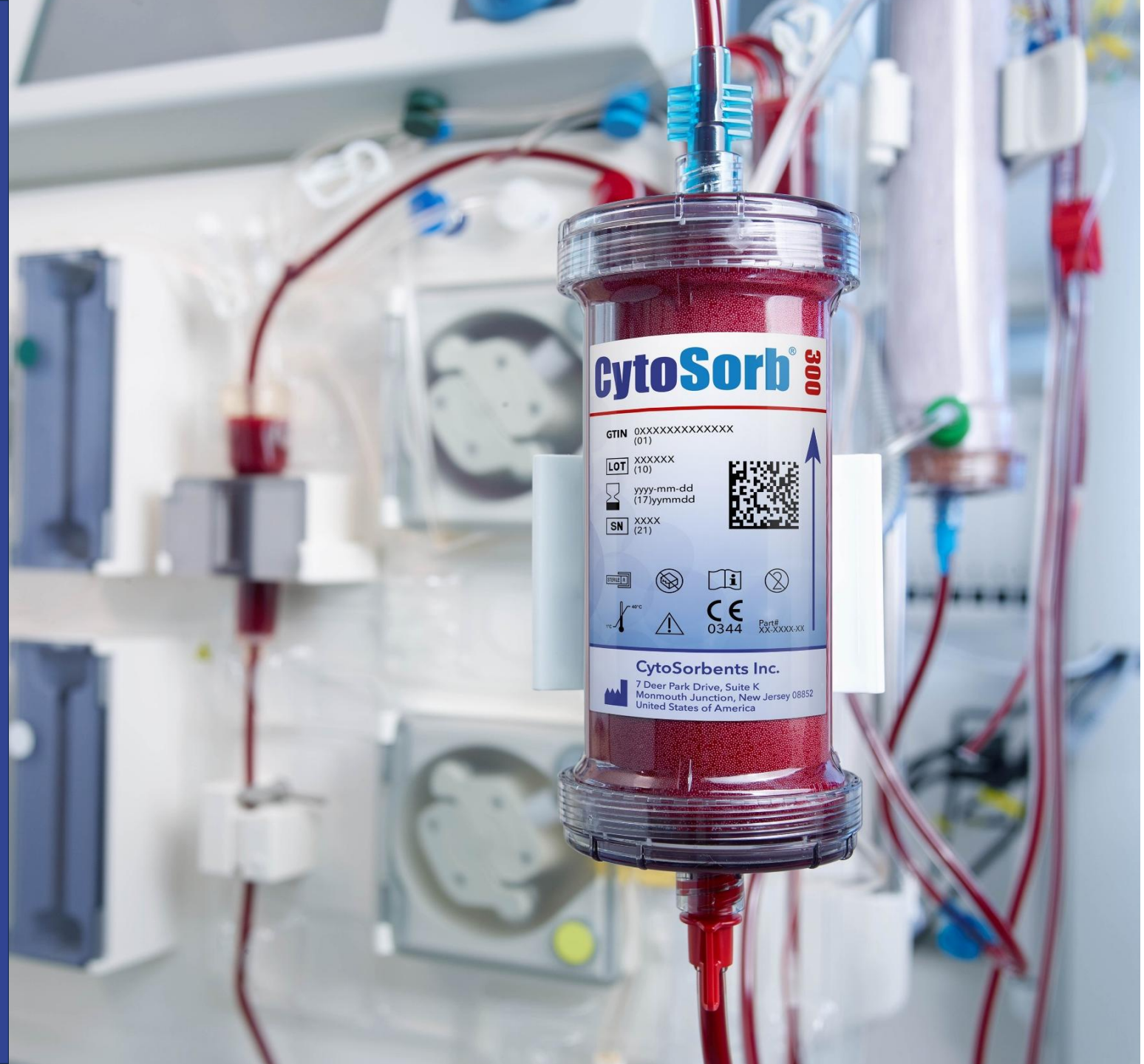


CytoSorbents™

WORKING TO SAVE LIVES Together

NASDAQ: CTSO

Investor Presentation
December 2024

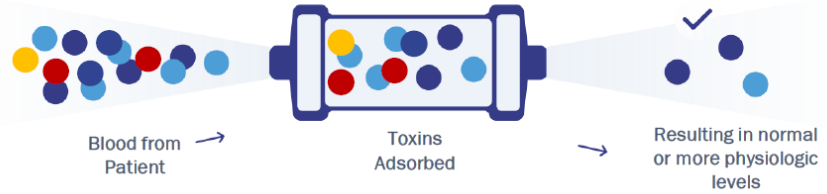
CytoSorbents™

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 2022 Form 10-K filed with the Securities and Exchange Commission on March 14, 2024, and other reports and documents filed from time to time by us, which are available online at www.sec.gov.

CytoSorbents™

CytoSorbents at a Glance



- **Platform** blood purification technology for removing toxins and harmful substances from the blood
- **High margin** "razorblade" that is "plug and play" into existing hospital blood pumps
- **Two main products** leveraging the underlying porous polymer technology
  - CytoSorb
    - Treatment of life-threatening conditions in the ICU and cardiac surgery
    - Core business with **~$34 million** in trailing 12-month product sales (~100% OUS)*
    - E.U. Approved with **>250,000** CytoSorb devices utilized cumulatively to date in 76 countries

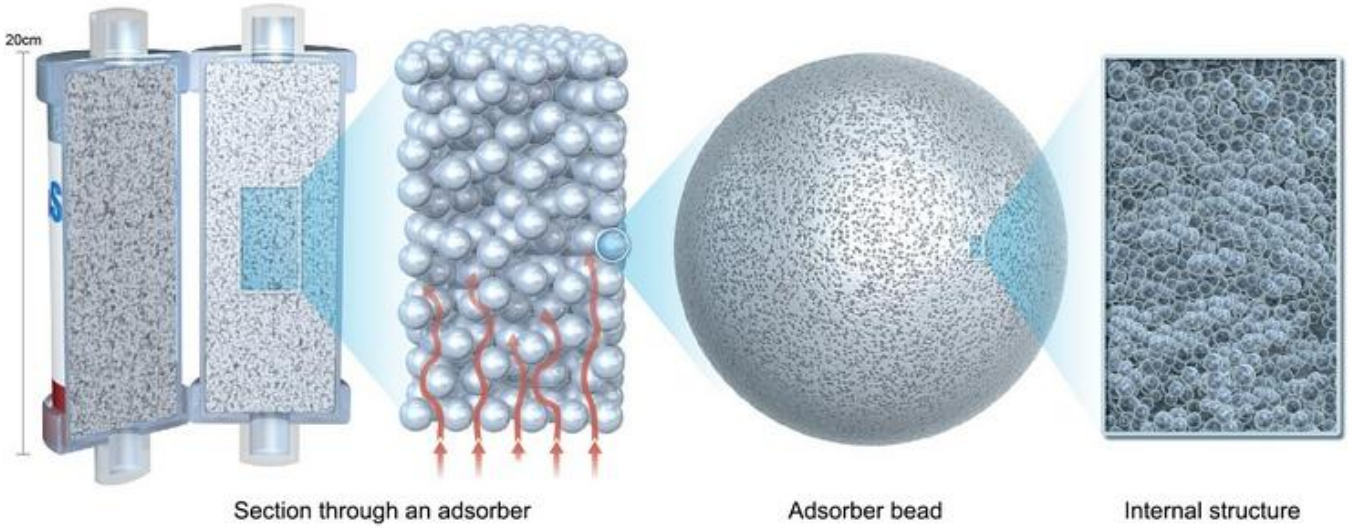
  - DrugSorb ATR
    - Investigational device to remove "blood thinners" / antithrombotic drugs during urgent cardiovascular surgery
    - Two **FDA Breakthrough Device Designations**
    - **Submitted to FDA in September 2024 and Health Canada in November 2024 with regulatory decisions expected in 2025**
    - If approved/cleared, we expect to begin commercialization rapidly, targeting a significant unmet need in large U.S. and Canada addressable markets

