



## **Corporate Presentation**

**September 2024**

**Nasdaq: AEMD**

[www.AethlonMedical.com](http://www.AethlonMedical.com)

# FORWARD LOOKING STATEMENTS

**This investor presentation contains forward-looking statements, as that term is defined in the Private Securities Litigation Reform Act of 1995 as contained in Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, which are subject to the “safe harbor” created by those sections. All statements other than statements of historical fact contained in this presentation are forward-looking statements, including, without limitation, statements regarding: Aethlon’s ability to enroll patients in Aethlon’s ongoing and planned clinical trials; Aethlon’s ability to successfully complete Aethlon’s clinical trials and achieve the endpoints for the trials, or any future clinical trials with Aethlon’s Hemopurifier® or to successfully develop and commercialize the Hemopurifier®; Aethlon’s ability to demonstrate the removal of nanoparticles (NPs), extracellular vesicles (EVs) and their associated cargo with the Hemopurifier®; the potential synergistic use of the Hemopurifier with chemotherapy, immunotherapy and targeted agents; Aethlon’s ability to successfully demonstrate the benefit of Aethlon’s Hemopurifier® in the organ transplant setting; and Aethlon’s ability to raise additional capital when needed and to maintain Aethlon's listing on the Nasdaq Capital Market (Nasdaq); and Aethlon's ability to establish and maintain collaborations. These forward looking statements are subject to a number of risks, uncertainties and assumptions, including, but not limited to: the timing and success of Aethlon's clinical trials and preclinical research with the Hemopurifier®; Aethlon's ability to enroll patients in Aethlon's ongoing and planned clinical trials on a timely basis, or at all; Aethlon's dependence on Aethlon's CROs and other third parties; Aethlon's ability to manufacture Aethlon's Hemopurifiers®; Aethlon's ability to obtain regulatory approvals within the timeframes expected, or at all; complications associated with product development and commercialization activities; the size and growth of the market(s) for the Hemopurifier® and the rate and degree of market acceptance thereof; Aethlon's ability to raise additional capital when needed; Aethlon's ability to remain listed on Nasdaq; Aethlon's ability to attract and retain key management, and members of Aethlon's board of directors and regulatory changes. In light of these risks and uncertainties, and other risks and uncertainties that are described in the Risk Factors section of Aethlon’s Form 10-K filed with the Securities and Exchange Commission (SEC) on June 27, 2024, subsequent filings with the SEC on Forms 10-Q and 8-K, and other filings that Aethlon makes with the SEC from time to time (which are available at <http://www.sec.gov>), the events and circumstances discussed in such forward-looking statements may not occur, and Aethlon’s actual results could differ materially and adversely from those anticipated or implied thereby. Any forward-looking statements speak only as of the date of this presentation and are based on information available to Aethlon as of the date of this presentation, and Aethlon undertakes no duty to update such information except as required under applicable law. All third-party brand names and logos appearing in this presentation are trademarks or registered trademarks of their respective holders. Any such appearance does not necessarily imply any affiliation with or endorsement of the Company.**

*This presentation shall not constitute an offer to sell or the solicitation of an offer to buy our securities.*

# Investment Highlights

- **Developing novel, patented Aethlon Hemopurifier<sup>®</sup> blood purification device**
  - Early clinical trials have demonstrated virus and EV\* clearance both in vitro and in patients
- **Two FDA “Breakthrough Device” designations**
  - The treatment of individuals with advanced or metastatic cancer
  - The treatment of life-threatening viruses that are not addressed with approved therapies
- **Focused on multiple therapeutic targets in cancer, viral disease and organ transplantation**
- **U.S. and international clinical trials**
  - Oncology trials initiating in Australia and in India
  - Open COVID-19 trial in India
- **Broad patent portfolio**
- **Experienced management team**

