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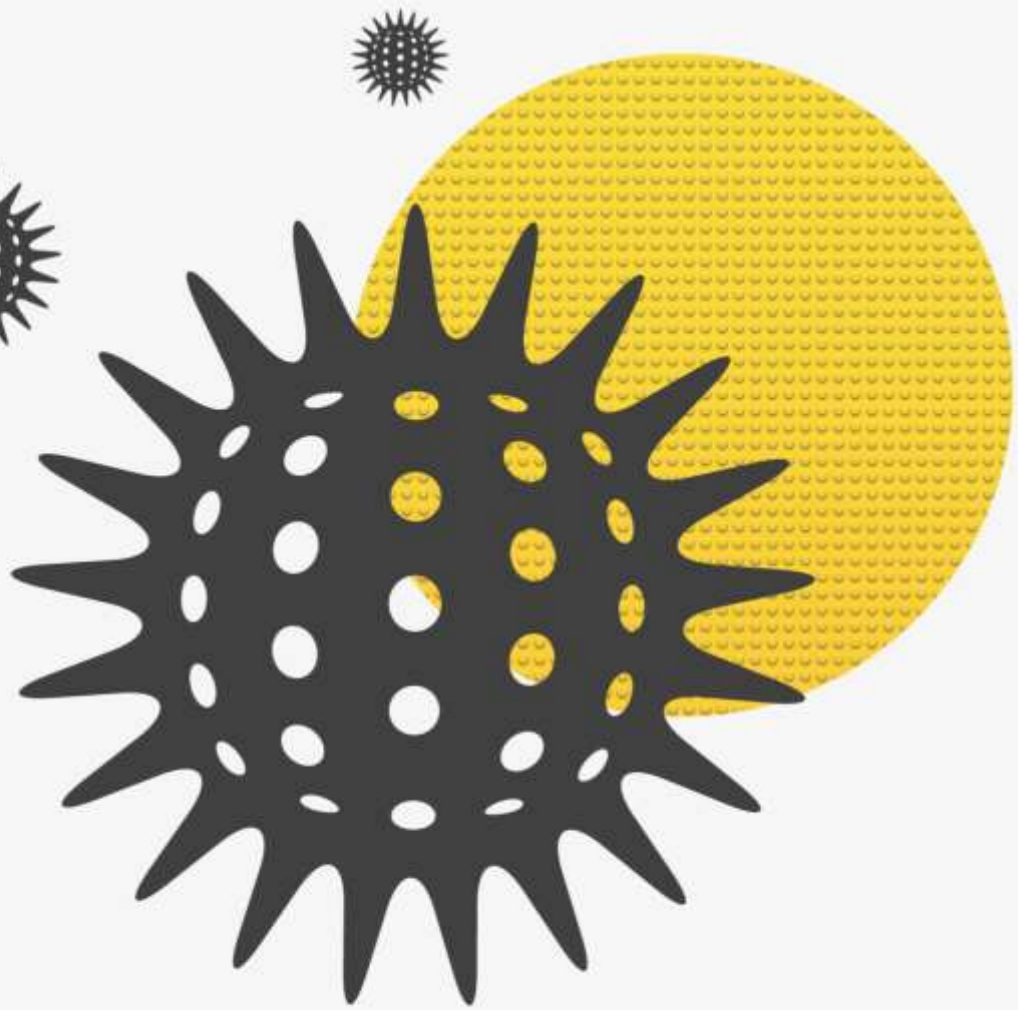
COVID-19 LEADS



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1. Repurposed Drugs

Pfizer Shares Safety Data on Azithromycin-Hydroxychloroquine Combination Company Follows Up on Recently Made Commitment as Part of Five-Point Plan NEW YORK, March 25, 2020-Pfizer Inc. (NYSE: PFE) today followed up on the recently made commitment to share data and knowledge as part of our five-point plan to battle the COVID-19 pandemic. The company is sharing information that could benefit the many companies and organizations who are working quickly to provide solutions to combat this unprecedented healthcare crisis.

Recently, a group of French researchers disclosed results of an independent study in France exploring the use of hydroxychloroquine in 20 patients for the potential treatment of COVID19 disease. Among those 20 patients, six also received Pfizer's product, azithromycin (Zithromax®). In that study, the proportion of patients with virologic cure after 6 days (as indicated by negative PCR tests) was higher in the 20 patients who received hydroxychloroquine as compared to the 16 controls. The highest rate of cure was seen in those that also received azithromycin—all six of those patients achieved virologic cure. In light of these preliminary findings, and as Pfizer interprets the data in the context of previous research into other infectious diseases, the company would like to share additional information that may facilitate the further exploration of this combination.

Ampio is Preparing an Expanded Access FDA protocol to Study Nebulized Ampion as a Treatment for Moderate to Severe Acute Respiratory Distress Syndrome Associated with COVID-19

ENGLEWOOD, Colo., March 24, 2020 /PRNewswire/ -- Ampio Pharmaceuticals, Inc. (NYSE American: AMPE), a pre-revenue development stage biopharmaceutical company focused on the development of immunology based therapies to treat prevalent inflammatory conditions for which limited treatment options exist, announced today that it is preparing an expanded access FDA protocol to study potential benefit of nebulized treatment with Ampion in SARSCov-2 ("COVID-19") induced Acute Respiratory Distress Syndrome ("ARDS"), an immediately life-threatening condition.

The anticipated aim of a preliminary protocol for FDA review would be to evaluate patients with moderate to severe ARDS, triggered by COVID-19, for (1) reduced ventilator time; (2) reduction in mortality and (3) improvements in oxygenation parameters compared to nonAmpion treated patients.

Genentech Announces FDA Approval of Clinical Trial for Actemra to Treat Hospitalized Patients With Severe COVID-19 Pneumonia

South San Francisco, CA -- March 23, 2020 –
Genentech, a member of the Roche Group (SIX: RO, ROG; OTCQX: RHHBY), announced today the U.S. Food & Drug Administration (FDA) has approved a randomized, double-blind, placebo-controlled Phase III clinical trial in collaboration with the Biomedical Advanced Research and Development Authority (BARDA) to evaluate the safety and efficacy of intravenous Actemra® (tocilizumab) plus standard of care in hospitalized adult patients with severe COVID-19 pneumonia.