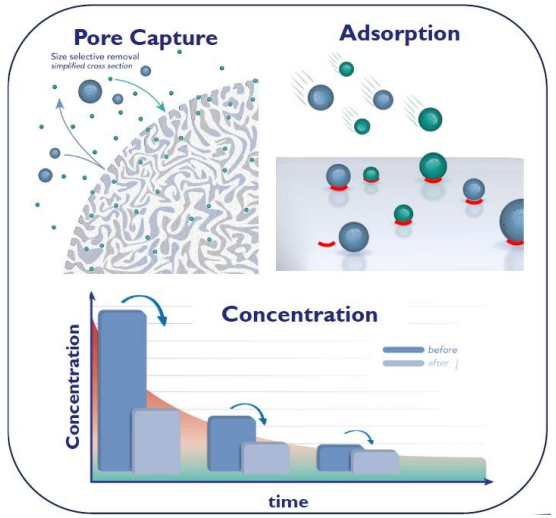
*As of 9/30/24

CytoSorbents™

The Power of the Bead

Hemocompatible, highly porous polymer bead platform technology that act like tiny sponges to remove harmful substances from blood by pore capture, adsorption, and concentration





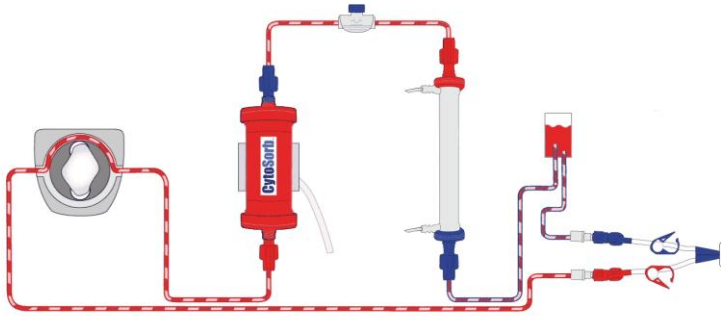
- Excellent removal of a broad range of substances from whole blood and plasma
- Solid state porous polymer chemistry that does not use ligands, antibodies, cells, or biologics
- 22 issued U.S. patents and multiple patents issued and pending worldwide
- Beneficiary of ~$50M in grants and non-dilutive funding from NIH, DARPA, DOD, others

CytoSorbents™

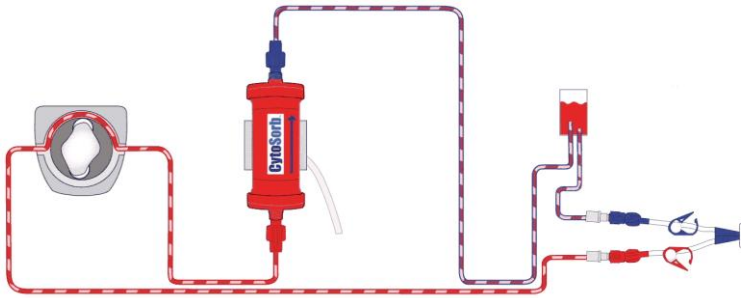
Products are “Plug and Play” Compatible

Compatible with Existing Blood Pump Infrastructure In Hospitals Today

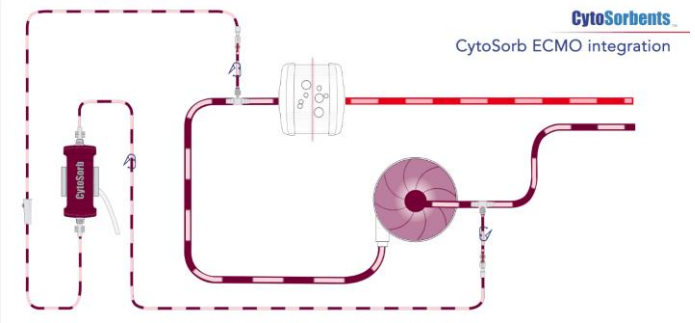
Dialysis or CRRT
(Continuous Renal Replacement Therapy)



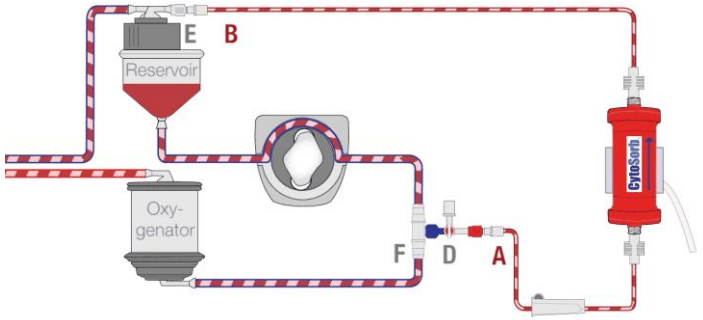
Hemoperfusion
(Standalone Treatment)



ECMO
(Extracorporeal Membrane Oxygenation)



CPB
(Cardiopulmonary Bypass)



CytoSorbents PuriFi Pump Launched Q2 2024

CytoSorbents launched its PuriFi pump, an easy-to-use hemoperfusion pump, to excellent reviews in June 2024

PuriFi gives hospitals the ability to administer CytoSorb therapy earlier and without the need for dialysis. This is particularly important in countries that do not have a well-established dialysis infrastructure

Looks Like Dialysis, but Key Differences

We are Expanding the Dimension of Blood Purification® by removing a broad range of toxins that dialysis does not remove well

CytoSorb works like the liver

Large Molecules and
Fat soluble substances

Cytokines
Inflammatory mediators
Bacterial toxins
Liver toxins
Proteins and peptides
Fat-soluble drugs

Dialysis works like the kidney

Small Molecules and
Water soluble substances

Urea, Ammonia
Electrolytes
Water
Water-soluble drugs

CytoSorb has 7 football fields of surface area to bind toxins compared to ¾ of a ping pong table for a dialyzer

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The Opportunity of

DrugSorb™ ATR

* The DrugSorb-ATR system is an investigational device that is not yet cleared/approved by FDA, Health Canada, or by any other Global Regulatory Agency and is not commercially available for sale

