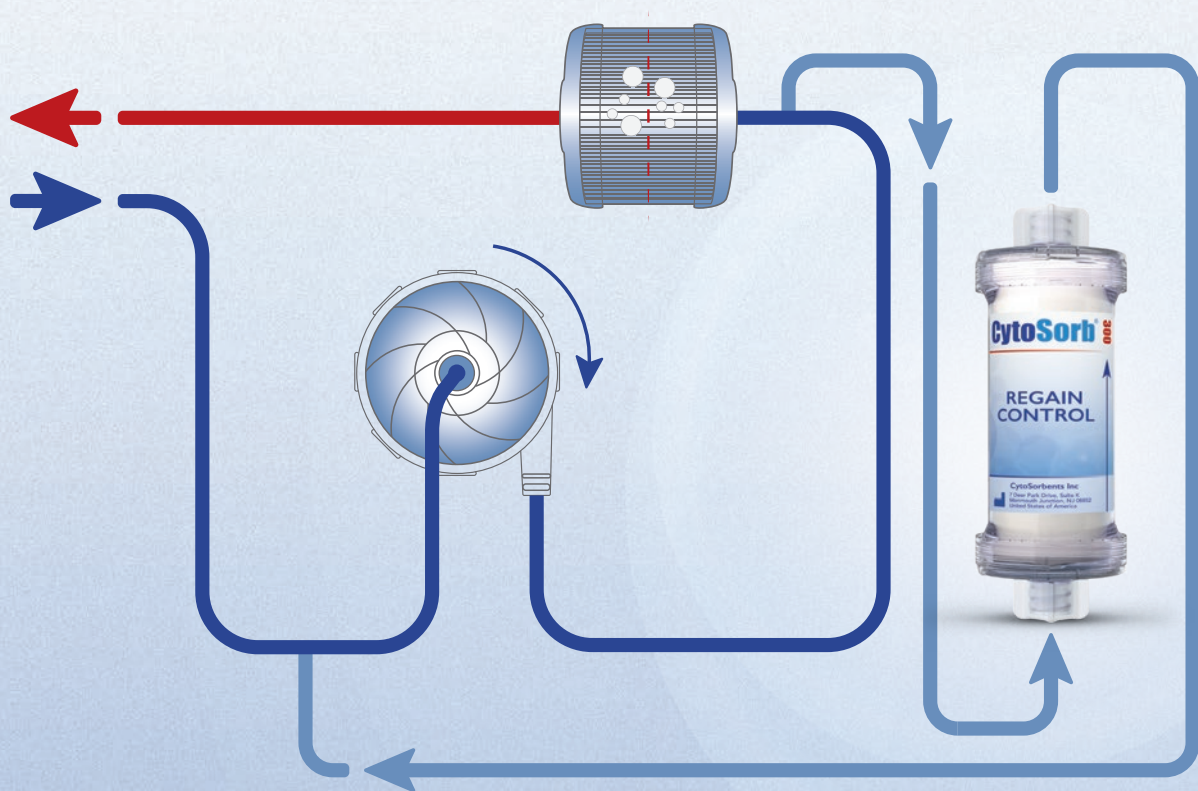


## ECMO plus CytoSorb - Enhance your therapeutic options



### With CytoSorb you can pursue these therapeutic targets:

(supported by clinical and preclinical \* data)

- Reduce hyperinflammation <sup>(1,2,7)</sup>
- Stabilize hemodynamics <sup>(1,3,5,6,7)</sup>
- Decrease vasopressor demand <sup>(1,3,5,6,7)</sup>
- Protect capillary integrity <sup>(4)</sup>



## Rationale to combine ECMO/ECLS with CytoSorb

### When to consider CytoSorb in an ECMO/ECLS patient?





- ✓ Indication for extracorporeal lung or heart and lung support
- ✓ Acute state
- ✓ Signs of hyperinflammation
- ✓ Unable to stabilize patient within a maximum of 24hrs of ECMO/ECLS

Treat primary or secondary hyperinflammation

### How to proceed

Add CytoSorb to ECMO/ECLS circuit

### Therapeutic goals with CytoSorb

-  Reduce hyperinflammation <sup>(1,2,7)</sup>
-  Stabilize hemodynamics <sup>(1,3,5,6,7)</sup>
-  Decrease vasopressor demand <sup>(1,3,5,6,7)</sup>
-  Protect capillary integrity <sup>(4)</sup>