\* EV = extracellular vesicles, which include exosomes

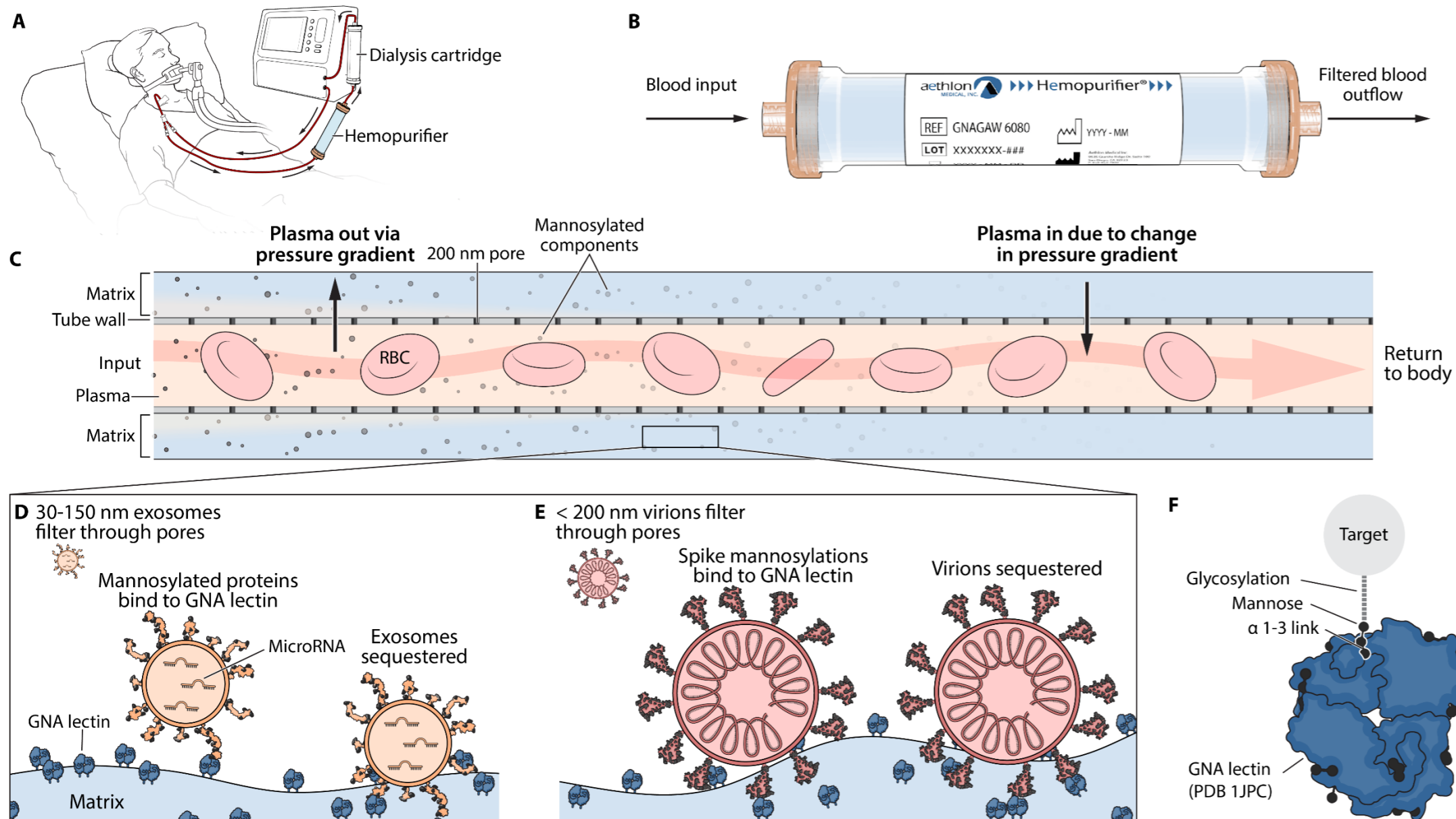
# The Aethlon Hemopurifier®

FDA Designated “Breakthrough Device” In Viral And Oncology Indications



- Safely administered in 164 Hemopurifier sessions in 38 patients<sup>1</sup>
- Proprietary, patented technology
- Has demonstrated clearance of life-threatening viruses
- Designed to clear tumor-derived EVs, and their associated cargo (Oncology)

# The Hemopurifier<sup>®</sup>'s Unique Mechanism of Action Captures Virus and Exosomes from a Patient's Blood via an Extracorporeal Circuit








## Captures enveloped viral pathogens and exosomes in circulating blood

- Hollow-fiber plasma separator filled with proprietary “affinity resin” [Figures B, C]
- Size restriction: < 200nm diameter to access “affinity resin” [Figure C]
- Affinity resin captures mannosylated nano particles (e.g., enveloped virus, exosomes) [Figure D]
- Compatible with existing dialysis or CRRT infrastructure [Figure A]

## Therapeutic Potential:

- Life-threatening viral infections, such as Ebola, H5N1, etc.
- Cancer

# Pipeline Targeting Multiple Indications

Indication		Pre-Clinical	Early Feasibility Study
Oncology	Solid Tumors failing anti-PD-1		Open for enrollment in Australia. Expected enrollment in India by end of 2024.
Viral Infections	India COVID-19		Ongoing
	HCV		Completed
	HIV		Single patient case study, Completed
	Emergency Use	COVID-19, Ebola	
Organ Transplantation	Kidney Transplantation		Pre-clinical Translational Activities

# Oncology

# The Rationale Exists For The Removal Of Tumor-derived Extracellular Vesicles By Aethlon's Hemopurifier® To Treat Cancer

EVs are small membrane-bound particles that serve as key mediators of cell-cell communication. They carry lipids, proteins, and nucleic acids, and are released by most cell types, including tumor cells.