Large Unmet Need for Blood Thinner Reversal

Millions of people worldwide are on Anti-thrombotic blood thinners to reduce risk of heart attack and stroke

Brilinta® (ticagrelor)
(AstraZeneca)
Acute Coronary Syndrome, Stents, Prosthetic Heart Valves

Eliquis® (apixaban)
(Pfizer, BMS)
A-Fib, Peripheral Vascular Disease, DVT/PE, Others

Xarelto® (rivaroxaban)
(Bayer, Jansenn/J&J)
Atrial Fibrillation (lifelong therapy)

Anti-platelets (P2Y12 platelet inhibitor)

Direct Oral Anticoagulants (DOAC)

- Cardiac surgeons are frequently faced with **patients on antithrombotics needing urgent surgery**
- Guidelines recommend that such **patients wait for 3-5 days** for these drugs to **"washout" to avoid bleeding complications**
- Frequently the **surgery cannot wait**, and patients are operated at a **very high risk for major bleeding complications**
- **Delaying** surgery for washout is also **not optimal**
  - Exposes patients to risk for complications while waiting
  - Hospital efficiency is reduced when beds are occupied with patients waiting

There is no approved reversal agent for these specific drugs in the U.S. or Canada for cardiac surgery. CytoSorb is approved for this indication in the E.U. and is the only option for cardiac surgery ROW

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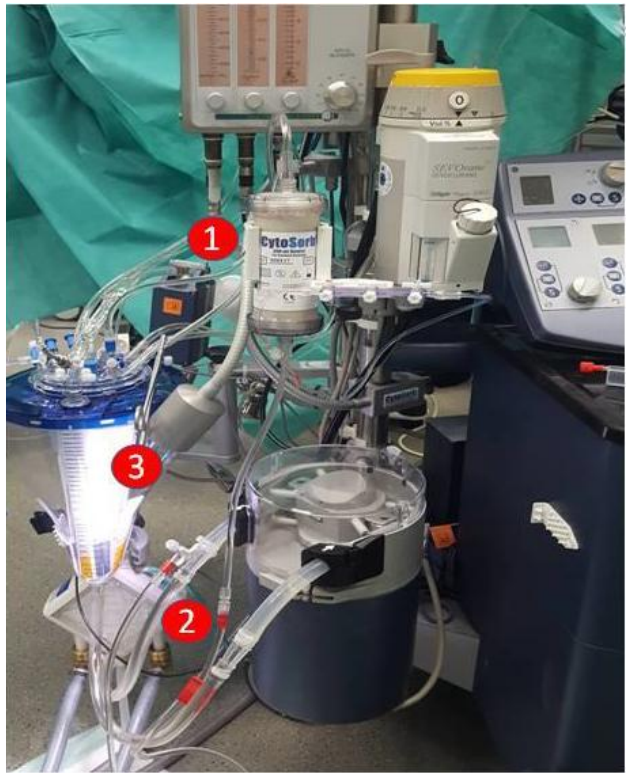
DrugSorb-ATR is an FDA Breakthrough Device

- DrugSorb-ATR is an investigational device that uses an equivalent polymer technology to CytoSorb and installs easily into a cardiopulmonary bypass machine *
- As whole blood is pumped through the cartridge, it is designed to remove free drug during surgery from blood to reverse its antithrombotic effect
- FDA has granted 2 Breakthrough Device Designations (BDD) for DrugSorb-ATR highlighting the major unmet medical need and lack of effective therapies, and provides for priority review of marketing submissions
  - 2020: Removal of Brilinta® in emergent or urgent cardiothoracic surgery
  - 2021: Removal of DOACs, Eliquis® and Xarelto® for same



Brilinta is our initial focus for the U.S. and Canadian market

* The DrugSorb-ATR system is an investigational device that is not yet cleared/approved by FDA, Health Canada, or by any other Global Regulatory Agency and is not commercially available for sale

Brilinta® and the Use Case for DrugSorb™ ATR

DrugSorb™ ATR

weekly plan						
monday	tuesday	wednesday	thursday	friday	saturday	sunday
	X	X	X	X	X	

The ultimate goal of DrugSorb-ATR is to allow patients to get the critical surgery they need without delay, while reducing or preventing bleeding complications

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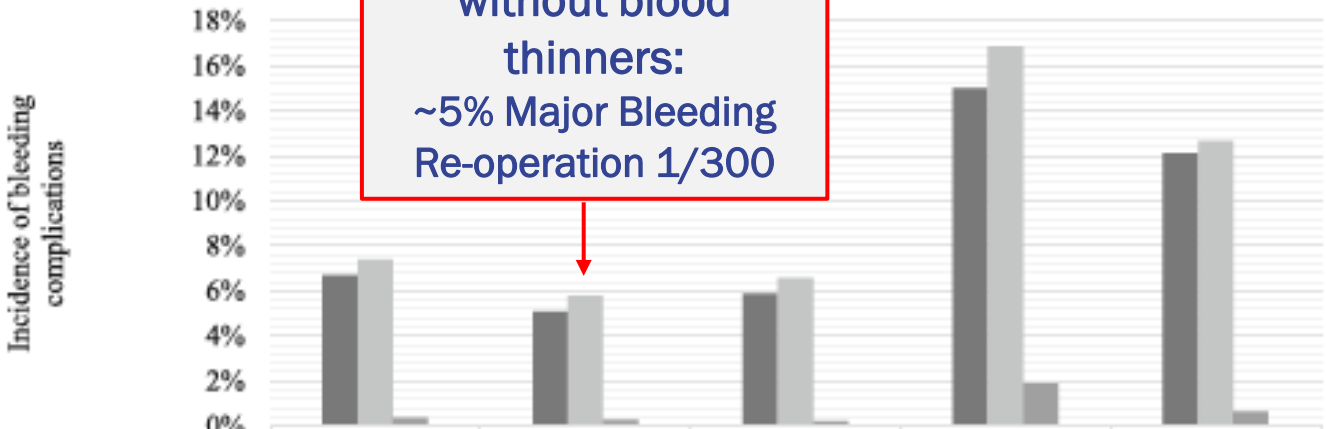
Cardiac Surgery and Bleeding Risk

Bleeding at baseline varies according to type of cardiothoracic surgery without the use of antithrombotic drugs

Isolated CABG without blood thinners:
~5% Major Bleeding
Re-operation 1/300



	All cardiac surgery patients (N=7774)	Coronary artery bypass graft (N=3963)	Valve replacement/ repair (N=2363)	Aortic procedures (N=160)	Multiple procedures (N=1288)
Bleeding (Narrow)	6.7%	5.1%	5.9%	15.0%	12.1%
Bleeding (Broad)	7.4%	5.8%	6.6%	16.9%	12.7%
Reoperation	0.3%	0.3%	0.2%	1.9%	0.6%

In-hospital bleeding complications and reoperation rates in 7774 cardiac surgery patients (3963 CABG; 2363 valve replacement/ repair; 160 aortic procedures; 1288 multiple procedures, primarily CABG+valve).