Additionally, to further support U.S. COVID-19 response efforts, Genentech will provide 10,000 vials of Actemra to the U.S. Strategic National Stockpile for potential future use at the direction of the U.S. Department of Health and Human Services (HHS). The company has robust business continuity and mitigation strategies in place, and current U.S. supply of Actemra for approved indications is not expected to be impacted. Genentech has also been working with distributors to manage product supply to enable both Genentech and our distribution partners to quickly fill orders to meet patient needs.

Partner Therapeutics Announces Initiation of Clinical Trial to Evaluate Leukine® in Patients with COVID-19 Associated Respiratory Illness

Lexington, MA – March 24, 2020 /PRNewswire/ — Partner Therapeutics, Inc. (PTx) announced that Leukine® (sargramostim, rhu-GM-CSF) is being assessed in the SARPAC trial (sargramostim in patients with acute hypoxic respiratory failure due to COVID-19 – EudraCT #2020-001254-22) at University Hospital Ghent to treat patients with respiratory illness associated with COVID-19. Major medical centers in Germany, Italy and Spain are considering joining the study. The study will evaluate the effect of Leukine on lung function and patient outcomes.

Results from First Clinical Study Using Danoprevir to Treat Naive and Experienced COVID-19 Patients

HANGZHOU and SHAOXING, China, March 24, 2020 /PRNewswire/ -- Ascletis Pharma Inc. (HKEX code: 1672) announces today the first clinical study using Ganovo®(danoprevir) to treat naive and experienced COVID-19 patients was published in medRxiv.

The data from this small-sample clinical study showed that danoprevir combined with ritonavir is safe and well tolerated in all patients. After 4 to 12-day treatment of danoprevir combined with ritonavir, all eleven moderate COVID-19 patients enrolled, two naive and nine experienced, were discharged from the hospital as they met all four conditions as follows: (1) normal body temperature for at least 3 days; (2) significantly improved respiratory symptoms; (3) lung imaging shows obvious

absorption and recovery of acute exudative lesion; and (4) two consecutive RT-PCR negative tests of SARS-CoV-2 nucleotide acid (respiratory track sampling with interval at least one day).

Viriom donates Elpida to Chinese and Russian governments for experimental use against COVID-19; also working with global health authorities to determine the efficacy and safety of Elpida and its other clinical candidates AV5080, AV5124 and AV5126 against COVID-19

SAN DIEGO, March 24, 2020 /PRNewswire/ -- Viriom Inc today announces the company's activities to address the COVID-19 public health crisis, including supporting the experimental use of the HIV medicine, Elpida (elsulfavirine) and Viriom's experimental flu medicines AV5080, AV5124 and AV5126 to determine their efficacy in the treatment of COVID-19. The company is collaborating with Chinese Center for Disease Control and Prevention and the Ministry of Health in Russia and select health authorities and institutions in US and globally to determine the antiviral activity of Elpida and several other drug candidates against COVID-19. Viriom is evaluating Chinese and Russian claims that Elpida could be effective in COVID-19 treatment.

2. Drugs in Development

2.1 Therapeutic - Oligonucleotide

Mateon report positive results for multiple COVID-19 drug candidates
OT-101 and two additional candidates demonstrated viral inhibition activity against coronavirus

AGOURA HILLS, Calif., March 25, 2020 (GLOBE NEWSWIRE) -- Mateon Therapeutics, Inc. (OTCQB:MATN) (“Mateon”) dedicated to the development of OT-101, a TGF-Beta antisense drug candidate, today provided an update on its rapid antiviral response program targeting coronaviruses, initially targeting COVID-19. OT-101 continued to show significant activity against coronaviruses and in the new testing results, two additional therapeutic oligonucleotides designed to target COVID-19 also demonstrated potent anti-viral activity.

The candidates were all designed to work synergistically to avoid resistant mutations frequently seen with viral infections. OT-101 and the other candidates work by inhibiting virus binding to its target, thereby stopping the virus from replicating itself and stopping viral induced pneumonia, which often leads to patient complications. The results of the new studies came through joint efforts between Mateon and its partner, Golden Mountain Partners, LLC (GMP), which have teamed up to build an international world class program for rapid response against COVID-19 and future epidemics.

The Company has begun preparations to submit an Investigational New Drug Application (IND) to the Food and Drug Administration (FDA) for OT-101 against COVID-19 to expedite testing in COVID-19 patients.

2.2 Therapeutic – Monoclonal Antibody

Vir Biotechnology Proceeding with Two Clinical Development Candidates for COVID-19

SAN DIEGO, March 25, 2020 (GLOBE NEWSWIRE) – Vir Biotechnology, Inc. (Nasdaq: VIR) today announced that it has identified multiple human monoclonal antibody (mAb) development candidates that neutralize SARS-CoV-2, the virus responsible for COVID-19.

“We are pleased with the rapidity of our progress and excited to move two development candidates into human testing as soon as possible,” said George Scangos, Ph.D., CEO, Vir. “Stopping this disease will take a combination of prevention and treatment approaches. At Vir, we are fortunate that our existing antibody platform gave us a running start against COVID-19, and we have the internal and partnered capabilities to work on multiple approaches.”

In an effort to save time, Vir’s lead development candidate was transferred at-risk to WuXi Biologics (stock code: 2269.HK) and Biogen Inc. (Nasdaq: BIIB) several weeks ago, and Vir anticipates that human trials can begin within 3-5 months. The ability of this antibody to neutralize the SARS-CoV-2 live virus has been confirmed in two separate laboratories. The antibody binds to an epitope on SARS-CoV-2 that is shared with SARS-CoV-1 (also known as SARS), indicating that the epitope is highly conserved. Vir believes that the conservation of this epitope will make it more difficult for escape mutants to develop.

2.3 Vaccine

Sorrento Launches Novel I-Cell™ COVID-19 Cellular Vaccine Program

SAN DIEGO, March 25, 2020 (GLOBE NEWSWIRE) -- Sorrento Therapeutics, Inc. (Nasdaq: SRNE, "Sorrento") today announced it has been working on a novel decoy cellular vaccine for COVID-19 (STI-6991) and is in active discussions with the FDA’s Center for Biologics Evaluation and Research under IND#019724 regarding the required IND-enabling studies, CMC (chemistry, manufacturing and controls), clinical protocol and end-points for potential accelerated approval. Upon receiving guidance from the FDA, Sorrento intends to submit a full package for an IND filing that would enable human clinical trials to start as soon as possible.