Specifically, EVs and their cargo :

- Have been shown to contribute to the spread of cancer (metastases)<sup>1</sup>
- Play a role in immune system evasion by the tumor<sup>1</sup>
- Facilitate chemotherapy resistance<sup>1</sup>
- Interfere with antibody-based treatments (e.g., PD-1 antibody therapies such as Keytruda® and Opdivo®)<sup>2</sup>

We believe the removal of harmful EVs and their associated cargo may enhance existing cancer treatments

**The Hemopurifier® has demonstrated clearance of EVs *in vitro* and in patients<sup>3</sup>**

1. Zhang L, Yu D. Biochim Biophys Acta Rev Cancer. 2019 Apr;1871(2):455-468.

2. Rasihashemi SZ, Gavgani ER, Majidazar R, *et al.* J Cell Physiol 2021:1-13.

3. Amundson DE, Shah US, de Necochea-Campion R, *et al* Front Med (Lausanne). 2021 Oct 8;8:744141.



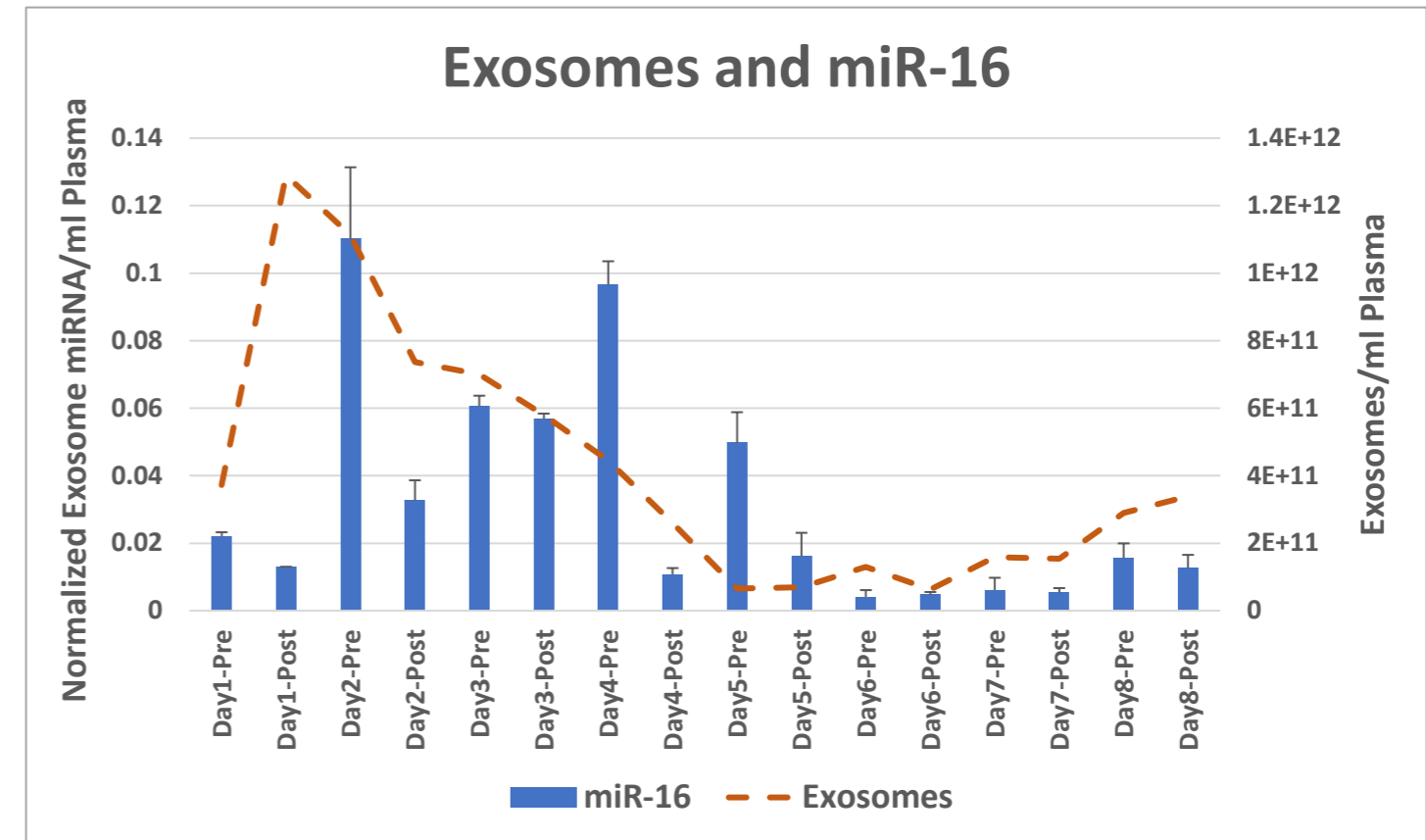
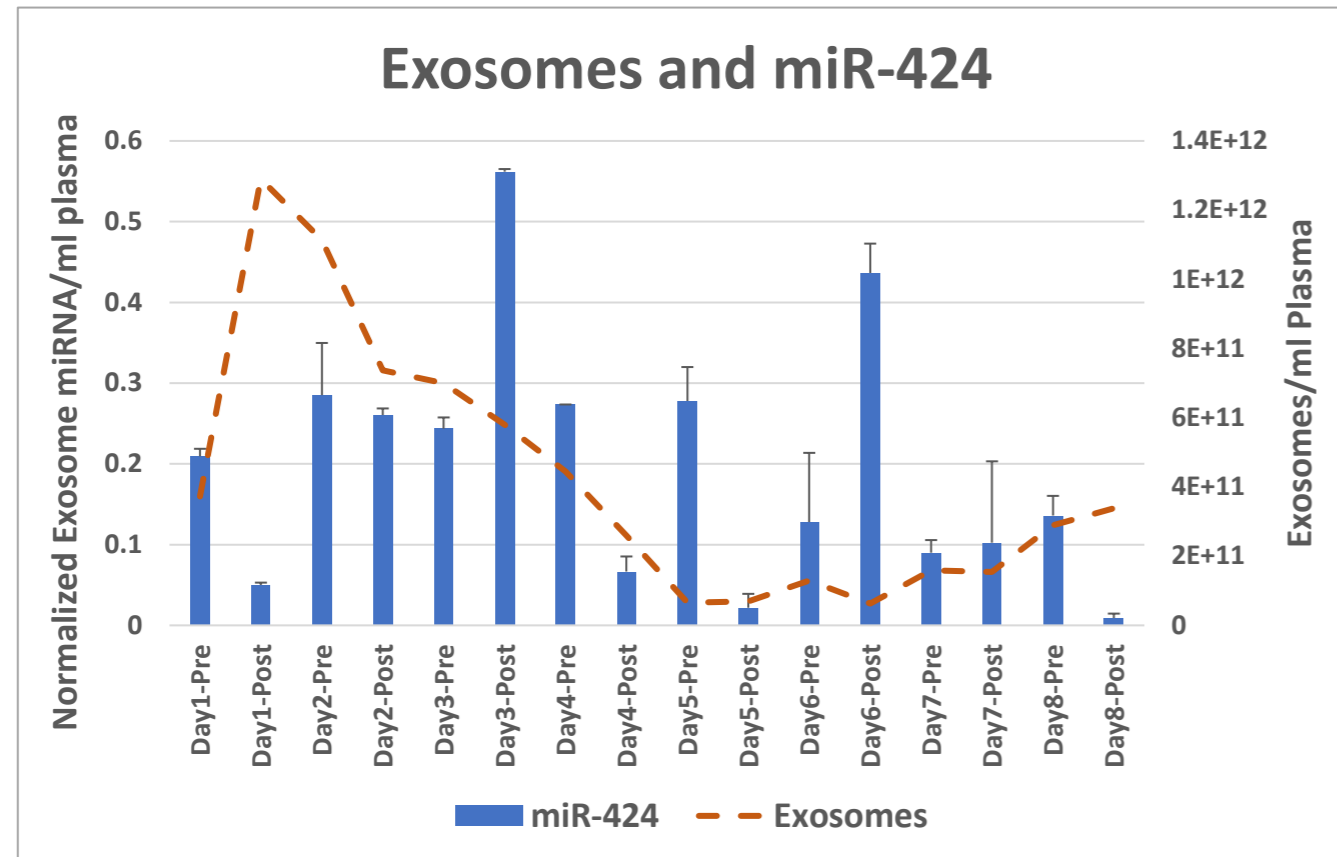
# ***In Vitro* Removal Of Cancer-Derived EVs Has Been Demonstrated<sup>1</sup>**