Factors associated with bleeding:

- Type of Surgery
- Surgical duration
- Duration of cardiopulmonary bypass (CPB)
- Body temperature
- Use of cardiac assist devices
- Intraoperative complications

What happens when blood thinners are added to the mix?

Al-Attar et. al., J Cardiothoracic Surg (2019)14:64.
Spahn et al Hemotherapy 46 (2019) 282–93.
Christensen et. al., J Card Vasc Anesth (2012) 26:46-5.

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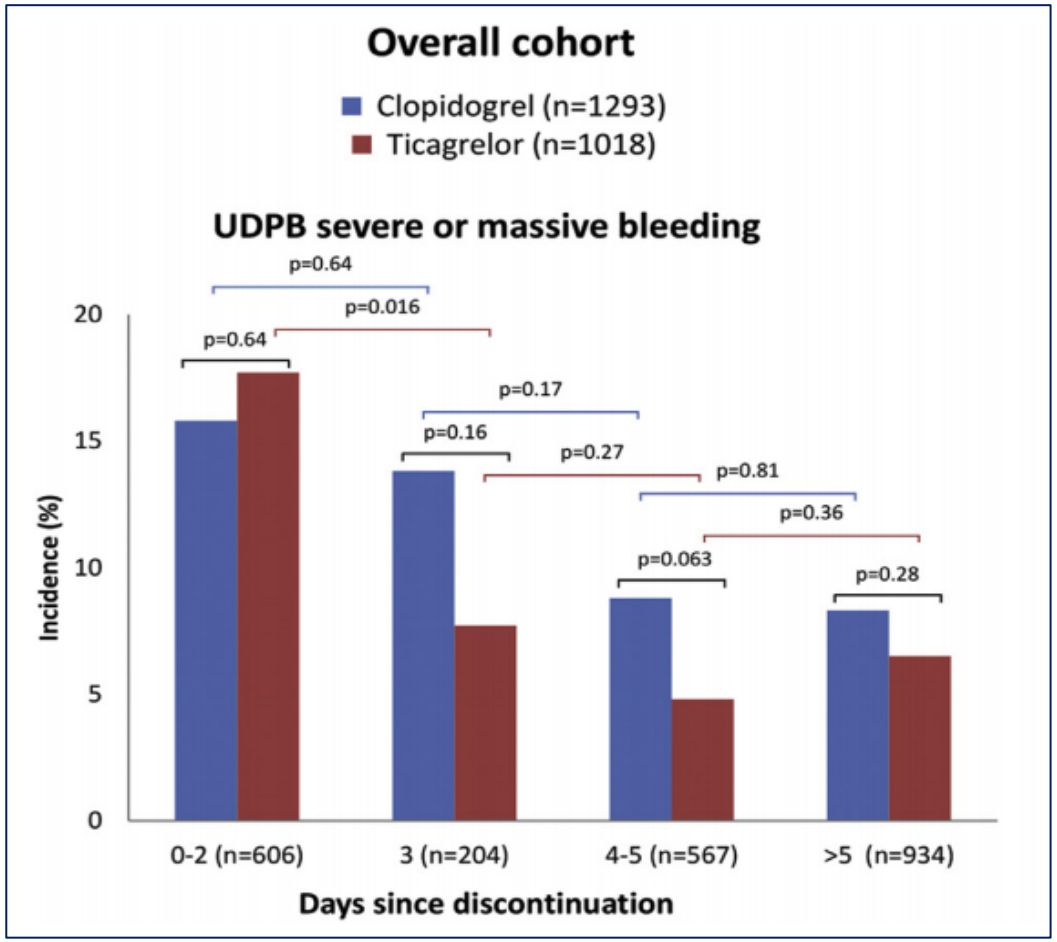
Brilinta Increases Bleeding Risk in Isolated CABG Surgery

The European Multicenter Study on CABG (E-CABG) Registry is one of the largest real-world data registries evaluating outcomes in CABG patients – the most common cardiac surgery



- In this E-CABG registry study, the incidence of severe or massive bleeding in patients on Plavix® (clopidogrel) or Brilinta® (ticagrelor) was assessed based on last dose of the drug and timing of CABG surgery
- Used the Universal Definition of Perioperative Bleeding (UDPB) – a bleeding scale developed specifically for cardiac surgery – where UDPB ≥ 3 represents severe, massive, or fatal bleeding

The rate of severe or massive bleeding is >3X higher in patients undergoing CABG within 2 days of last dose of Brilinta®, compared with a 4-5 day washout

Holm M, et. al. Ann Thorac Surg. 2019 Jun;107(6):1690-1698.
Dyke, C., et al. "Universal Definition of Perioperative Bleeding in Adult Cardiac Surgery", J Thorac Cardiovasc Surg (2014); 147(5):1458-1463.

A Pivotal Randomized, Sham-Controlled Trial Examining the Safety and Efficacy of Intraoperative Removal of Ticagrelor in Patients Undergoing Urgent Cardiac Surgery

Topline Results of the STAR-T Trial

Michael Mack, MD

Richard Whitlock, MD

C. Michael Gibson, MD

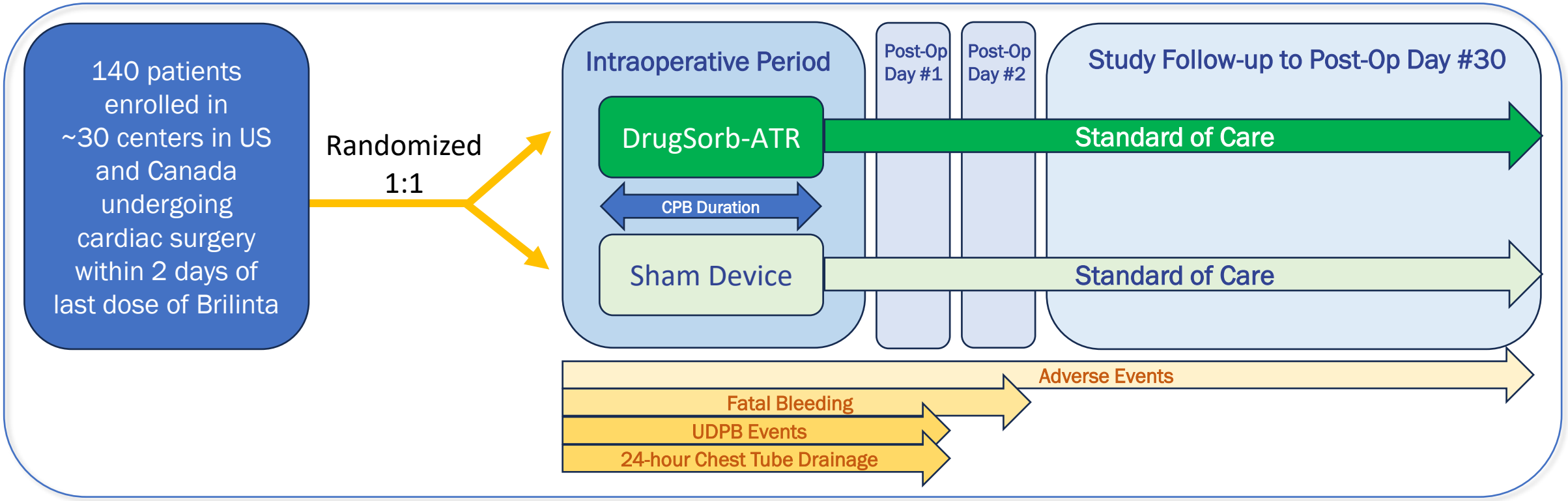
for the STAR-T Investigators

April 28, 2024

STAR-T RCT: Safe & Timely Antithrombotic Removal of Ticagrelor

Study Objectives:

- Evaluate the safety of intraoperative use of DrugSorb-ATR
- Evaluate DrugSorb-ATR efficacy in reducing perioperative bleeding



Prespecified Study Endpoints:

- **Safety:** Adverse event rates assessed by independent Data Safety Monitoring Board (DSMB)
- **Efficacy:** Perioperative bleeding based on UDPB grade and 24-Hr Chest Tube Drainage (CTD)
  - **Composite #1**: fatal, moderate/severe (UDPB≥2) bleeding and 24-hr CTD **(Primary)**
  - **Composite #2:** fatal, severe (UDPB≥3) bleeding and 24-hr CTD

Composite endpoints analyzed with a hierarchical WIN Ratio of the 3 components

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STAR-T Results Presented by Dr. Michael Mack

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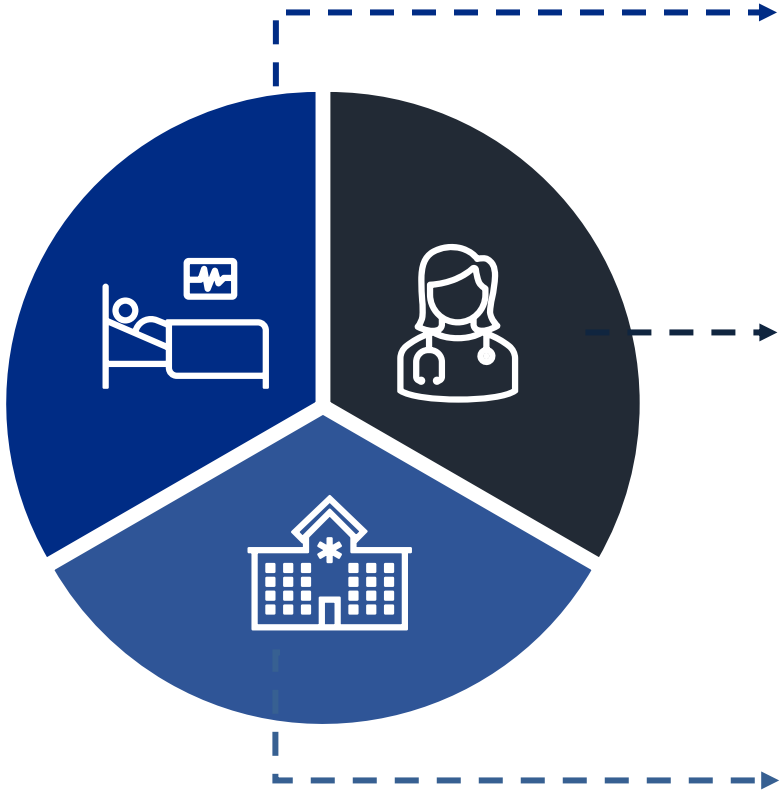
STAR-T Key Takeaways & Next Steps

- No safety concerns - Primary safety endpoint met
- Imbalances in the number of high-risk non-CABG surgeries and other factors in the treatment arm led to missing the primary efficacy endpoint in overall surgery population (92% CABG + 8% other)
- However, the severe bleeding endpoint was met in the pre-specified CABG per protocol population
- Overall, in patients undergoing CABG, DrugSorb-ATR was associated with:
  - Reduced bleeding severity by either UDPB grade or CTD volume
  - NNT (Number Needed to Treat) of 6 to prevent a major bleed (UDPB 3 event or CTD >1 Liter)
  - Favorable benefit-to-risk profile
- Corroborated with real world data in 102 CABG patients on ticagrelor from European STAR Registry with CytoSorb
- U.S. FDA De Novo marketing application submitted 9/27/24 and accepted by FDA in October 2024, now under substantive review. FDA Breakthrough Device status = priority review
- Health Canada Medical Device License application submitted 11/1/24 with MDSAP certification
- FDA and Health Canada decisions expected in 2025

* The DrugSorb-ATR system is an investigational device that is not yet cleared/approved by FDA, Health Canada, or by any other Global Regulatory Agency and is not commercially available for sale

DrugSorb-ATR is a Potential Win for All Stakeholders



Patients

- ✓ Minimize delays to definitive surgery
- ✓ Reduce serious bleeding risk, which is associated with longer hospital stays and increased morbidity and mortality

Surgeons

- ✓ No change in workflow, seamless integration into CPB machine
- ✓ Reduce serious perioperative bleeding
- ✓ Protect surgeon's reputation and quality rating
- ✓ Faster disposition of patients, increased throughput of new patients, reduces expensive and time-consuming re-exploratory surgery

Hospital Administrators

- ✓ Reduces hospital resource utilization
- ✓ Avoiding costs of 3 - 5 day washout: ~$18-30K in the ICU, ~$6-10K in a cardiac bed
- ✓ Reduced adverse events protects hospital's CMS STAR rating

(1) Cleveland Clinic 2023 Patient Price Information List

Strong Value Proposition for Hospitals

Waiting in the hospital for multiple days for the drug to "washout" is highly problematic:

- Exposes patients to added risk due to the delay of having the needed operation
- Increases hospital costs and reduces efficiency by blocking beds and reducing throughput

Survey of Select STAR-T US Pivotal Trial Sites*

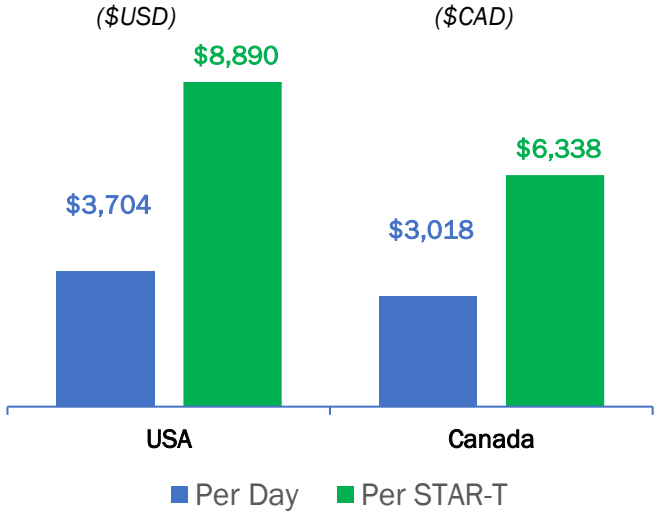
Average Washout Duration:

US: 4 days
CAN: 3.7 days

Washout Location			
	ICU	Stepdown ICU	General Ward
US	13%	79%	8%
CANADA	24%	26%	50%

Guidelines recommend Ticagrelor washout for 3-5 days

Illustrative Hospital Savings with DrugSorb-ATR



Surgery at 1.6 days with DrugSorb-ATR

Cost savings calculated based on washout duration and hospital location. Hospital bed costs as reported in literature.

