TrippBio Publishes Data Comparing PanCytoVir™ versus Oseltamivir Against H5N1 and H7N9 Pandemic Influenza

PanCytoVir™ therapy provided 100% protection against lethal H5N1 infection, complete elimination of H5N1 from the lungs, and a greater reduction in inflammation

TrippBio, Inc.

JACKSONVILLE, FL, USA, January 22, 2024 /EINPresswire.com/ -- TrippBio, Inc. (TrippBio), a clinical development-stage biopharmaceutical company developing antiviral treatments, announces the publication of results comparing the in vitro activity profile of PanCytoVir™ versus oseltamivir against H5N1 and H7N9 influenza virus strains. An in vivo study comparing PanCytoVir™ versus oseltamivir against a lethal H5N1 infection found 100% protection against death for PanCytoVir™-treated animals compared to oseltamivir. PanCytoVir™-treated mice showed 100% clearance of detectable virus from the lungs and a significant reduction in pulmonary inflammatory cytokines, indicative of a potent anti-inflammatory response. The study results were published in the journal Viruses (https://doi.org/10.3390/v16010152).

> These data confirm the potent antiviral activity of PanCytoVir™ against the highly pathogenic H5N1 virus and illustrates the significant anti-inflammatory effect on pulmonary cytokine expression."
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> *Dr. David E. Martin*

David E. Martin, PharmD, and CEO of TrippBio, Inc., stated, "We are pleased to announce the publication of these data demonstrating the potency of PanCytoVir™ against the highly pathogenic H5N1 and H7N9 influenza virus. Not only did we see a significant survival advantage over oseltamivir, but we also observed a more potent antiviral and pulmonary cytokine response. We look forward to launching our Phase 2 program for influenza virus later this year."

Ralph A. Tripp, PhD, Professor & Georgia Research Alliance Chair in Vaccine and Therapeutic Development, University of Georgia and co-founder commented, “This study demonstrates the in vitro potency of PanCytoVir™ against two highly pathogenic influenza A virus strains and confirms the in vivo activity profile against H5N1, an influenza virus with pandemic potential.”

H5N1 Mouse Study

Groups of 5 BALB/c female mice (6–8 weeks old) were intranasally infected with a lethal dose of H5N1 A/Vietnam/1203/04 (VN/1203-H5N1) and followed for up to 7 days. Immediately following infection, animals were assigned to one of five groups: 1) uninfected control, 2) infected, vehicle only, 3) PanCytoVir™ 10 mg/kg, 4) PanCytoVir™ 100 mg/kg, or 5) Oseltamivir 10 mg/kg. All doses were administered by gavage twice daily for 3 days. Blood and lung tissue were collected on Days 3, 5, and 7. All untreated and infected mice died by day 5, with one mouse (20%) in each oseltamivir or PanCytoVir™ 10mg/kg dosing groups losing one mouse before day 7. All mice treated with PanCytoVir™ 100mg/kg survived. When the amount of infectious virus in the lungs of the infected and treated mice was evaluated on Day 3 and Day 5, the mice in the PanCytoVir™ 100 mg/kg group eliminated all virus while mice treated with PanCytoVir™ 10 mg/kg reduced infectious virus in the lung by 4 logs at day 3, and by 3 logs at day 5. Oseltamivir reduced infectious virus in the lung by 2 logs at day 3 and 1.5 logs at day 5. PanCytoVir™ treatment was also associated with a greater reduction in the inflammatory response, with significant differences observed in IL-6 and TNF-α concentrations between treatment groups.

PanCytoVir™

PanCytoVir™ suspension is based on probenecid, which is approved by the FDA for treating the hyperuricemia associated with gout and can be used as an adjuvant to therapy with penicillin-derived antibiotics for prolonging drug plasma levels. PanCytoVir™ is a favorable antiviral drug candidate as it is commercially available and has high plasma concentrations with a benign clinical safety profile. It has demonstrated potent activity against SARS-CoV-2 [1], influenza [2], and RSV [3] in vitro and preclinical infection models. The antiviral activity of PanCytoVir™ against influenza is more potent, in vitro than Tamiflu® against contemporary influenza A and B strains [4]. H7N9 and H5N1 are highly pathogenic avian influenza A viruses. [5], The potency difference was also observed in vivo with both influenza A and B strains. Recent data in patients with symptomatic, mild-to-moderate COVID-19 showed that PanCytoVir™ treatment significantly reduced SARS-CoV-2 viral load, and significantly more treated patients had complete resolution of COVID-19-related symptoms by Day 10 post-infection versus placebo [6]. This is important as the antiviral mechanism of action against SARS-CoV-2 is shared with influenza, suggesting an increased probability of success in clinical studies. PanCytoVir™ was granted a US patent (#11,116,737) on 14 September 2021 for “Methods of Using Probenecid for Treatment of Coronavirus Infections” with additional international filings ongoing. A Phase 3 clinical trial for COVID-19 is currently being developed, and the clinical program for influenza is expected to start in 2024, with planning underway for an IND filing for RSV soon. A novel oral suspension is being developed to enable flexible dosing across the different patient populations impacted by these

three respiratory viruses with a single product.

1. Murray J, Hogan RJ, Martin DE, et al. Probenecid Potently Inhibits SARS-CoV-2 Replication In Vivo and In Vitro. Scientific Reports 2021:11;18085 (https://doi.org/10.1038/s41598-021-97658-w).
2. Perwitasari O, Yan X, Johnson S et al. Targeting Organic Anion Transporter 3 with Probenecid as a Novel Anti-Influenza A Virus Strategy. Antimicrob Agents Chemother 57(1), 475-483 (2013). (https://doi.org/10.1128%2FAAC.01532-12).
3. Murray J, Bergeron H, Shepard J, et al. Probenecid Inhibits Respiratory Syncytial Virus (RSV) Replication. Viruses 2022, 14, 912. (https://doi.org/10.3390/v14050912).
4. Murray J, Martin DE, Sancilio FD, and Tripp RA. Antiviral Activity of Probenecid and Oseltamivir on Influenza Replication. Viruses 2023:15;2366. (https://doi.org/10.3390/v15122366).
5. Murray J, Martin DE, Hosking S, Orr-Burks N, Hogan RJ, and Tripp RA. Probenecid Inhibits Influenza A(H5N1) and A(H7N9) Viruses In Vitro and in Mice. Viruses 2024, 16, 152. (https://doi.org/10.3390/v16010152).
6. Martin DE, Pandey N, Chavda P, Singh G, Sutariya R, Sancilio F, and Tripp RA. Oral Probenecid for Nonhospitalized Adults with Symptomatic, Mild-to-Moderate COVID-19. Viruses 2023:15;1508. (https://doi.org/10.3390/v15071508).

About TrippBio, Inc.

TrippBio, Inc. is a Jacksonville, Florida-based, clinical development-stage biopharmaceutical company dedicated to commercializing new applications of therapeutics to fight infectious diseases with an emphasis on viral diseases with current efforts focused on the identification of drugs to combat infections such as the SARS-CoV-2 virus that causes COVID-19. TrippBio is founded on the scientific research of Ralph Tripp, Ph.D., Georgia Research Alliance Chair and Professor at the University of Georgia. The University of Georgia Research Foundation is a major shareholder of TrippBio, Inc.

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