- Tumor derived EVs were isolated from cancer patient plasma from multiple tumor types and suspended in buffer
- Samples were circulated over a scaled-down version of the Hemopurifier<sup>®</sup>
- The scaled down Hemopurifier was effective for clearing 92-99% of EVs suspended in buffer<sup>1</sup>
- A subsequent *in vitro* study demonstrated removal of EVs directly from cancer patient plasma (internal data)

**Aethlon is exploring the therapeutic potential of removing tumor-derived EVs in cancer patients with the Hemopurifier<sup>®</sup>**

# Demonstrated In Vivo Removal of Exosomes And Noxious microRNAs by the Hemopurifier<sup>1</sup> in a COVID-19 Patient

Total EV's and Exosomal<sup>2</sup> miRNA over time:



**miR-424 is associated with COVID-associated coagulopathy (excessive blood clotting)**

**miR-16 is associated with acute lung injury**

COVID-19 plasma viral load was undetectable at onset of Hemopurifier treatment

1. Amundson DE, Shah US, de Necochea-Campion R, *et al* Front Med (Lausanne). 2021 Oct 8;8:744141.

2. Exosomes are a subpopulation of extracellular vesicles, nanosized particles, lipid bilayer-enclosed, naturally secreted from cells after the fusion of intracellular Multivesicular bodies with the plasma membrane. Di Bella MA. Biology 2022 Jun; 11(6): 804.