* CytoSorbents data on file

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US & Canada TAM for Brilinta Removal

~60,000 patients on Brilinta needing emergent/urgent CABG surgery annually in U.S. and Canada

x

~ $5,000 per device (USD and Canadian)

=

~$300M (USD) Initial US & Canada Total Addressable Market

Brilinta market share expected to grow

- DrugSorb-ATR would make Brilinta the only reversible platelet inhibitor
- Brilinta goes off patent in 2024 leading to a likely drop in prices

Targeting label expansion to include DOACs

>$600M US & Canada Total Addressable Market Potential at Premium Expected Product Gross Margins

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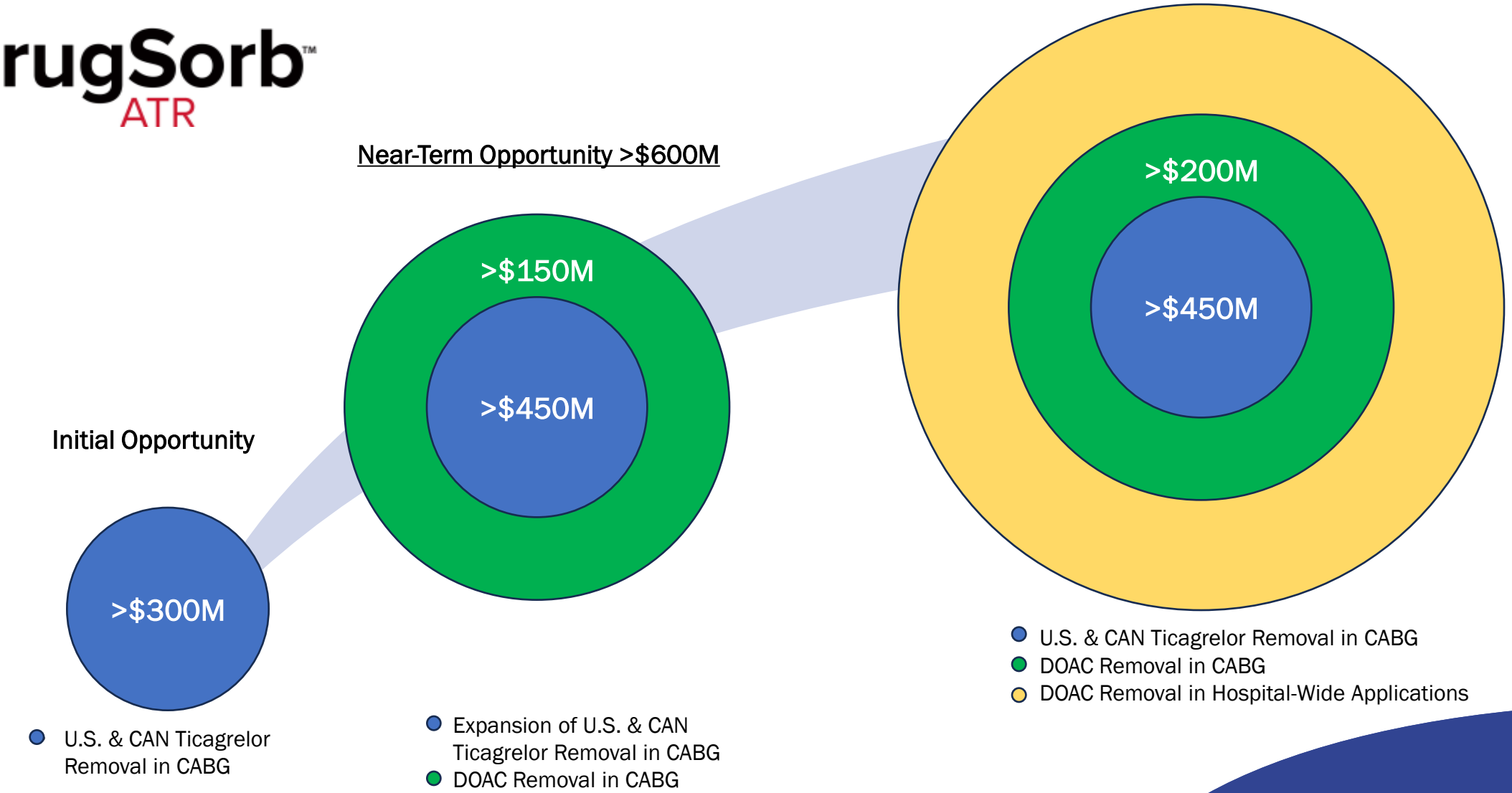
Large Total Addressable Market

DrugSorb™ ATR



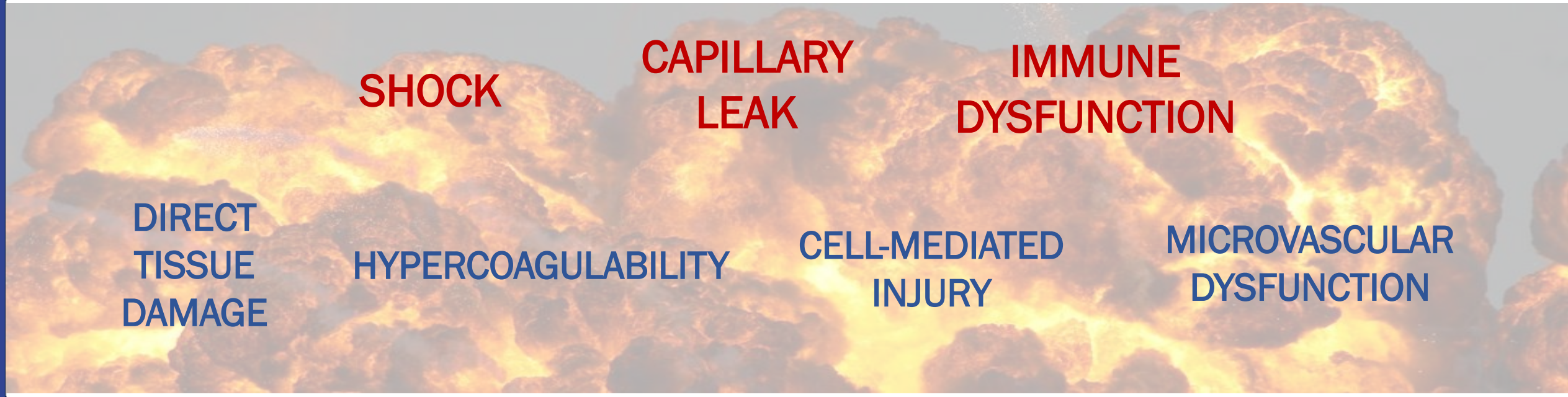
CytoSorbents™

CytoSorb

Our Core Business

CytoSorb Targets Massive Inflammation - the Heart of Critical Illness

- Acute inflammation is the body's mechanism to fight injury and infection
- However, severe inflammation, driven by cytokine storm, can cause a chain reaction of problems that can end in organ failure and death



