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Amarantus Announces Subsidiary MANF Therapeutics Enters Into Material Transfer Agreement with Dyadic International

New York, NY, Feb. 06, 2020 (GLOBE NEWSWIRE) -- via NEWMEDIAWIRE -- Amaranthus Bioscience Holdings, Inc. (OTC Pink: AMBS) ("Amarantus," or AMBS), a biotechnology holding company pursuing proprietary therapeutics and diagnostics, as well as CBD Wellness through its subsidiaries, today announced that its wholly-owned subsidiary MANF Therapeutics has entered into a material transfer agreement (MTA) with Dyadic International, Inc. (Nasdaq:DYAI , or Dyadic) to transfer existing batches of mesencephalic astrocyte-derived neurotrophic factor (MANF) therapeutic protein previously manufactured by third parties in baculovirus and CHO to Dyadic to assist in the evaluation of the potential of Dyadic's proprietary C1 biologics production platform to manufacture MANF for clinical and commercial use. C1, based on the fungus *Myceliophthora thermophila*, is a microorganism which enables the development and large scale manufacture of low-cost biologics, and has the potential to be further developed into a safe and efficient expression system that may help speed up the development, lower production costs and improve the performance of biologics, including therapeutic proteins such as MANF.

Development rights to MANF were sublicensed from Amaranthus to Emerald Organic Products, Inc. in December 2019. MANF has achieved pre-clinical proof of concept in retinitis pigmentosa (RP), retinal artery occlusion (RAO), glaucoma, age-related macular degeneration (AMD), Parkinson's disease, diabetes, myocardial infarction, as well as several other endoplasmic reticulum stress-related disorders, and [has shown the potential to enhance immunological response in pre-clinical studies](#). Pre-clinical development of MANF is initially being focused on the treatment of orphan ophthalmological diseases and Parkinson's. MANF has received orphan drug designation from the US FDA for the treatment of RP and RAO.

About Dyadic International, Inc.

Dyadic International, Inc. is a global biotechnology company which is developing what it believes will be a potentially significant biopharmaceutical gene expression platform based on the fungus *Myceliophthora thermophila*, named C1. The C1 microorganism, which enables the development and large scale manufacture of low cost proteins, has the potential to be further developed into a safe and efficient expression system that may help speed up the development, lower production costs and improve the performance of biologic vaccines and drugs at flexible commercial scales. Dyadic is using the C1 technology and other technologies to conduct research, development and commercial activities for the development and manufacturing of human and animal vaccines and drugs (such as virus like particles (VLPs) and antigens), monoclonal antibodies, Fab antibody fragments, Fc-Fusion proteins, biosimilars and/or biobetters, and other therapeutic proteins. Additionally, and more

recently, Dyadic is also beginning to explore the use of its C1 technology and other technologies to conduct research, development and commercial activities for the development and manufacturing of Adeno-associated viral vectors (AAV), certain metabolites and other biologic products. Dyadic pursues research and development collaborations, licensing arrangements and other commercial opportunities with its partners and collaborators to leverage the value and benefits of these technologies in development and manufacture of biopharmaceuticals. In particular, as the aging population grows in developed and undeveloped countries, Dyadic believes the C1 technology may help bring biologic vaccines, drugs and other biologic products to market faster, in greater volumes, at lower cost, and with new properties to drug developers and manufacturers and, hopefully, improve access and cost to patients and the healthcare system, but most importantly save lives.

Please visit Dyadic's website at <http://www.dyadic.com> for additional information, including details regarding Dyadic's plans for its biopharmaceutical business.

About Amaranthus Bioscience Holdings, Inc.

Amarantus Bioscience Holdings (AMBS) is a JLABS alumnus biotechnology company developing treatments and diagnostics for diseases in the areas of neurology, regenerative medicine and orphan diseases through its subsidiaries. The Company is also operating wellness stores in the United States through its majority-owned subsidiary Hempor, Inc.