# Hemopurifier Oncology Clinical Trial Initiation Underway

- **Safety, feasibility and “dose finding” clinical trial in patients with stable or progressive malignancies following a 2-month run-in period of anti-PD-1 antibodies (Keytruda, Opdivo)**
- **Similarly designed trials will take place Australia and India**
- **Exploratory analyses on exosomal removal and T cell activity in HP treated subjects will inform the design of a subsequent efficacy trial**
- **Royal Adelaide Hospital (Adelaide, Australia) open for enrollment (10SEP2024)**
- **Pindara Private Hospital (Queensland, Australia) is expected to be opened for enrollment following Site Initiation Visit at end of September 2024**
- **Human Research Ethics Committee at Medanta Medicity Hospital in India approved the study (09SEP2024)**
- **Working with world-class CROs to execute the clinical trial**
  - North American Science Associates, LLC (NAMSA), a major global contract research organization (CRO), will direct the planned oncology study in Australia
  - Qualtran LLC will direct the planned oncology trial in India

# Virology

# **The Aethlon Hemopurifier® is Uniquely Positioned as an Early Treatment Option for Future Bioattacks or Pandemic Threats**

- **We believe that the next bioattack or pandemic may occur with an enveloped virus**
- **Enveloped viruses contain mannose structures that are the target for the Affinity Resin in the Aethlon Hemopurifier®**
- **During a bioattack or pandemic there will likely be delays in the time to effective anti-viral therapies and/or vaccines**
- **Removal of viruses from the bloodstream in critically ill patients may provide benefit during the time it takes to generate effective therapies (i.e. could provide a layered defense)**
- **Extensive in vitro and in vivo data with our Hemopurifier has demonstrated removal of enveloped viruses (e.g., Ebola, H5N1, H1N1, SARS-CoV-2, etc.)**

**The Hemopurifier's demonstrated removal of enveloped viruses from a patient's blood presents a unique, broad spectrum, treatment option**

# In Vitro Removal of Many Enveloped Viruses

Virus Family	Virus (medium)	Collaborator	% Removal at 1 hr	% Removal at 6 hrs	Time for 50% Viral Removal (hrs)	Detection Means	
						Infectivity Assays	PCR
Filoviridae	EboVZ wt (culture)	CDC	44	78 (5 h)	1.5		X
	EboVZmut (culture)		42	79 (4 h)	1.5		X
	Ebola (culture)	USAMRIID	21	52	5.75		X
	Ebola (culture)		21	65	3.5	PFU	
Poxviridae	Monkeypox (culture)	Battelle	44	82	1.5	PFU	
			38	90	1.75		X
Flaviviridae	HCV (plasma)	N/A	90	93 (3 h)	< 1		X
	Dengue (culture)	NIV	33	93	1.75		X
			96	99	< 1	PFU	
	Dengue (plasma)	NIV	18	85	1.75		X
			63	91	< 1	PFU	
West Nile (culture)	Battelle	11	79	3.25		X	
Orthomyxoviridae	H1N1 (culture)	N/A	55	80 (4 h)	< 1		X
	H5N1 (culture)	Battelle	45	99	1.25	TCID50	
			54	85	< 1		X
	1918 Flu (culture)	Battelle	10	26	N/A	TCID50	
63			93	< 1		X	
Togaviridae	Chikungunya (culture)	NIV	76	92	< 1	PFU	
			49	94	1		X
	Chikungunya (serum)		2	77	4.75	PFU	
Retroviridae	HIV (plasma)	N/A	61	96 (4 h)	< 1		X
	HIV (blood)	N/A	44	63 (4h)	1.5		x

- Viruses in the indicated fluid types (whole blood, plasma, serum or culture medium) were recirculated through mini-Hemopurifier columns for a minimum of 3 to 6 hours. Over the course of these experiments, aliquots of recirculating fluid were removed for analysis of viral particles remaining in the fluid (i.e. uncaptured virus). One of the following detection means was used for quantifying viral titers remaining in the fluid; 1) Plaque assays to determine the numbers of plaque forming units (PFU); 2) 50% Tissue Culture Infectious Dose (TCID<sub>50</sub>) to determine the amount of virus required to produce a cytopathic effect in 50% of inoculated tissue culture cells; 3) RNA or DNA quantification by polymerase chain reaction (PCR) or, 4) Flow cytometric immunobead assay (FCIA) to quantify virus.
- Duration for experiments in which the min-Hemopurifier® was run for <6 hours are indicated in parentheses.