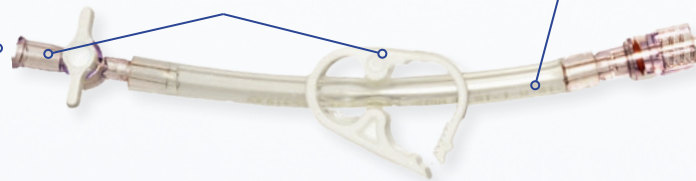
## Unique CytoSorb-ECMO-adapter for safe and easy set up

No open ports where air can enter the ECMO system

Redundant safety mechanisms prevent unintended air insertion into ECMO system

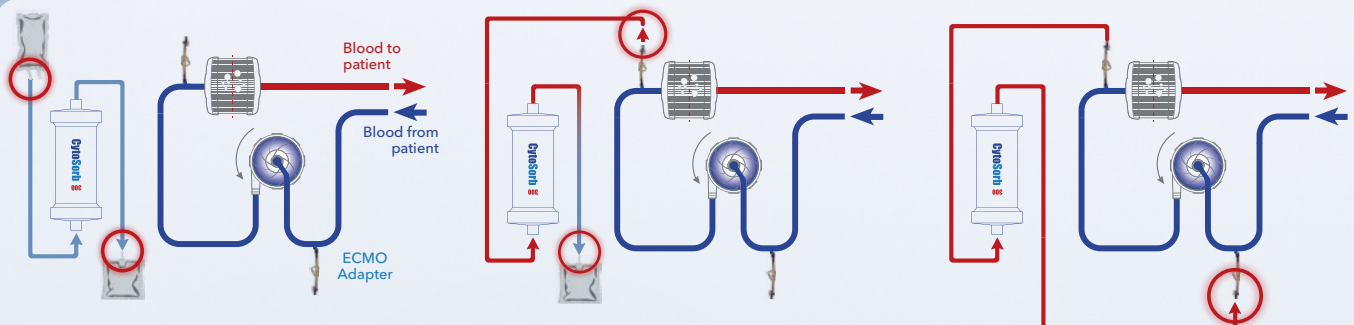
Kinking not possible

360° rotatable, torsion free lines



US patent pending

## Integration of CytoSorb into ECMO/ECLS circuit



- ① Setup ECMO with ECMO-Adapter
- ② Prime CytoSorb with saline

- ③ Connect CytoSorb post-pump and fill adsorber with blood

- ④ Connect CytoSorb pre-pump to close bypass circuit

### References (\* preclinical data):

1. Traeger, K et al., (2016). "Cytokine Reduction in the Setting of an ARDS-Associated Inflammatory Response with Multiple Organ Failure." *Case Rep Crit Care* 2016: 9852073. (Use of CytoSorb in CRRT circuit)
2. Bruenger F et al., (2015). "First successful combination of ECMO with cytokine removal therapy in cardiogenic septic shock: A case report." *Int J Artif Organs* 38(2): 113-116. (Use of CytoSorb in CRRT circuit)
3. Lees NJ et al., (2016). "Combination of ECMO and cytokine adsorption therapy for severe sepsis with cardiogenic shock and ARDS due to Panton-Valentine leukocidin-positive Staphylococcus aureus pneumonia and H1N1." *Int J Artif Organs* 19(4): 399 - 402. (Use of CytoSorb in CRRT circuit)
4. David S et al., (2017). "Effect of extracorporeal cytokine removal on vascular barrier function in a septic shock patient." *J Intensive Care*. Jan 21;5:12. (Use of CytoSorb in CRRT circuit)
5. Marek, S., et al. (2017). "ECMO and cytokine removal for bridging to surgery in a patient with ischemic ventricular septal defect - a case report." *Int J Artif Organs* 40(9): 526 - 529. (Use of CytoSorb in CRRT circuit)
6. Kogelmann, K., et al. (2017). Successful treatment with CytoSorb in a case of septic shock, ARDS, multiorgan failure and purpura fulminans due to Acinetobacter baumannii pneumonia. 8th International Congress "Sepsis and Multiorgan Dysfunction". Weimar, Germany, Springer. (Use of CytoSorb in CRRT circuit)
7. Datzmann T et al (2017) Extracorporeal membrane oxygenation and cytokine adsorption, *Journal of Thoracic Disease*, epub

Visit <http://literature.cytosorb.com> for an overview of all references

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