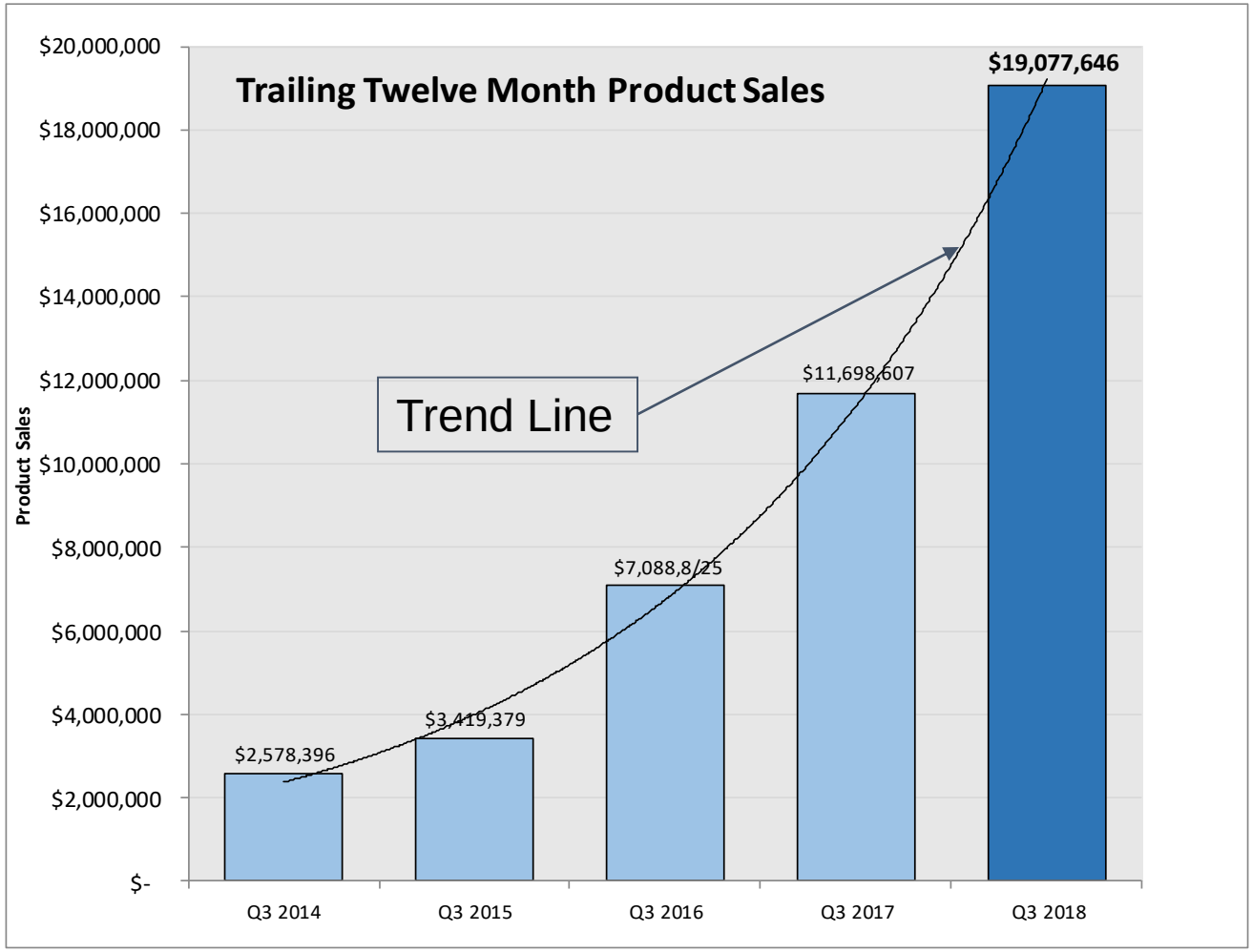
25 Consecutive Quarters of Year-over-Year Sales Growth



CytoSorbents™

Trailing Twelve Month Product Sales

Over the past three years, the compound growth rate of return ("CAGR") on product sales was 77%



CytoSorbents™

REFRESH 2-AKI Pivotal Trial Targets U.S. Approval

- Heart disease is the leading killer worldwide, driving 1.5M open heart surgeries each year and fueled by the aging baby boomer generation
- High risk invasive cardiac surgery generates inflammatory toxins (e.g. free hemoglobin and activated complement) that can cause post-operative inflammation and organ injury such as acute kidney injury (AKI). CytoSorb reduces these toxins
- The development of even mild AKI after surgery predicts 1 and 5 year mortality and progression to chronic kidney disease
- REFRESH 2-AKI is a pivotal, multi-center RCT using CytoSorb intraoperatively to reduce the incidence or severity of AKI in high risk cardiac surgery
  - Up to 400 patient, 20-25 centers
  - Expected study completion: 2020 with potential 2021 FDA approval
  - Cost: Approximately $12M spread out over 3 years