# ***In Vitro* Removal of Clinically Relevant SARS-CoV-2 Variants by an Affinity Resin Bearing GNA<sup>1</sup> Has Been Demonstrated**

- **Seven SARS-CoV2 variants (10<sup>4</sup> PFU/mL) in Phosphate Buffered Saline (PBS) buffer passed 3X over column of GNA affinity resin (1g)**

**Table 2. Average Column Capture Efficiency for SARS-CoV-2 Variants**

<b>Variant ID</b>	<b>Capture Efficiency (%)</b>
<b>NR 54009 (South Africa)</b>	<b>69.3 ± 11.4</b>
<b>NR 54000 (UK)</b>	<b>69.8 ± 4.7</b>
<b>NR 54982 (Brazil)</b>	<b>89.0 ± 3.7</b>
<b>NR 55672 (B.1.672 Delta)</b>	<b>78.8 ± 1.9</b>
<b>NR 55657 (Lambda)</b>	<b>70.5 ± 3.6</b>
<b>NR 55691 (AY.1 Delta)</b>	<b>53.2 ± 11.6</b>
<b>NR 56461 (Omicron)</b>	<b>89.9 ± 2.1</b>

1. Gooldy M, Roux CM, LaRosa SP, *et al.* PLoS One. 2022 Jul 28;17(7):e0272377.

# Clinical Experience/Safety Database with Aethlon Hemopurifier in Virology

Site	Indication	# of patients	# of HP treatments
Apollo	HCV	4	24
Fortis	HCV	6	27
Sigma	HIV	1	12
Medicity	HCV	10	30
DaVita	HCV	9	49
University Hospital Frankfurt	Ebola (Emergency Use)	1	1
Hoag Newport Beach	COVID-19 (Emergency Use)	1	1
Scripps Chula Vista	COVID-19 (Emergency Use)	2	9
LSU	US COVID -19 trial	1	4
Medanta Medicity	India COVID-19 trial	1	4
<b>Total</b>		<b>36</b>	<b>161</b>



# Evidence of SARS-CoV-2 Capture and Clearance by Hemopurifier®<sup>1</sup>

- 67yo male with multiple organ system dysfunction due to documented SARS-CoV-2 infection despite all standard therapies
- Patient underwent 6-hour 15 minute Hemopurifier session between (0645-1300 hours) following Independent Physician Assessment, IRB approval, and informed Consent
- **No cartridge evidence of hemolysis or thrombosis**
- **Patient Removed from Hemopurifier® without incident**
- Blood pressure noted to start dropping after new CRRT circuit placed with precipitous drop in Oxygenation and BP at 1400 hours
- Patient developed refractory shock and hypoxia and expired due to a PEA arrest at 1549 hours

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## VIRAL COPIES NORMALIZED TO RNase P

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	<u>Plasma (Copies/mL)</u>
Pre-HP plasma	<b>1558.6</b>
Post-HP plasma	<b>648.1</b>

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**58% reduction of SARS-CoV-2  
plasma viral load**

# **COVID-19 India Trial Update: Treatment Of SARS-CoV-2 Infection In Humans With Hemopurifier® Device**

- **Regulatory agency in India approved the use of Hemopurifier® devices for clinical trial use**
- **Studying ICU patients with severe or life-threatening disease**
- **Designed to include up to 15 patients at up to three centers**
- **One patient enrolled and treated**
- **Added a second hospital site in India in 2023**
- **Trial remains open for enrollment**

# **Pre-Clinical: Renal Transplantation**

# Rationale for Potential Role of Hemopurifier in Renal Transplantation

- Renal Transplantation is the goal standard treatment for end-stage renal disease
- Significant shortage of available donor kidneys as well 25% discard rate of recovered kidneys<sup>1</sup>
- Ischemia Reperfusion injury leads to delayed graft function (DGF) in 30-55% of renal transplant patients receiving kidneys from deceased donors<sup>2,3</sup>
- Hypothermic machine perfusion of recovered kidneys prior to transplantation has resulted in improved outcomes<sup>4</sup>
- It has been hypothesized that Controlled Oxygenated Rewarming (COR) during machine perfusion may further improve outcomes and increase the time to assess viability of recovered organs<sup>5</sup>
- Extracellular vesicles and microRNAs have been detected during machine perfusion and are associated with DGF and allograft rejection suggesting that they are a therapeutic target<sup>6,7</sup>
- As the Aethlon Hemopurifier has previously been demonstrated to remove extracellular vesicles and microRNAs it was hypothesized that the device would be able to accomplish this on renal perfusates
- A proof on concept trial was designed testing the Hemopurifier on end perfusates following machine perfusion on discarded kidneys

1. Mohan S, Yu M, King KL, Husain SA. *Kidney Int Rep.* May 2023;8(5):1109-1111.

2. Wang CJ, Wetmore JB, Israni AK.. *Hum Immunol.* Jan 2017;78(1):9-15

3. Zens TJ, Danobeitia JS, Levenson G, et al. *Clin Transplant.* Mar 2018;32(3):e13190.

4. Tingle SJ, Figueiredo RS, Moir JA, Goodfellow M, Talbot D, Wilson CH.. *Cochrane Database Syst Rev.* Mar 15 2019;3(3):CD011671.