The decoy cell strategy (I-Cell™, which means immune-training cells) has been conceptualized and developed by Sorrento scientists utilizing expertise acquired in the fight against cancer. Sorrento expects to utilize a well-known replicating cell line

(human erythroleukemia, K562) to incorporate SARS-CoV-2's spike protein or its S 1 domain onto the cellular membrane so that the viral antigen is presented on a decoy cell surface to elicit both T cell and B cell immunities.

The selected cell line has been used safely in cancer vaccination programs and is well characterized (clinical trials using K562 expressing granulocyte-macrophage colonystimulating factor have been used as a tumor vaccine). Upon expression of the viral protein as a surface marker, the decoy cell "looks like" the virus to a healthy person's immune system. After irradiation to prevent the replication of the cells, the cells can be administered by intramuscular injection as a vaccine. In the presence of this "look alike" training cell, the recipient may develop a protective immune response and produce corresponding neutralizing antibodies against the SARS-CoV-2 virus. If the vaccinated subject is later exposed to the SARS-CoV-2 coronavirus, his or her T cell immunity and neutralizing antibodies are expected to block the spike protein from attaching to the ACE2 (angiotensin converting enzyme 2) on the normal human cell surface, thus potentially attenuating or preventing the SARS-CoV-2 infection which causes COVID-19 disease.

NeuroRx to discuss investigational drug for COVID-19 related Acute Respiratory Distress at Solebury Trout Virtual Global Healthcare Conference on March 26, 2020

WILMINGTON, DE and RADNOR, PA / ACCESSWIRE / March 25, 2020 / NeuroRx, a clinical stage biopharma company focused on development of CNS drugs, today announced an expansion of scope to include the co-development of a potentially lifesaving drug for COVID-related Acute Respiratory Distress Syndrome (ARDS). Aviptadil (RLF-100) is a synthetic form of Vasoactive Inhibitory Polypeptide, developed by Relief Therapeutics of Geneva, Switzerland.

Because of the enormous focus in the military and veterans community on suicidal depression and PTSD, NeuroRx assembled a board that included senior military and policy leaders. Our previous experience in national health security policy made the collaboration with Relief around development of its promising asset a natural partnership.

Deaths associated with COVID-19 are primarily caused by ARDS in which the intense cytokine (inflammatory storm) unleashed in the lung makes it impossible for the lung to transmit oxygen, even with mechanical ventilation, said Jonathan Javitt, M.D., M.P.H., Chief Executive Officer of NeuroRx, who has also been named Vice Chair of Relief Therapeutics. RLF-100 demonstrated important phase 1 proof of concept data and was awarded orphan drug designation for ARDS in 2005 at a time when the average American had never heard of ARDS. Today, ARDS has become a critical national priority.

Windtree to Pursue Clinical Study of Lung Injury Treatment in COVID-19 Patients with its KL4 Surfactant Therapy

WARRINGTON, Pa., March 24, 2020 /PRNewswire/ -- Windtree Therapeutics, Inc. (OTCQB: WINT), a biotechnology and medical device company focused on developing drug product candidates and medical device technologies to address acute cardiovascular and pulmonary diseases, today announced it is planning to study its proprietary KL4 surfactant to potentially mitigate the pulmonary effects of severe COVID-19 infection. The Company is actively pursuing several non-dilutive opportunities to fund this project, including government agencies and private foundations.

"Patients with COVID-19 pneumonia may progress to severe respiratory failure requiring supplemental oxygen and mechanical ventilation. This acute lung injury, known as acute respiratory distress syndrome (ARDS), has no approved therapies and is associated with significant morbidity, mortality and healthcare resource utilization." said Steve Simonson, M.D., Senior Vice President and Chief Medical Officer of Windtree Therapeutics. "The COVID19 virus infects the specific cells that make pulmonary surfactant and is believed to result in inadequate levels of functional surfactant. We believe this mechanism of injury may differentiate COVID-19 lung injury from other etiologies of ARDS and is the basis for a potentially important role for our KL4 surfactant. Numerous preclinical studies have shown positive effects of our KL4 surfactant in various models of severe lung injury and our clinical studies have demonstrated beneficial effects in respiratory distress syndrome in premature infants leading us to believe there may be potential to provide benefit in patients with severe COVID-19 lung injury."

Government of Canada providing financial support towards Medicago's COVID-19 vaccine development

QUEBEC CITY, March 24, 2020 - Medicago, a biopharmaceutical company headquartered in Quebec City, welcomes the support from the Government of Canada for the development of a vaccine against COVID-19. On March 12, Medicago announced the successful production of coronavirus Virus-LikeParticle (VLP) in just 20 days after receiving the virus gene, thus having a viable vaccine candidate against COVID-19.

This Government support will allow Medicago to rapidly move from preclinical testing to clinical trials, as well as scaling up production for pandemic response.

"We are grateful to the Government of Canada without whom the advancement of this project through the final phase of development would not be possible. The cost

of such development is a major obstacle for growing companies like ours which must spend hundred of millions of dollars to bring a product to market," said Dr. Bruce D. Clark, President and CEO of Medicago. "COVID-19 was not on any company's radar, and that's why financial support from governments is so important."

3. Business Alliances

3.1 Co-Development

HaloVax Enters into Co-Development Agreement with Hoth Therapeutics

NEW YORK, March 27, 2020 /PRNewswire/ -- HaloVax, LLC a biopharmaceutical company and special purpose subsidiary of Voltron Therapeutics, Inc., announced they have reached an agreement with Hoth Therapeutics, Inc (NASDAQ: HOTH) (previously released) to advance an application of VaxCelerate, a self-assembling vaccine (SAV) platform licensed from the Vaccine and Immunotherapy Center (VIC) at Massachusetts General Hospital (MGH), to develop a vaccine designed to protect patients at risk of Coronavirus (COVID-19) infection. Voltron Therapeutics, Inc. has acquired an exclusive license to this technology.