- Recent protocol amendment approved by FDA and trial site ethics committees
  - 16 active sites, with four additional sites to be added soon – targeting 25 total trial sites
  - 24 patients enrolled by this week. After holidays, target enrollment 1 patient/site/month

German Govt Funding REMOVE Endocarditis Trial

- Infective endocarditis (heart valve infection) occurs when bacteria seeds a heart valve from IV drug abuse and dirty needles, or from dental procedures
- The incidence of endocarditis is rising due to the opiate crisis
- Patients often require open heart surgery valve replacement but are very hemodynamically unstable before, during, and after surgery due to a combination of sepsis and heart valve destruction
- Intraoperative CytoSorb has been used to help stabilize such patients peri-operatively with good success
- The German Federal Ministry of Education and Research is funding a 250 patient, multi-center, randomized, controlled study (REMOVE) using CytoSorb during valve replacement open heart surgery in patients with infective endocarditis
- Primary endpoint is improvement of SOFA score
- Enrolled more than 60 patients to date. Interim analysis on reduction of inflammatory mediators planned on first 50 patients

Expanded Label Targets Liver Failure and Trauma

Recently received European approval to expand the use of CytoSorb in liver disease to reduce bilirubin, and in trauma to reduce myoglobin – both very large markets

- **Liver disease**
  - 850 million people suffer from chronic liver disease due to viral hepatitis, alcoholism, and non-alcoholic fatty liver (NASH), and other causes leading to 1 million deaths from chronic liver disease, and another 1 million from hepatic cancer
  - CytoSorb has been used as a liver dialysis therapy in numerous acute exacerbations of liver disease including acute-on-chronic liver failure, alcoholic hepatitis and others showing both bilirubin and bile acid reduction, and important clinical benefits such as hepatic coma reversal
- **Trauma**
  - 56 million hospitalizations in trauma worldwide each year with approximately 5 million deaths. Severe crush injury of muscle releases myoglobin, called rhabdomyolysis, which can precipitate kidney failure, and increase the risk of death

CAR-T Cell Immunotherapy and CRS

- CAR-T cell cancer immunotherapy is a blood cancer treatment breakthrough.
- However, ~40-50% of patients can develop severe, high grade cytokine release syndrome (CRS), a cytokine storm that can lead to rapid organ failure and potentially death
- CytoSorb® was specifically designed to control cytokine storm and CRS and has already successfully treated a dozen cases of the closely related disease hemophagocytic lymphohistiocytosis (HLH)
- With FDA and E.U. approvals of Kymriah (Novartis) and Yescarta (Gilead), we are positioning CytoSorb® to be used as an alternative to, or in conjunction with, tocilizumab and steroids
- In 2017, the pioneer of CAR T-cell immunotherapy, Dr. Carl June at University of Pennsylvania, joined our Scientific Advisory Board

Product Pipeline

Sepsis, Critical Care, High Risk Surgery

CE Mark Approved

VETRESQ®

U.S. Animal Health Market

HemoDefend

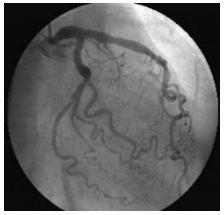
Blood Transfusions

Nearing US Pivotal Trial

CytoSorb-XL

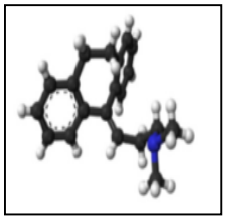
Sepsis, Critical Care, High Risk Surgery

ContrastSorb



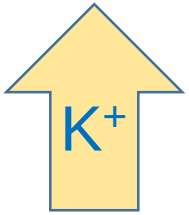
CT Imaging, Interventional Radiology

DrugSorb



Drug Overdose, Chemo Removal

K+ontrol



Severe Hyperkalemia

Under Development

CytoSorbents™

Near-Term Potential Catalysts

- Expected continued rapid growth in sales of CytoSorb
- Operating profitability* targeted in Q4 2018 with sequential growth in product sales over Q3 2018
- 2019 blended product gross margin expansion to 80%
- Potential new partnerships and expansion of existing partnerships
- Ramping of pivotal REFRESH 2-AKI study
- Early 2019 start to HemoDefend pivotal US Trial
- Publications of clinical and research data
- Greater institutional ownership (currently at 26%) and expanded analyst coverage

* Excluding non-cash expenses and costs related to clinical trials

CytoSorbents™

CytoSorbents™

Working to Save Lives Through Blood Purification

NASDAQ: CTSO
Dr. Phillip Chan, MD, PhD – CEO
pchan@cytosorbents.com