Hempor

Amarantus owns 51% of Hempor, Inc. The Hempor brand is active in the Hemp industry and has over 75 products that are sold in its own stores in Dallas, Texas and online via Hempor.com. Hempor has developed unique proprietary products in the Hemp industry and is actively engaged with researchers to gather data regarding the utility of its products.

Diagnostics

The Company's 80.01%-owned subsidiary **Breakthrough Diagnostics, Inc.**, currently a joint venture with Todos Medical, Ltd. has licensed intellectual property rights to the Alzheimer's blood diagnostic LymPro Test ® from Leipzig University that was originally developed by Dr. Thomas Arendt, as well as certain rights to multiple sclerosis diagnostic MSPrecise™ and Parkinson's diagnostic NuroPro. Amaranthus entered into a joint venture agreement with **Todos Medical, Ltd. (OTCQB: TOMDF)** to advance the diagnostic assets, and Todos has exercised its exclusive option to acquire Amaranthus' remaining ownership in Breakthrough in exchange for approximately 49% ownership of Todos. The transaction is expected to close in the first half of 2020. Amaranthus also owns approximately 30% of the common shares of **Avant Diagnostics, Inc.**, a tumor analysis company developing Theralink®, the proprietary phosphoprotein tumor analysis platform run using reverse phase protein array (RPPA) platform.

Therapeutics

AMBS' 50.1%-owned subsidiary **Elto Pharma, Inc.** has development rights to eltoprazine, a Phase 2b-ready small molecule indicated for Parkinson's disease levodopa-induced dyskinesia, Alzheimer's aggression and adult attention deficit hyperactivity disorder,

commonly known as ADHD. AMBS acquired **Cutanogen Corporation** from Lonza Group in 2015 and currently owns 90.1% of that subsidiary. Cutanogen is preparing for pivotal studies with Engineered Skin Substitute (ESS) for the treatment of pediatric life-threatening severe burns. ESS is a regenerative medicine-based, autologous full-thickness skin graft technology originally developed by the Shriners' Hospital that can be used to treat severe burns, as well as several other catastrophic and cosmetic dermatological indications. AMBS' wholly-owned subsidiary, **MANF Therapeutics Inc.** owns key intellectual property rights and licenses from a number of prominent universities related to the development of the therapeutic protein known as mesencephalic astrocyte-derived neurotrophic factor ("MANF"). MANF Therapeutics is developing MANF-based products as treatments for ophthalmological disorders such as Wolfram Syndrome, Retinitis Pigmentosa and Glaucoma, as well as neurodegenerative diseases such as Parkinson's disease. MANF was discovered by the Company's Chief Scientific Officer John Commissiong, PhD. Dr. Commissiong discovered MANF from AMBS' proprietary discovery engine PhenoGuard, and believes several other neurotrophic factors remain to be discovered. MANF and ESS have been licensed to Emerald Organic Products, Inc.

For further information please visit www.Amarantus.com, or connect with the Amarantus on Facebook, LinkedIn, Twitter and Google+.

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Notice Regarding Forward-Looking Statements

This letter contains forward-looking statements, about the Company's expectations, beliefs or intentions regarding, among other things, its product development efforts, business, financial condition, results of operations, strategies or prospects. Forward-looking statements can be identified by the use of forward-looking words such as "believe," "expect," "intend," "plan," "may," "should" or "anticipate" or their negatives or other variations of these words or other comparable words or by the fact that these statements do not relate strictly to historical or current matters. Forward-looking statements relate to anticipated or expected events, activities, trends or results as of the date they are made. Because forward-looking statements relate to matters that have not yet occurred, these statements are inherently subject to risks and uncertainties that could cause actual results to differ materially from any future results expressed or implied by the forward-looking statements. Many factors could cause actual activities or results to differ materially from the activities and results anticipated in such forward-looking statements, including, but not limited to, the factors summarized in the filings with the SEC. Amarantus does not undertake any obligation to publicly update these forward-looking statements, whether as a result of new information, future events or otherwise.



Source: Amaranthus Bioscience Holdings, Inc.