HaloVax and Hoth, with the support of MGH, will work jointly on bringing this SAV to patients at risk of being infected with COVID-19. The VaxCelerate platform was developed to improve patient outcomes by engaging the immune system to identify and remove infectious agents. The technology initially demonstrated proof of concept in Lassa Fever, an emerging infectious disease, with the support of the Department of Defense (DoD). [REF] These same principles are being applied to developing a vaccine against the COVID-19 pandemic.

VaxCelerate offers two unique elements to combat the Coronavirus - one fixed immune adjuvant and one variable immune targeting. VaxCelerate offers several potential advantages over other compounds in combination therapy. In infectious applications, it allows rapid development against viruses and other pathogens. The vaccine focuses on both DNA and internal / external mutated proteins providing the immune system with more potential targets to attack.

Sanofi and Translate Bio collaborate to develop novel mRNA vaccine candidate against COVID-19

PARIS and LEXINGTON, MASS. - March 27, 2020 – Sanofi Pasteur, the vaccines global business unit of Sanofi, and Translate Bio (NASDAQ: TBIO), a clinical-stage messenger RNA (mRNA) therapeutics company, will collaborate to develop a novel mRNA

vaccine for COVID19. This collaboration leverages an existing agreement from 2018 between the two companies to develop mRNA vaccines for infectious diseases.

Translate Bio has begun to produce multiple mRNA constructs and will use its mRNA platform to discover, design, and manufacture a number of SARS-CoV-2 vaccine candidates. Sanofi will provide deep vaccine expertise and support from its external research networks to advance vaccine candidates for potential further development. Translate Bio has established 100 gram single-batch production with its clinical-stage mRNA therapeutics platform. Buildout is underway of dedicated manufacturing space through a contract manufacturing partner to accommodate at least two 250-gram batches per month. Depending on the final human dose, the mRNA platform of Translate Bio has excellent promise to meet the future demands for a pandemic response.

Sorrento Therapeutics Enters into Co-Development Agreement with SmartPharm Therapeutics

SAN DIEGO and BOSTON, March 23, 2020 (GLOBE NEWSWIRE) -- In response to the government call for rapidly deployable countermeasures, Sorrento Therapeutics, Inc. (Nasdaq: SRNE, Sorrento) and SmartPharm Therapeutics Inc. (SmartPharm) today announced a research and development collaboration to develop a next-generation, gene-encoded antibody vaccine for COVID-19. The collaboration will utilize monoclonal antibodies against SARS-CoV-2 virus discovered and/or generated by Sorrento that will be encoded into a gene for delivery utilizing SmartPharm's non-viral nanoparticle platform.

"Over the past 10+ years, Sorrento has extensively utilized the G-MABTM Library, one of the largest and most diverse fully human antibody libraries in the biopharma space, for discovering potent immuno-oncology and anti-infective antibodies against over 100 drug targets. In the effort to more quickly resolve the global COVID-19 crisis, our company has initiated a rapidly accelerated program for the identification of potent neutralizing antibodies against SARS-CoV-2 coronavirus antigens that may be used for either treatment or prophylaxis," said Henry Ji, CEO of Sorrento Therapeutics. "We expect our platform to produce many candidate neutralizing antibodies for SmartPharm to incorporate into its powerful gene delivery platform. We look forward to our partnership with SmartPharm as part of our goal to make a meaningful impact in this truly global effort."

Junshi Biosciences Announces Co-Development Agreement with IMCAS to Advance Neutralizing Antibodies as Potential Novel Treatment for COVID-19

SHANGHAI, China, March 20, 2020 (GLOBE NEWSWIRE) -- Junshi Biosciences (HKEX: 1877) announced that it has recently signed a collaboration agreement with the Institute of Microbiology of the Chinese Academy of Sciences (IMCAS) to jointly develop neutralizing antibodies, a potential novel treatment for COVID-19.

Junshi Biosciences and IMCAS have been working together to explore innovative treatments for the novel coronavirus, COVID-19. Currently, they have obtained multiple strains of neutralizing antibodies (NAb) capable of effectively blocking viral invasion in laboratory assays and have conducted animal experiments. Preliminary in vitro and in vivo studies have verified the blocking activity of the NAb strains. It is in the process of verifying the preclinical toxicology and in vivo activity of the antibodies in order to file Investigative New Drug (IND) applications with domestic and overseas regulatory agencies.

3.2 Research Agreement

Twist Bioscience Partners with Vanderbilt University Medical Center to Supply Critical Products and Identify Antibody Therapeutics for COVID-19

SOUTH SAN FRANCISCO, Calif.--(BUSINESS WIRE)--Mar. 26, 2020-- Twist Bioscience Corporation (NASDAQ: TWST), a company enabling customers to succeed through its offering of high-quality synthetic DNA using its silicon platform, today announced a collaboration with Vanderbilt University Medical Center (VUMC) to supply synthetic genes and antibodies for the development of therapies for COVID-19. In addition, Twist Biopharma, a division of Twist Bioscience, will provide custom antibody drug discovery libraries and will screen the libraries for potential antibody therapeutics that would treat patients with COVID19.

“We are moving very quickly to employ our knowledge of infectious disease and robust computational biology platform to identify new therapeutics for COVID-19,” said Robert Carnahan, Ph.D., associate director of the Vanderbilt Vaccine Center at VUMC. “Twist is the only synthetic DNA provider who can deliver the quantity and quality of DNA we need for our projects rapidly. We are working with them not only as a vendor for synthetic genes and antibodies, but have expanded our relationship to leverage the Biopharma capabilities, which we believe complement our antibody discovery efforts.”

VUMC has been working with Twist Bioscience since 2018 when VUMC received a grant from the U.S. Defense Advanced Research Projects Agency (DARPA) for the Pandemic Prevention Platform (P3). The P3 program focuses on preparing for

pandemics and specifically reducing the time required to develop protective antibodies from lab to field. The objective of the program is to go from outbreak to a clinic-ready therapeutic in 60 days, versus the standard timeline of one to two years. VUMC is now leveraging the learning from the P3 program to pursue therapeutic antibodies to treat COVID-19.

IsoPlexis and Institute for Systems Biology partner to uncover the functional immune mechanisms behind COVID-19 response

BRANFORD, Conn. and SEATTLE, March 24, 2020 /PRNewswire/ -- IsoPlexis, the leader in functional cellular proteomics, and the Institute for Systems Biology (ISB) announced a partnership mapping functional immune responses at the single cell level to study COVID-19.