- Severe inflammation is the common thread amongst most critical illnesses and is directly correlated to increased severity of illness, organ failure, and mortality

CytoSorb controls deadly inflammation and has demonstrated the reversal or prevention of many of these complications

CytoSorbents™

Targets Deadly Conditions That Afflict Millions of People

Critical Care

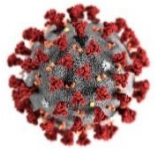
Removes the "fuel to the fire" of massive uncontrolled inflammation that is often associated with organ failure and death

Sepsis

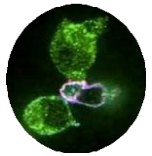
Surgical Complications

Influenza

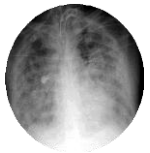
Burn Injury



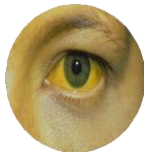
COVID-19



Cytokine Release Syndrome



Lung Injury



Liver Failure

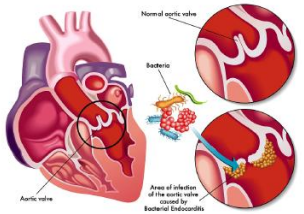
Trauma

Pancreatitis

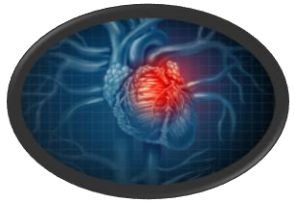
Cardiothoracic Surgery

Reduces inflammation and blood thinners, targeting reduction in complications of cardiac surgery like sepsis, bleeding, shock, and others

Life-threatening bleeding due to anti-thrombotic "blood thinners"



Infective Endocarditis



High Risk Procedures

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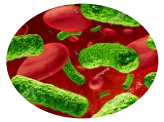
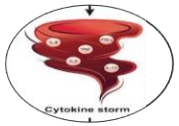
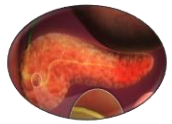
This is Why CytoSorb Continues To Grow in ICU applications


Sepsis, Septic Shock, Other Shock


Liver failure



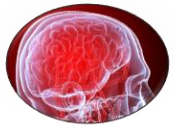
Cytokine storm/ Cytokine release syndrome

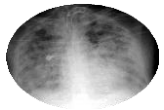

Pancreatitis


Infectious diseases (flu, COVID-19, other)

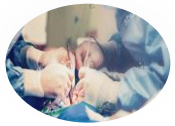

Burn injury


Post-surgical complications Organ transplant

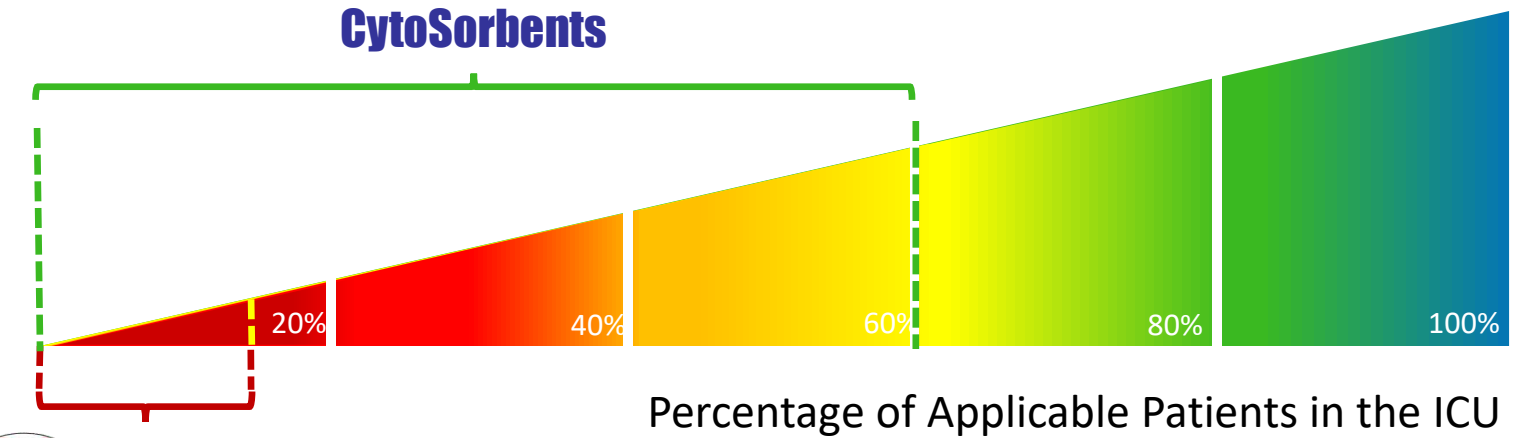

Neuroinflammation


Acute Respiratory Distress Syndrome (ARDS)


Trauma, Rhabdomyolysis


High risk surgical procedures, aortic surgery, Infective endocarditis


Drug overdose
Blood thinner toxicity



CytoSorb helps to treat critical illnesses where massive inflammation plays a dangerous role in 40-60% of patients in the ICU. Compare this to the only 10-15% of patients who require dialysis in the ICU

CytoSorbents™

CytoSorb Key Facts

- E.U. approved and used in 76 countries worldwide with more than a quarter million treatments used cumulatively
- By treating deadly inflammation, CytoSorb helps to prevent or treat organ failure – the cause of nearly half of all deaths in the ICU. Because of this, we believe we are very strategically and uniquely positioned to help solve many of the most difficult to treat life-threatening illnesses that are estimated to account for 40-60% of patients in the ICU
- CytoSorb is expanding the dimension of blood purification well beyond kidney dialysis by acting like the other major detoxification organ…the liver. We believe CytoSorb is the best-in-class technology for this application
- Manufactured in the U.S. at our new state-of-the-art facility (peak capacity $400M sales) at high blended product gross margins (>70%) that mix higher margin direct sales ($1,000+ ASP) with lower margin distributor sales
- Partnered with some of the leading multinational corporations in the world in critical care and cardiac surgery

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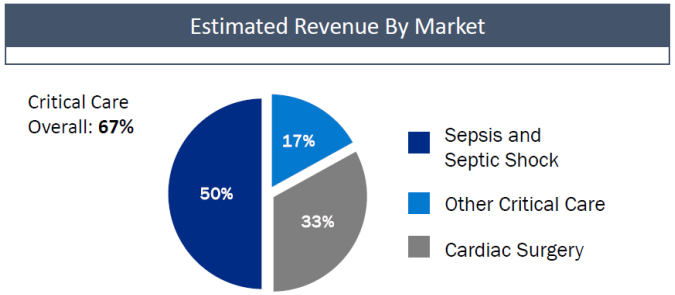