5. Zlatev H, von Horn C, Minor T. *Grafts. Biomolecules.* Dec 14 2021;11(12)doi:10.3390/biom11121880

6. Zhao X, Li Y, Wu S, et al. *Biomed Pharmacother.* Sep 2023;165:115229.

7. Gremmels H, de Jong OG, Toorop RJ, et al. *Transplant Direct.* Sep 2019;5(9):e484.

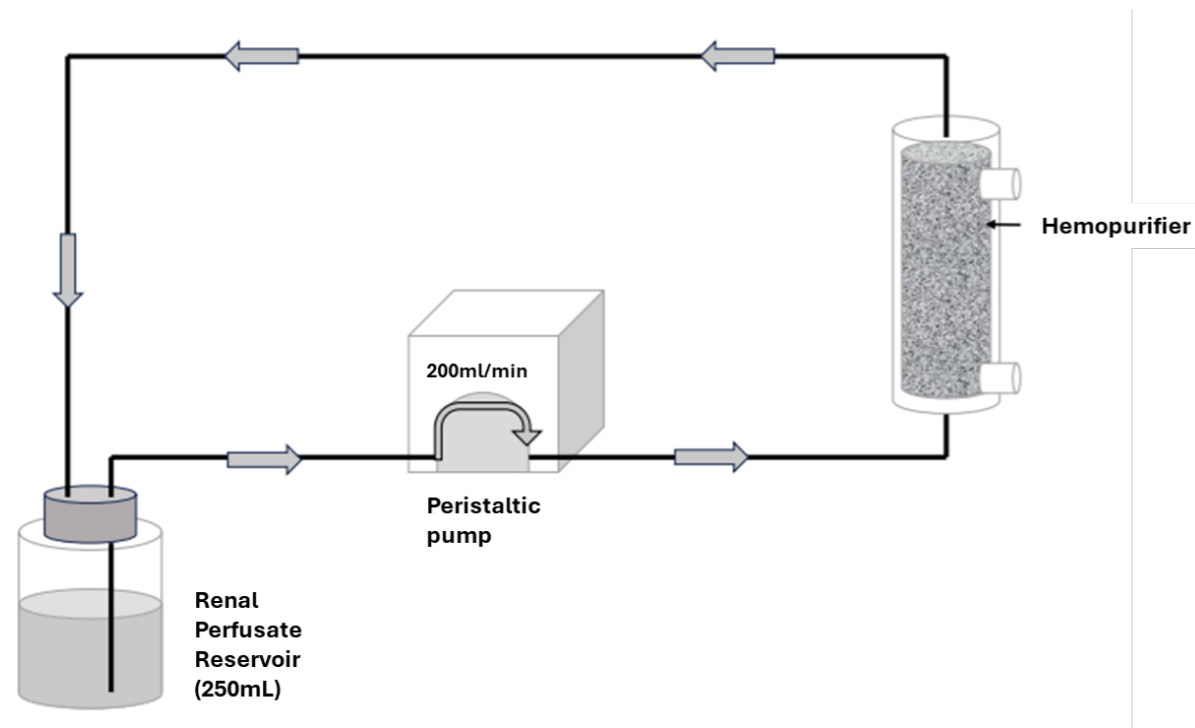
# In Vitro Data Highlights the Hemopurifier's® Potential in Kidney Transplantation



The Hemopurifier removes extracellular vesicles and microRNAs from renal perfusates following controlled oxygenated rewarming of discarded donor kidney

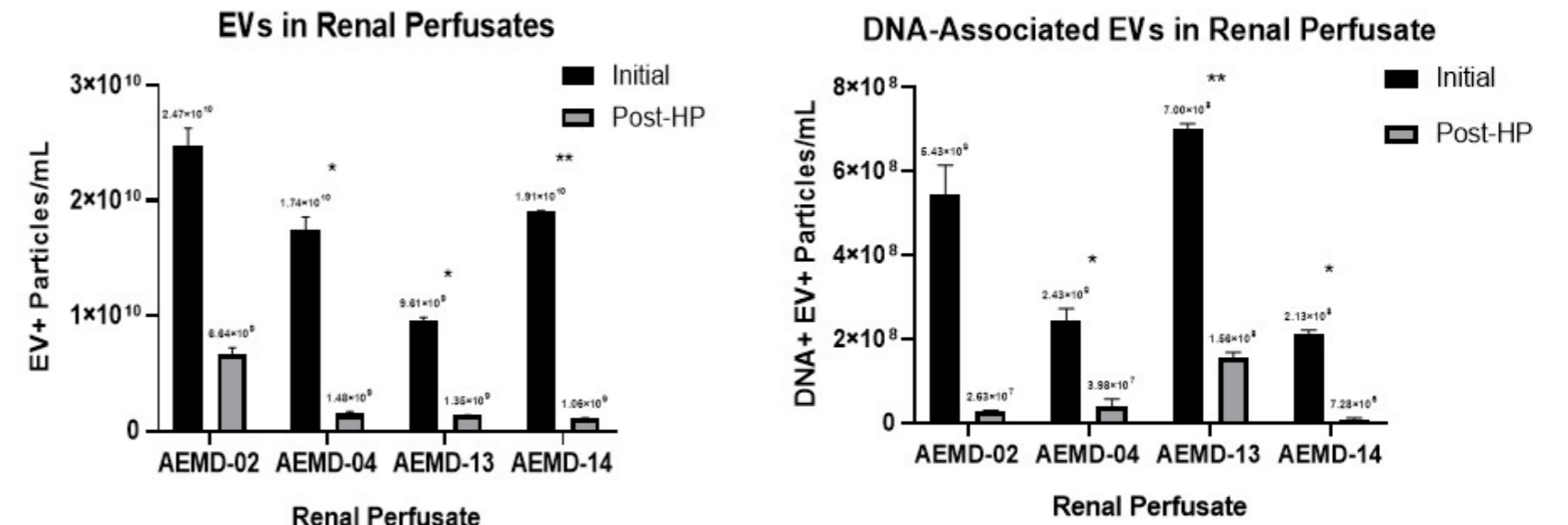
Rosalía de Necochea Campion, Miguel Pesqueira, Paul Vallejos, Cameron McCullough, Alessio Bloesch, Steven P. La Rosa