Uncovering functional immune responses using IsoPlexis technologies have underpinned key breakthroughs in therapies that harness the immune system across disease areas. The data from this partnership will be released as soon as possible and made globally available to researchers combatting the disease.

Heat Biologics and University of Miami Developing Proprietary COVID-19 Diagnostic Test Under Collaborative Research Agreement

DURHAM, NC / ACCESSWIRE / March 23, 2020 / Heat Biologics, Inc. ("Heat") (NASDAQ: HTBX), a clinical-stage biopharmaceutical company specialized in the development of novel therapeutic and prophylactic vaccines, including one for coronavirus COVID-19, today reported that it is collaborating with the University of Miami to develop a proprietary UM COVID-19 point-of-care diagnostic test.

The new, patient-friendly test will require a simple pharyngeal throat swab to deliver on-thespot results on a paper strip in under 30 minutes. In contrast, current tests for COVID-19 usually rely on the use of expensive thermal-cyclers, with results in five to six hours or require blood draws to detect antibodies, indicative of previous exposure. Preliminary research suggests the new test is specific to the novel coronavirus, with no cross-reaction to previous coronavirus subtypes. The test is designed to enable cost-effective manufacturing amenable for mass production and deployment around the world.

CEL-SCI to Develop LEAPS COVID-19 Immunotherapy in Collaboration with University of Georgia Center for Vaccines and Immunology

CEL-SCI Corporation (NYSE American: CVM) announced today it has signed a collaboration agreement with the University of Georgia's Center for Vaccines and Immunology to develop LEAPS COVID-19 immunotherapy. CEL-SCI's immunotherapy candidate aims to treat patients at highest risk of dying from COVID-19. The collaboration will commence with pre-clinical studies based on the experiments previously conducted with LEAPS immunotherapy in collaboration with the National Institutes for Allergies and Infectious Diseases (NIAID) against another respiratory virus, H1N1, involved in the 2009 H1N1 flu pandemic. Those successful studies demonstrated that LEAPS peptides, given after virus infection has occurred, reduced morbidity and mortality in mice infected with H1N1.

It is suggested, based on studies with H1N1, that a LEAPS coronavirus - SARS-CoV-2 immunotherapy may reduce or arrest the progression of the SARS-CoV-2 virus infection and prevent tissue damage from inflammation resulting from lung infection by the virus. By stimulating the correct immune responses to the COVID-19-causing virus without producing unwanted inflammatory responses associated with lung tissue damage, LEAPS immunotherapy may be particularly beneficial in those patients who are at highest risk of dying from COVID-19.

3.3 Manufacturing Agreement

Ology Bioservices, Inovio Partner To Manufacture COVID-19 DNA Vaccine With $11.9 Million Department of Defense Grant

PLYMOUTH MEETING, Pa. and ALACHUA, Fla., March 24, 2020 /PRNewswire/ -- Ology Bioservices Inc., a biologics contract development and manufacturing organization (CDMO), and Inovio Pharmaceuticals Inc., (NASDAQ: INO) developing DNA medicines for infectious diseases and cancer, announced today that the Department of Defense (DOD) has awarded Ology Bioservices with a contract valued at $11.9 million to work with Inovio on DNA technology transfer to rapidly manufacture DNA vaccines. This work is supported by the Office of the Assistant Secretary of Defense for Health Affairs with funding from the Defense Health Agency.

Under this program, Ology Bioservices will work with Inovio Pharmaceuticals to manufacture Inovio's DNA vaccine (INO-4800) for prevention of infection with the COVID-19 virus. The aim of the program is to rapidly and efficiently deliver the vaccine to the Department of Defense for upcoming clinical trials.

3.4 Licensing Agreement

BioSig subsidiary NeuroClear acquires license for a broad-spectrum anti-viral agent that may treat COVID-19. Laboratory results demonstrate high level of activity against COVID-19 in cell culture

Westport, CT, March 25, 2020 (GLOBE NEWSWIRE) -- BioSig Technologies, Inc. (NASDAQ: BSGM) ("BioSig" or the "Company"), a medical technology company commercializing a proprietary biomedical signal processing platform, today announced that its majority-owned subsidiary NeuroClear Technologies, Inc. acquired the rights to develop a novel pharmaceutical to treat Coronavirus Disease 2019 (COVID-19).

In a preliminary internal review, the orally administered, broad-spectrum anti-viral agent Vicromax(tm) demonstrated strong activity against COVID-19 in cell cultures in laboratory testing. In this analysis, Vicromax(tm) was added to a tissue culture assay for SARS-CO-2 coronavirus (the causative agent for COVID-19) and an anti-viral effect was observed, which led to a reduction of over 90% of infectious viruses. The Company intends to pursue development of this agent for the treatment of COVID-19 through FDA-approved clinical trials.

The product candidate already completed Phase I and three Phase II trials in other indications, and underwent extensive animal testing and human clinical experience. The Company expects that Vicromax(tm) could be used alone or in a combination with other anti-viral agents or immune modulators.

Sorrento Therapeutics Enters into Licensing Agreement with Mabpharm

Sorrento Therapeutics, Inc, a biopharmaceutical company developing new therapies for cancer, has entered into an exclusive license agreement with Mabpharm Limited, an antibody biopharmaceutical company, for the clinical development and commercialization of the ACEMAB fusion protein for the potential treatment of COVID-19, the disease caused by the SARS-CoV-2 virus.

Mabpharm has generated a fusion protein (CMAB020) that binds to the spike protein of the SARS-CoV-2 virus.

Sorrento has been granted an exclusive license to develop and commercialize the ACE-MAB product candidate in the North American and European markets.<P/>ACE-MAB is a proprietary bi-specific fusion protein that binds to the spike protein of coronaviruses, including SARS-CoV-2 and SARS-CoV, which is expected to block SARS-

CoV-2 from binding and infecting respiratory epithelial cells or ACE2-expressing cells to interrupt the viral life cycle.<P/>ACE-MAB is in the cGMP cell line development stage by our strategic partner, Mabpharm Limited, and could be ready for large-scale production in Mabpharm's 30,000 sq.m cGMP facilities in China for human clinical trials and commercialization upon receipt of requisite regulatory approvals.

