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Amarantus
BioScience

MANF Therapeutics Announces the Issuance of U.S. Patent #9,891,231

Covering Treatment of Diabetes with MANF

- *Allowed claims include the treatment of Type 1 and Type 2 Diabetes*
- *Patent protects exclusivity for MANF in diabetes in the US into 2032*

SAN FRANCISCO, March 01, 2018 (GLOBE NEWSWIRE) -- via OTC PR WIRE -- *MANF Therapeutics*, a wholly-owned subsidiary of [Amarantus Bioscience Holdings, Inc.](#) (OTCPK:AMBS), a US-based biotechnology holding company with subsidiaries developing first-in-class orphan neurologic, regenerative medicine and ophthalmic therapies, today announced that the US Patent & Trademark Office has issued US Patent #9,891,231 covering the use of mesencephalic astrocyte-derived neurotrophic factor (MANF) as a treatment for beta cell disorders, including Type-1 and Type-2 diabetes. This patent extends exclusivity for MANF in the treatment of diabetes in the US into 2032. There is strong belief that MANF has significant therapeutic potential across multiple orphan disease areas, as well as in large indications such as diabetes and cardiovascular disease. MANF Therapeutics is preparing to restart IND-enabling development of MANF in 2018 in glaucoma and retinitis pigmentosa, an indication for which MANF has received orphan drug designation.

Multiple research groups have published data demonstrating the therapeutic potential of MANF in treating diabetes, including data published in the peer-reviewed scientific journal *Cell Reports* entitled "[MANF Is Indispensable for the Proliferation and Survival of Pancreatic Cells.](#)" That study demonstrated the therapeutic benefit of MANF in protecting and restoring pancreatic beta cells *in vitro* and *in vivo* in animal models of diabetes. The study's authors determined "lack of MANF *in vivo* in mouse leads to chronic unfolded protein response (UPR) activation in pancreatic islets. Importantly, MANF protein enhanced cell proliferation *in vitro* and overexpression of MANF in the pancreas of diabetic mice enhanced cell regeneration. We demonstrate that MANF specifically promotes cell proliferation and survival, thereby constituting a therapeutic candidate for cell protection and regeneration."

About Amarantus Bioscience Holdings, Inc.

Amarantus Bioscience Holdings (AMBS) is a 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 (ESS), 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. AMBS also owns approximately 79.25 million shares of Avant Diagnostics, Inc. via the sale of its wholly-owned subsidiary Amaranthus Diagnostics, Inc. that occurred in May 2016.

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

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 the body, Amaranthus is seeking to use a regenerative medicine approach to assist the body with higher quantities of MANF when needed. Amaranthus 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.

Forward-Looking Statements

Certain statements, other than purely historical information, including estimates, projections, statements relating to our business plans, objectives, and expected operating results, and the assumptions upon which those statements are based, are forward-looking statements. These forward-looking statements generally are identified by the words "believes," "project," "expects," "anticipates," "estimates," "intends," "strategy," "plan," "may," "will," "would," "will be," "will continue," "will likely result," and similar expressions. Forward-looking statements are based on current expectations and assumptions that are subject to risks and uncertainties which may cause actual results to differ materially from the forward-looking statements. Our ability to predict results or the actual effect of future plans or strategies is inherently uncertain. Factors which could have a material adverse effect on our operations and future prospects on a consolidated basis include, but are not limited to: changes in economic conditions, legislative/regulatory changes, availability of capital, interest rates, competition, and generally accepted accounting principles. These risks and uncertainties should also be considered in evaluating forward-looking statements and undue reliance should not be placed on such statements.

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