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MANF Therapeutics Receives Notice of Allowance from US Patent & Trademark Office Covering the Use of MANF or CDNF as a Treatment for Glaucoma, Macular Degeneration and Retinitis Pigmentosa

New York, NY, Jan. 15, 2019 (GLOBE NEWSWIRE) -- via NEWMEDIAWIRE -- MANF Therapeutics, a wholly-owned subsidiary of Amarantus Bioscience Holdings, Inc. (OTCPK: AMBS) in pre-clinical development advancing mesencephalic astrocyte-derived neurotrophic factor (MANF) as a disease-modifying treatment for orphan ophthalmological conditions and neurodegenerative diseases, today announced it has received a notice of allowance from the United States Patent & Trademark Office (USPTO) covering the use of MANF or cerebral dopamine neurotrophic factor (CDNF) as a treatment for various retinal disorders, including glaucoma, macular degeneration and retinitis pigmentosa. The approved claims cover the use of MANF or CDNF administered as an eye drop or by intravitreal injection. MANF Therapeutics is focused on the advancement of MANF for multiple therapeutic indications.

MANF has significant therapeutic potential across multiple [orphan ophthalmological conditions such as RAO](#), and [retinitis pigmentosa](#), where MANF has already received orphan drug designations from the FDA, Wolfram's Syndrome, as well as in larger indications such as [Glaucoma](#), Parkinson's disease, diabetes and cardiovascular disease, including stroke and myocardial infarction. MANF Therapeutics is the front-runner and primary worldwide intellectual property (IP) holder for MANF-based therapies including protein therapy, gene therapy and cell therapy. The Company owns rights to composition of matter patents and patent applications for MANF and owns, or has licenses to, method of use patents and patent applications covering the use of MANF in ophthalmology, neurology and diabetes.

About MANF Therapeutics, Inc.

MANF (mesencephalic-astrocyte-derived neurotrophic factor) is believed to have broad potential because it is a naturally-occurring protein produced by the body to reduce/prevent apoptosis (cell death) in response to injury or disease, via the unfolded protein response. By administering exogenously produced MANF to the body, Amarantus is seeking to use a regenerative medicine approach to assist the body with higher quantities of MANF when needed. Amarantus is the front-runner and primary holder of

intellectual property around MANF and is initially focusing on the development of MANF-based protein therapeutics.

MANF's lead indication is retinitis pigmentosa, and additional indications including Parkinson's disease, diabetes and Wolfram's syndrome are envisioned. Further applications for MANF may include Alzheimer's disease, traumatic brain injury, myocardial infarction, antibiotic-induced ototoxicity and certain other orphan diseases.

In April 2017, Amaranthus incorporated the wholly-owned subsidiary MANF Therapeutics, Inc. to focus on progressing preclinical and clinical development of MANF.

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. AMBS' wholly-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 the rights to the Engineered Skin Substitute program, a regenerative medicine-based approach for treating severe burns with full-thickness autologous skin grown in tissue culture that is being pursued by AMBS' wholly-owned subsidiary **Cutanogen Corporation**. 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, Inc.** is developing MANF-based products as treatments for brain and ophthalmic disorders. MANF was discovered by the Company's Chief Scientific Officer John Commissiong, PhD. Dr. Commissiong discovered MANF from AMBS' proprietary discovery engine PhenoGuard. The Company also re-acquired rights to the Alzheimer's blood diagnostic LymPro Test®, MSPrecise™ and NuroPro. AMBS also owns approximately 109 million shares of Avant Diagnostics.

For further information please visit www.Amarantus.com, or connect with the Amaranthus on [Facebook](#), [LinkedIn](#), [Twitter](#) and [Google+](#).

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Source: Amaranthus Bioscience Holdings, Inc.