Designed as a bi-specific fusion protein, ACE-MAB has two functional arms. One arm (Ab) is a fully human antibody that targets the spike protein of SARS-CoV-2 with high affinity. The other arm (TR) is a truncated ACE2 protein that binds to a different epitope of the spike protein. The ACE-MAB fusion protein could also block the receptor binding domain (RBD) with CD147 to mitigate lung inflammation and cytokine storm. The dual-arm design could be a unique advancement, potentially providing binding to the SARS-CoV-2 virus that is sufficient to prevent the virus from invading normal human cells. ACE-MAB retains the ACE2 enzymatic function, which could provide benefits such as reduced vasoconstriction and increased blood flow to infected lung tissue. The ACE2 arm competes with RBD binding to respiratory epithelial or other cells. It should preserve the ACE2 enzymatic activity, which is important in maintaining normal blood pressure and healthy blood flow into patients with infected lung tissue, which would include patients with advanced COVID-19 disease.

Under the exclusive license agreement, Sorrento will focus on the development and commercialization of ACE-MAB in the North American and European markets, while Mabpharm retains rights in the rest of the world, including the China and Japan markets.

Bioxytran Licenses Novel Viral Inhibitor for COVID-19 Patients

BOSTON, MASSACHUSETTS, March 24, 2020 (GLOBE NEWSWIRE) –

BIOXYTRAN, INC. (OTCQB:BIXT), a developmental stage biotechnology company developing a pipeline of antinecrosis drugs designed to treat hypoxia by delivering a small molecule carrying oxygen to the brain of stroke victims announced today that it signed an exclusive worldwide licensing agreement with Dr. David Platt for the clinical development and further commercialization, of a galectin inhibitor that could potentially treat COVID-19. A presentation of the technology will soon be available.

Under the terms of the agreement, Bioxytran will pay a $5,000 down payment on the licensing fee to Dr. Platt by April 20, 2020. Future milestone payments of up to $4.0 million are due after; the first sample of GMP material, enrollment of the first patient

in a Phase 1 trial, and an NDA approval in the United States. Royalties will range from 15 – 25% based on the amount of royalties received.

Ology Bioservices, Vanderbilt University Medical Center to Develop, Manufacture Monoclonal Antibody for Treatment, Prevention of Infection With COVID-19 Virus for Department of Defense

ALACHUA, Fla.--(BUSINESS WIRE)--The Department of Defense (DOD) awarded a contract valued at $14 million with Ology Bioservices Inc., a biologics contract development and manufacturing organization (CDMO), to develop and manufacture a monoclonal antibody for treatment and prevention of infection with the COVID-19 virus.

This work is supported by the Office of the Assistant Secretary of Defense for Health Affairs with funding from the Defense Health Agency.

Under this program, Ology Bioservices will work with Vanderbilt University Medical Center (VUMC) in Nashville, Tennessee to develop and manufacture the monoclonal antibody. The aim of the program is to rapidly and efficiently deliver the antibody.

3.5 Contract Agreement

Grifols Announces Formal Collaboration with US Government to Produce the First Treatment Specifically Targeting COVID-19

BARCELONA, Spain, March 25, 2020 /PRNewswire/ -- Grifols today announces that it has entered into a formal collaboration with the United States Biomedical Advanced Research Development Authority (BARDA), the Food and Drug Administration (FDA) and other Federal public health agencies to collect plasma from convalescent COVID-19 patients, process this specific plasma into a hyperimmune globulin and support the necessary preclinical and clinical studies to determine if anti-SARS-CoV-2 hyperimmune globulin therapy can successfully be used to treat COVID-19 disease. Grifols will volunteer its expertise and resources in the areas of plasma collection using its network of FDA-approved plasma donor centers; test and qualify donors in conjunction with other health agencies; process plasma into hyperimmune globulin in its purpose-built facility in Clayton, North Carolina, for the isolated processing of immune globulins to treat emerging infectious diseases; and support preclinical and clinical studies to determine whether hyperimmune globulin made from the plasma of convalescent donors can live up to its promise as a viable treatment for COVID-19

disease and as a platform for the treatment of future emerging infectious diseases. This innovative public-private partnership presents opportunities to expedite development and, if successful, availability of a front-line therapeutic in the face of the spreading COVID19 pandemic. The FDA is specifically working to reduce unnecessary regulatory hurdles and ensure a rapid turnaround without compromise to product safety or integrity.

3.6 Private Placement

Synairgen Raises USD16.4 Million in Private Placement of Shares

Southampton, UK - 26 March 2020: Synairgen plc (AIM: SNG), the respiratory drug discovery and development company, is pleased to announce that further to the announcement made on 25 March 2020, (the "Launch Announcement") the Bookbuild has now been successfully concluded with a heavily oversubscribed fundraising of a total of 40,000,000 new Ordinary Shares to be issued at a price of 35 pence per New Ordinary Share, (the "Issue Price") raising gross proceeds for the Company of £14.0 million.

Concurrently with the Placing, certain directors of the Company have conditionally subscribed for 214,285 new Ordinary Shares (the "Subscription Shares" and, together with the Placing Shares, the "New Ordinary Shares") pursuant to the Subscription.

3.7 CRO Agreement

Revive Therapeutics Engages Pharma-Olam and Strengthens Infectious Diseases Clinical Development Team to Advance U.S. FDA Clinical Study for COVID-19

TORONTO, March 25, 2020 (GLOBE NEWSWIRE) -- Revive Therapeutics Ltd. (“Revive” or the “Company”) (CSE: RVV), a life sciences company focused on the research and development of therapeutics for rare disorders and infectious diseases, is pleased to announce that the Company has retained Pharm-Olam, LLC, with proven clinical experience in infectious diseases completing over 100 clinical studies in approximately 19,000 patients at over 2,000 clinical sites, to serve as the Company’s Contract Research Organization (“CRO”) to advance the future clinical study for Bucillamine in the treatment of infectious diseases, including the coronavirus disease (“COVID-19”). In addition, Revive has added Dr. Kelly McKee, Jr., MD, MPH as Chief Scientific Officer consultant and Dr. Onesmo Mpanju, PhD as Regulatory Affairs consultant to the Company’s clinical development team.