doi: <https://doi.org/10.1101/2024.08.23.609252>



## Experimental Treatment of Renal Perfusates with Aethlon Hemopurifier

- End perfusates obtained following Controlled Oxygenated Rewarming of 4 discarded kidneys
- 250 ml of perfusate circulated over Hemopurifier at 200ml for 24 passes
- Perfusates were analyzed for EVs, dsDNA associated with EVs and microRNAs



The Aethlon Hemopurifier significantly depletes EVs and DNA-associated EVs from renal perfusates

The Aethlon Hemopurifier significantly depletes microRNAs from renal perfusates

Probe Name	Accession #	24P vs. ctrl	FDR (p-value)	Percent Reduction
hsa-let-7a-5p	MIMAT0000062	-7.4	0.00	-86.5
hsa-miR-148b-3p	MIMAT0000759	-1.78	0.04	-43.7
hsa-miR-148a-3p	MIMAT0000243	-2.36	0.04	-57.7
hsa-miR-29b-3p	MIMAT0000100	-4.48	0.05	-77.7
hsa-miR-99a-5p	MIMAT0000097	-3.75	0.05	-73.3

# Pre-Clinical Renal Transplantation Activities- Conclusions

- Large amounts of extracellular vesicles (EVs) and microRNAs are released from recovered organs during machine perfusion
- The Aethlon Hemopurifier was capable of removal of EVs, double stranded DNA associated with EVs and microRNAs that have been implicated in renal pathology from end perfusates following machine perfusion
- Next step to consider would be to compare mediator removal, renal function and histopathology in a dynamic machine perfusion circuit with or without the Hemopurifier on discarded kidneys
- Ultimately, a clinical trial would be required to examine if the incorporation of the Hemopurifier into machine perfusion improves important clinical outcomes such as DGF, graft survival and rejection rates

# Aethlon's patent portfolio provides protection until as early as 2025 (issued patents) and as late as 2044 (if pending applications are granted)

## United States

- **Issued Patents:**
  - 3 US patents issued covering extracorporeal removal of microvesicular particles, patent protection until 2029
  - 1 US patent issued covering removal of viruses, patent protection until 2025
- **Patent Applications:**
  - 2 US applications pending covering removal of Covid-19 viral particles and associated exosomes
  - Patent protection until 2042 if granted

## International

- **Issued Patents:**
  - 24 foreign patents covering exosomes and microvesicular particle removal
  - Patent protection extending to 2031 in Germany, France, Great Britain, and Spain
  - Patent protection extending to 2027 in Canada, Switzerland, Italy, Netherlands, Sweden, Hong Kong, Denmark and Ireland
- **Patent Applications:**
  - 12 pending foreign applications directed to removal of Covid-19 viral particles and associated exosomes, patent protection to 2042 if granted
  - 1 pending international application directed to removal of exosomes, ectosomes, miRNAs, circulating nucleic acids, and viral particles associated with tissues selected for transplantation, patent protection to 2044 if granted

# Senior Management Team Has Extensive Experience With Both Medical Devices And Therapeutics

## **James B. Frakes, MBA, Interim CEO & Chief Financial Officer**

- Over 30 years public company CFO experience
- Investment banking & venture capital

## **Guy Cipriani, MBA, Chief Operating Officer**

- 20 years transactional and operational experience with public and private biotech & device companies

## **Steven P. LaRosa, MD, Chief Medical Officer**

- 26 years of Industry-sponsored clinical research experience in infectious diseases, critical care, oncology, inflammation, and extracorporeal devices (Selective Cytopheretic Device, TORAYMYXIN, SERAPH and HEMOPURIFIER)



## **Key Financial Highlights**

- **Approximately \$9.1 million in cash as of June 30, 2024**
- **No debt on balance sheet**
- **Approximately 13.9 million shares outstanding as of September 13, 2024**
- **Market capitalization of \$5.4 million as of September 13, 2024**
- **Trading on Nasdaq Capital Market under the ticker “AEMD”**

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