# Vascular BioSciences Announces Preclinical Research Demonstrating Improved PH and Sepsis Survival with CAR Peptide

*CEO of Vascular BioSciences, David Mann, makes connection between current research and COVID-19 applications*

GOLETA, CA, USA, June 4, 2020 /EINPresswire.com/ -- Vascular BioSciences announces preclinical research findings that could potentially aid the effort to discover effective treatments for COVID-19. These recently published findings were scheduled to be presented at the American Thoracic Society's annual meeting in Philadelphia in May 2020 that was cancelled due to the coronavirus pandemic.

Vascular BioSciences releases findings in Abstract A7856 – Cyclic CAR Peptide Modulates the Effects of Treprostinil and Macitentan in Experimental Pulmonary Hypertension. (1) This research demonstrated significant improvements in PH survival and hemodynamics when CAR was added sublingually to existing PH regimens. In addition to previous demonstrated synergy with approved PH drugs sildenafil, riociguat, epoprostenol, selexipag, and experimental PAH drugs fasudil and imatinib, these results demonstrate CAR peptide is a potent adjuvant that can significantly improve all classes of existing PAH therapies. This research was conducted in collaboration with Dr. Paul B. Yu, Dr. Aaron Waxman and colleagues at Brigham and Woman's Hospital and at Harvard Medical School, both in Boston, Massachusetts.

Vascular BioSciences also presented important new findings on a novel sepsis treatment in Abstract A2595 – Improved Survival After Surgical Sepsis in Rats Using a Novel Vascular Homing Peptide to Target Endothelial Delivery of Hydrocortisone. (2) In the sepsis "gold standard" 2CLP surgical model, the addition of CAR peptide to low-dose hydrocortisone significantly increased survival over low-dose hydrocortisone alone (Kaplan Meier log rank p =.008). This research was conducted in collaboration with Dr. Nadir Yehya and Dr. Scott Weiss from Children's Hospital of Philadelphia in Philadelphia, Pennsylvania.

"Together, these findings demonstrate the unique ability of our CAR peptide to selectively enhance a broad range of therapies and improve survival in preclinical models of both pulmonary hypertension (PH) and sepsis," said the CEO David Mann. "Additionally, these results were obtained whether CAR was administered sublingually or intravenously, demonstrating CAR's unique potential as a pan-therapeutic adjuvant for two very difficult to treat diseases."

These results have particular relevance to the pressing need to develop effective COVID-19 therapies since sepsis and septic shock are the end stage clinical manifestations of COVID-19, driving patient mortality. There is an urgent need for therapies that reduce mortality due to COVID-19. Data show that 100% of COVID-19 non-surviving patients develop sepsis, as opposed to 42% of survivors. (3) Once COVID-19 patients develop this complication, they need better sepsis treatments than the ones currently in use.

Administering low-dose corticosteroids was demonstrated to lower the death rate for sepsis, sepsis shock, and ARDS with other beneficial effects including significantly shortening the time in the ICU and the time on the ventilator, and lower vasopressor requirement, without an increase in side effects. (4-6) It was also found to reduce mortality and shorten hospitalization time for patients with community-acquired pneumonia including SARS, H1N1, and other virus-associated respiratory diseases. (7-9) Recently, NIH recommended the use of low-dose corticosteroid treatment in COVID-19 patients. (10) However, corticosteroid therapy is imprecise and can have off-target effects on immune suppression, myopathy, and hyperglycemia that expose patients to harm. Thus, despite biological plausibility and clinician enthusiasm for corticosteroids, the ability to safely and effectively target this therapy remains a critical gap in current sepsis and COVID-19 treatments.

“Research on our CAR peptide has shown that it has the potential to be an extremely effective therapy for sepsis by targeting corticosteroids to the damaged tissue,” said Mr. Mann. “We are hopeful that these findings can be translated to the clinic to help lower the morbidity and mortality of sepsis and COVID-19. We are working hard to help provide more effective therapies for patients with COVID-19 that develop sepsis, one of its most life-threatening complications.”

About Vascular BioSciences
Vascular BioSciences, a diversified biomedical company with operations in California and North Carolina, provides targeted solutions for serious diseases in order to enhance and prolong human life.
Vascular BioSciences makes interventional catheters to obtain endoarterial biopsies, provides molecular diagnostic services, and through its majority owned subsidiary VBS Pharmaceuticals, develops targeted therapeutics for patients with difficult-to-treat diseases.
For more information about VBS is available at www.vascularbiosciences.com
For more information, please contact dmann@vascularbiosciences.com

References
1. https://www.atsjournals.org/doi/pdf/10.1164/ajrccm-conference.2020.201.1_MeetingAbstracts.A7856
2. https://www.atsjournals.org/doi/pdf/10.1164/ajrccm-conference.2020.201.1_MeetingAbstracts.A2595
3. Zhou, F. et al. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. Lancet 395, 1054–1062 (2020).
4. Keh, D. et al. Effect of Hydrocortisone on Development of Shock Among Patients With Severe

Sepsis: The HYPRESS Randomized Clinical Trial. JAMA 316, 1775–1785 (2016).
5. Venkatesh, B. et al. Adjunctive Glucocorticoid Therapy in Patients with Septic Shock. N. Engl. J. Med. 378, 797–808 (2018).
6. Marik, P. E. Glucocorticosteroids as Adjunctive Therapy for Acute Respiratory Distress Syndrome and Sepsis? Yes, But Not as Monotherapy. Critical care medicine vol. 45 910–911 (2017).
7. Chen, R.-C. et al. Treatment of severe acute respiratory syndrome with glucosteroids: the Guangzhou experience. Chest 129, 1441–1452 (2006).
8. Li, H. et al. Effect of low-to-moderate-dose corticosteroids on mortality of hospitalized adolescents and adults with influenza A(H1N1)pdm09 viral pneumonia. Influenza Other Respi. Viruses 11, 345–354 (2017).
9. Siemieniuk, R. A. C. et al. Corticosteroid Therapy for Patients Hospitalized With Community-Acquired Pneumonia: A Systematic Review and Meta-analysis. Ann. Intern. Med. 163, 519–528 (2015).
10. https://covid19treatmentguidelines.nih.gov/concomitant-medications/?referringSource=articleShare

David Mann
Vascular BioSciences
+1 (858) 273-2744
email us here