“We are very pleased to have Pharm-Olam as our partner in guiding us towards our goal to investigate Bucillamine as a potential treatment for COVID-19 in a U.S. FDA clinical study and in other infectious diseases clinical studies in the future,” said Michael Frank, Chief Executive Officer of Revive. "Pharm-Olam has the proven experience in managing infectious disease clinical studies, a scalable ecosystem for expediting and completing clinical studies on time and on budget, and most importantly they have an infectious disease team of experts with the addition of Dr. McKee and Dr. Mpanju who will develop and oversee Revive’s clinical study and its expeditious submission of our IND with the FDA.”

3.8 Technology Agreement

Dynavax and Clover Biopharmaceuticals Announce Research Collaboration to Evaluate Coronavirus (COVID-19) Vaccine Candidate with CpG 1018 Adjuvant

EMERYVILLE, Calif. and CHENGDU, China, March 24, 2020 (GLOBE NEWSWIRE) -- Dynavax Technologies Corporation (Nasdaq: DVAX), a biopharmaceutical company focused on developing and commercializing novel vaccines, and Clover Biopharmaceuticals, a Chinabased global clinical-stage biotechnology company focused on developing novel and transformative biologic therapies, today announced that they have entered into a research collaboration to develop a vaccine candidate to prevent COVID-19. Clover is advancing evaluation of its protein-based coronavirus vaccine candidate (COVID-19 S-Trimer) in preclinical studies. Dynavax is providing technical expertise and the company’s proprietary toll-like receptor 9 (TLR9) agonist adjuvant, CpG 1018, to support this initiative.

In late-January 2020, upon knowing the genomic DNA sequence of the newly identified SARS-CoV-2 virus, which causes a disease named COVID-19, Clover scientists started designing the viral spike (S)-protein construct and completed its gene synthesis. Utilizing its patented Trimer-Tag© technology, Clover has produced a COVID-19 S-Trimer subunit vaccine candidate that resembles the native trimeric viral spike via a rapid mammalian cellculture based expression system. Having one of the largest in-house, commercial-scale cGMP biomanufacturing capabilities in China, Clover could potentially rapidly scale-up and produce large-quantities of a new coronavirus vaccine.

Xencor and Vir Biotechnology Enter License Agreement for Use of Xtend™ XmAb® Antibody Technology in Investigational Antibodies to Treat COVID-19

MONROVIA, Calif.--(BUSINESS WIRE)--Mar. 25, 2020-- Xencor, Inc. (NASDAQ:XNCR), a clinical-stage biopharmaceutical company developing engineered monoclonal antibodies for the treatment of cancer and autoimmune disease, today announced it has entered into a technology license agreement with Vir Biotechnology, Inc., in which Vir will have nonexclusive access to Xencor's Xtend™ Fc technology to extend the half-life of novel antibodies that Vir is investigating as potential treatments for patients with COVID-19, the disease caused by the novel coronavirus SARS-CoV-2.

"The COVID-19 crisis requires urgent and coordinated action by the biotechnology industry to develop new drugs and vaccines. Xtend Fc technology has demonstrated, in multiple antibodies and through numerous human clinical trials, the ability to extend antibody drug half-life and reduce dosing frequency in patients, an important feature in anti-viral therapy for pandemic use," said Bassil Dahiyat, Ph.D., president and chief executive officer at Xencor. "We are committed to broadly using Xtend technology, and our other XmAb® tools, to rapidly develop potential treatments for COVID-19. Vir's antibody candidates, supported by their deep infectious disease expertise, are a promising approach for treating coronavirus infections."

Under the terms of the agreement, Vir will be solely responsible for the activities and costs related to research, development, regulatory and commercial activities. Financial terms of the agreement were not disclosed. Xencor and Vir previously entered into a separate technology license agreement in August 2019, in which Xencor provided a non-exclusive license to Xtend technology for Vir's use in developing and commercializing antibodies as potential treatments for patients with influenza and hepatitis B virus infection.

3.9 Joint Venture

Hoth Therapeutics Announces Agreement to Joint Development for A Self-Assembling Vaccine (Sav) For the Potential Prevention of The Coronavirus (COVID-19)

NEW YORK, March 23, 2020 /PRNewswire/ -- Hoth Therapeutics, Inc. (NASDAQ: HOTH), a biopharmaceutical company, today announced it has reached an agreement with Voltron Therapeutics, Inc. (Voltron) to form a joint venture entity, to be named HaloVax, to commence preclinical studies for the development of vaccine prospects to prevent the Coronavirus (COVID-19) based upon VaxCelerate, a self-assembling vaccine (SAV) platform exclusively licensed by Voltron from the Vaccine and Immunotherapy Center (VIC) at Massachusetts General Hospital (MGH).

Hoth and Voltron, with the support of MGH, will work jointly on exploring and developing this SAV technology as a means to aid patients at risk of being infected with COVID-19. The VaxCelerate vaccine platform was developed as a means of rapidly generating and preclinically testing a new vaccine against specific pathogen targets. The technology which received Department of Defense (DoD) funding has demonstrated proof of concept in Lassa Fever, an emerging infectious disease. HaloVax intends to use these same SAV principles to assist in the development of a potential vaccine against the COVID-19 pandemic.

4. Industry Impact

4.1 Enrolment

Eloxx Pharmaceuticals Provides Update on the Impact of Novel Coronavirus (COVID19) on Phase 2 Clinical Trials in Cystic Fibrosis

WALTHAM, Mass., March 25, 2020 (GLOBE NEWSWIRE) -- Eloxx Pharmaceuticals, Inc., (NASDAQ: ELOX) a clinical-stage biopharmaceutical company dedicated to the discovery and development of novel therapeutics to treat cystic fibrosis and other diseases caused by nonsense mutations limiting production of functional proteins, today announced that enrollment in our Phase 2 clinical trials for ELX-02 in cystic fibrosis have been temporarily paused in response to the COVID-19 pandemic. Our goals are to avoid unnecessary exposure in at-risk populations, to maintain the integrity of our study data and to support global healthcare providers in their commitment to ensure patient safety.

Public health authorities worldwide have recommended that people at high risk stay at home as much as possible, cancel non-essential doctor's visits and avoid unnecessary exposure to people and public spaces. Cystic Fibrosis patients, especially those with nonsense mutations, have compromised lung function and may be at increased risk of severe illness in the event of a COVID-19 infection.