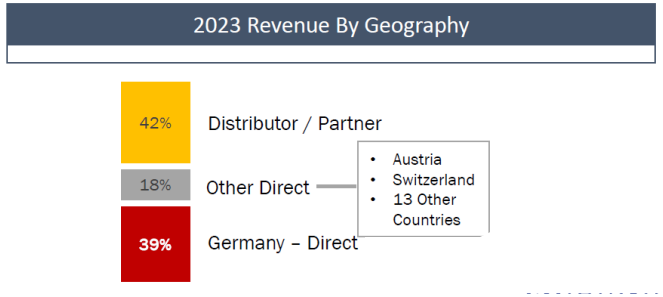

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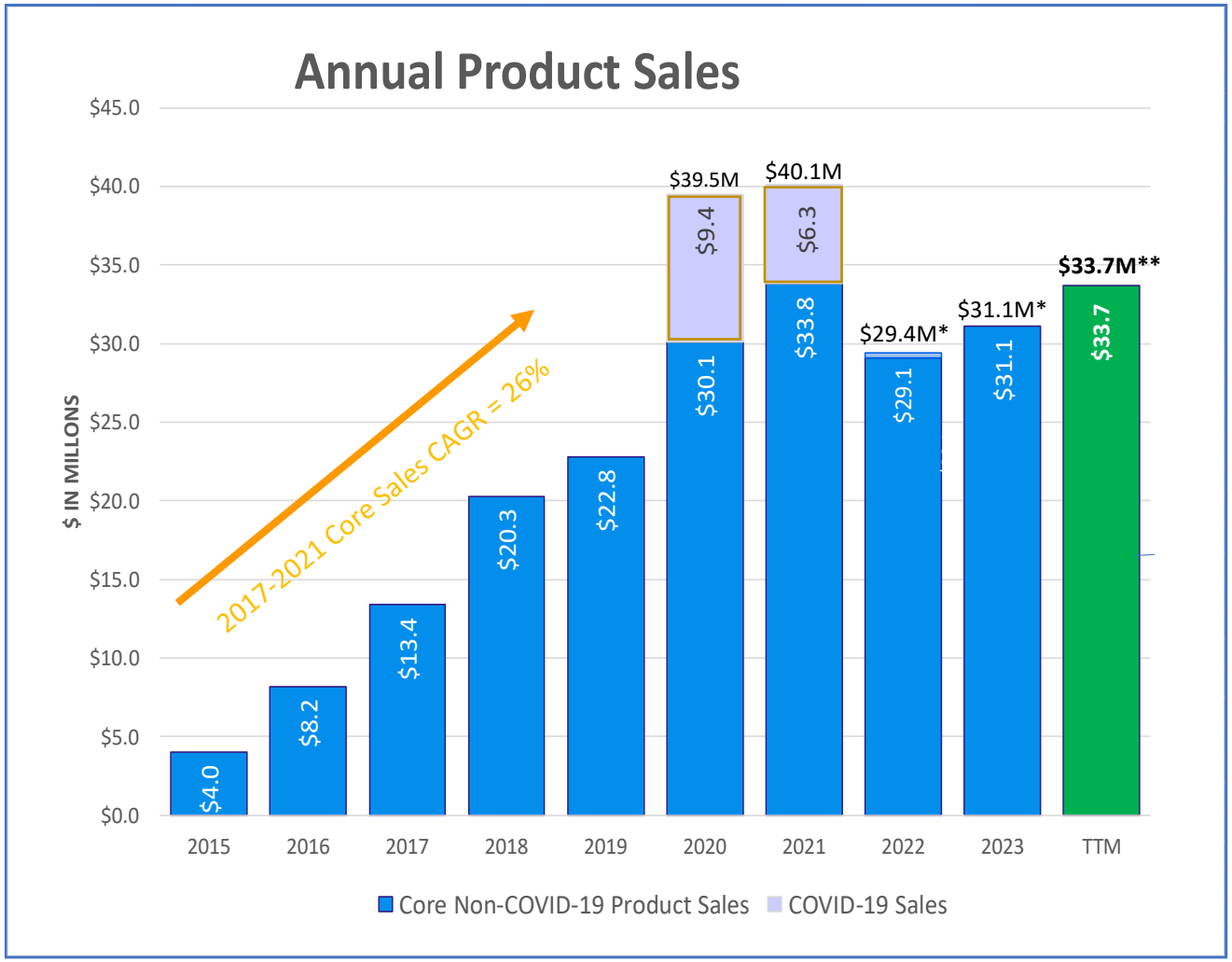
* The DrugSorb-ATR system is an investigational device that is not yet cleared/approved by FDA, Health Canada, or by any other Global Regulatory Agency and is not commercially available for sale

Financial Performance

CytoSorbents™

Annual Product Sales

CytoSorbents sells through Direct Sales in 15 countries and Distributors in 60+ others



2024: Continued Growth

- $33.7M Trailing 12-month sales**
- Q1-Q3 Product Sales of $26.4M +11% yoy
- Product gross margins of 70% YTD

* 2022 and 2023 Core Product Sales were impacted by fall of the Euro to dollar compared to 2021.
** TTM sales as of 9/30/24

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Solid Financial Performance in Q3 2024

Metric	Performance
Product revenue	$8.6M, 11% year-over-year growth
Gross margin	61% (planned slowdown and short-term manufacturing issue that was resolved in the quarter) compared to 75% in Q2 2024. 70% YTD
Operating expenses	25% year-over-year decrease
Operating loss	40% year-over-year improvement
Adjusted EBITDA	$3.6 million vs $5.6 million Q324
Cash burn	$2.7 million, down from $5 million in 2Q24

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Cash Conservation – A Top Corporate Priority

Reduced cash burn during the quarter

- Cash burn was approximately $2.7 million during the quarter versus approximately $5.0 million in Q2 2024

Cash balance as of September 30, 2024

- $12.2 million in cash
- Includes $6.5 million of restricted cash and $5.7 million in unrestricted cash

Optionality with current loan and security agreement

- Secured a $20 million loan facility in June 2024, with $10 million immediately accessible and $5 million held as restricted cash, contingent on FDA acceptance of our DrugSorb-ATR marketing application which was recently received, and receipt of $3-5 million in equity proceeds by March 31, 2025.
- A remaining tranche of $5 million is available at the Company's option between July and December 2025, conditioned on FDA marketing approval of DrugSorb-ATR

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A Simple and Compelling Value Proposition

- We continue to demonstrate solid top line performance of our core international CytoSorb business in critical care and cardiac surgery
    - Delivering improved operating efficiencies, margin expansion to drive core business toward cash flow break even in 2H 2025
- We expect key regulatory decisions for DrugSorb-ATR in the U.S. and Canada in 2025
    - First entry to the important North American market, focused on blood thinner removal for CABG surgery
    - Higher margin business expected to be catalytic to growth, profitability and future expansion
- We are developing and investing in real-world clinical evidence to support our therapies
- We continue to cultivate multiple potential drivers of growth

CytoSorbents™

CytoSorbents Corporation

NASDAQ: CTSO

Company Contact:
Dr. Phillip Chan
pchan@cytosorbents.com
908-307-0367
www.cytosorbents.com