BriaCell Continues Clinical Operations Amidst COVID-19 Pandemic

BERKELEY, Calif. and VANCOUVER, British Columbia, March 26, 2020 (GLOBE NEWSWIRE) -BriaCell Corp. ("BriaCell" or the "Company") (TSX-V:BCT) (OTCQB:BCTXF), a clinical-stage biotechnology company specializing in targeted immunotherapy for advanced breast cancer, announce that the Phase I/IIa clinical study of Bria-IMT™ with Incyte Corporation's immune checkpoint inhibitor,

INCMGA00012 is ongoing and recruiting patients amidst the COVID-19 pandemic. In fact, BriaCell has enrolled a new patient in the study this week.

“We are determined to provide safe and effective treatments for advanced breast cancer patients with no effective treatment options. Our experts believe that our novel immunotherapy may work additively or synergistically with checkpoint inhibitors to boost the body's immune response to cancer cells and we are firmly committed to continuing our scientific and clinical advancements,” said Dr. Bill Williams, BriaCell’s President & CEO.

4.2 Manufacturing – Supply Chain

Univercells launches CDMO Exothera with GMP capabilities in 15,000m² site in Jumet, Belgium

BRUSSELS, BELGIUM – MARCH 19, 2020

Univercells has launched a contract development and manufacturing organization (CDMO), Exothera, to support cell and gene therapy developers with process development and production of viral vectors. The company has been created to help alleviate the two most critical challenges manufacturers face in bringing these vital therapies to market: a structural lack of capacity and scarcity of bioprocessing expertise.

Exothera is uniquely positioned to create bespoke bioproduction support programs for manufacturers to achieve successful market entry. The team combines complex applied bioprocessing experience with best-in-class technologies. Parent company Univercells’ novel manufacturing platforms will be leveraged among others, to design high-quality, costeffective viral vector processes with the option of implementing sustainable commercial facilities at the customer site if desired. By taking a holistic approach to rapidly deliver scalable bioproduction processes, the CDMO will help cell and gene therapy innovators accelerate the delivery of these groundbreaking therapies with drastic reductions in time to market and cost.

Lexaria Bioscience Begins Coronavirus COVID-19 Drug Delivery Program

Lexaria Bioscience Corp. (OTCQX: LXRP) (CSE: LXX), a global innovator in drug delivery technology, announces it is commencing a program, in collaboration with leading laboratories in Canada and the USA, to study the benefits of Lexaria’s

DehydraTECHTM drug delivery platform for enhancing delivery and effectiveness of certain antiretroviral drugs in the fight against coronavirus disease COVID-19.

Researchers around the world are racing to find treatment solutions to combat COVID-19. But, some of the most promising drug candidates are known to present significant bioavailability challenges in successfully reaching the human bloodstream.

Lexaria is an established world-leader in oral delivery of fat-soluble drugs. Lexaria's patented DehydraTECH technology has already been thoroughly studied and proven to deliver other fat soluble drugs with increases of up to 317% more drug quantified in blood in a human clinical study within the first 30 minutes of dosing as published in a peer-reviewed medical journal.

BioStem Life Sciences Announces Expansion; Contract Manufacturing Capabilities, And Research And Development Laboratory

Pompano Beach, FL, March 13, 2020 (GLOBE NEWSWIRE) -- BioStem Life Sciences, a wholly owned subsidiary of BioStem Technologies, Inc. (OTC PINK: BSEM) ("BioStem" or the "Company") a leading life sciences company specializing in perinatal tissue-based allografts for use in regenerative therapies, today announced the buildout of a brand new R&D lab. Situated in the Company's 6,100 sq. Ft., state-of-the-art, FDA registered, cGMP facility, this new lab will support the research and development pipeline for the Company's growing Contract Development and Manufacturing (CDMO) business.

The expansion of the laboratory facilities and capabilities has been essential for meeting the incoming customer demand of the Company's CDMO business; including perinatal tissue process development and contract manufacturing of finished product, cell line development and characterization, and cell banking, including master cell bank development and storage. In the first quarter of 2020 the Company has already onboarded 4 new CDMO projects in the perinatal tissue allograft space.

4.3 Restructuring

Resignation of CEO & Director and cost cutting amidst COVID-19

MELBOURNE, Australia, March 25, 2020 (GLOBE NEWSWIRE) -- The Directors and Management of Immuron wish to provide an update to the market regarding the current and future impact of COVID-19 on the Company.

The World is in the midst of an unprecedented health crisis as a result of the COVID-19 pandemic. An entirely new political, social, and economic reality has emerged and will continue to evolve. The consequences of this altered reality will have serious ramifications for many companies and organizations. One of these is that the COVID-19 pandemic has brought to an abrupt halt travel plans of millions throughout the world. Many countries are now in total lockdown with people unable to leave their homes except for very limited purposes, with many country lockdowns coming into effect over the last few days.

Revive Therapeutics Appoints Dr. David Boulware, MD, as Scientific Advisor for Infectious Diseases including COVID-19

TORONTO, March 24, 2020 (GLOBE NEWSWIRE) -- Revive Therapeutics Ltd. ("Revive" or the "Company") (CSE: RVV), a life sciences company, is pleased to announce that Dr. David Boulware, MD, MPH, CTropMed, FIDSA, will join the Company as a Scientific Advisor to guide on the Company's current and future clinical programs including its research and development strategy for infectious diseases, including the coronavirus disease ("COVID19").

Dr. Boulware is an infectious disease physician-scientist and Professor of Medicine, Division of Infectious Diseases and International Medicine at The University of Minnesota. Dr. Boulware is currently the Principal Investigator of a globally recognized COVID-19 clinical trial to determine if post-exposure prophylaxis with hydroxychloroquine can prevent progression development of symptomatic COVID-19 disease after known exposure to the SARS-CoV2 virus (ClinicalTrials.gov Identifier: NCT04308668). His primary research interests are in meningitis in resource-limited areas including diagnosis, prevention, treatment, and quality improvement initiatives incorporating cost-effectiveness analyses in order to translate knowledge into improved care. Dr. Boulware's current research is focused on improving the clinical outcomes of HIV-infected persons with cryptococcal meningitis and TB meningitis.

Dr. Boulware has active research collaborations in Uganda, South Africa, and Ethiopia leading a multidisciplinary, international research team. He serves on US and WHO panels for cryptococcal meningitis and WHO panels for advanced HIV disease.