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# Amarantus BioScience Reports Positive MANF Data in Neuroprotection Animal Models of Parkinson's Disease

*Company's proprietary therapeutic appears to protect key dopamine-producing brain function*

SUNNYVALE, Calif.-- Amarantus BioScience, Inc. (OTCQB: AMBS), a biotechnology company discovering and developing treatments and diagnostics for diseases associated with neurodegeneration and apoptosis, today reported positive preclinical data for its lead therapeutic MANF in neuroprotection 6-hydroxydopamine (6-OHDA) rat models of Parkinson's disease. The data show that MANF protects the integrity of dopamine producing neurites in the striatum.

"Our scientists are excited by this data, which not only demonstrates the efficacy of MANF, but its superiority to GDNF, as well," said Gerald E. Commissiong, President and Chief Executive Officer of Amarantus BioScience. "Based on this study, we believe MANF plays a role in maintaining brain connectivity, specifically the dopaminergic system of the basal ganglia network, which reinforces the potential of MANF as a disease-modifying treatment for Parkinson's."

In the neuroprotection study, MANF was delivered into the substantia nigra shortly before injection of the toxin 6-OHDA into the striatum. Four weeks later the animals were sacrificed and the density of dopaminergic neuron projections in the striatum was determined. The protection of neuron health, as measured by the density of neurite terminals, was evident in all three areas of the striatum examined. The effects of a single MANF treatment were evident after four weeks, indicating the effects of MANF protection are sustained. Furthermore, the highest level of neurite density was found at the highest dosage of MANF. Importantly, the neurite density measured under treatment with MANF was statistically significantly better than shown for both vehicle control and a standard dosage of Glial cell-Derived Neurotrophic Factor (GDNF). GDNF is currently in clinical trials for Parkinson's disease and considered the current benchmark in the field. The data summarized here suggests that MANF may have advantages over GDNF for the clinical treatment of Parkinson's disease.

"The data on MANF continues to return more favorable results than other molecules currently in clinical development as disease-modifying treatments for Parkinson's disease," said Dr. Joseph Rubinfeld, Amgen co-founder and current member of the Company's Board of Advisors. "We intend to conduct select additional experiments to understand why this appears to be the case while we continue the IND-enabling studies that have already been initiated. We believe these additional data points will further distinguish MANF from competitors in the field, and will deliver significant value in the near-term."

## **About Mesencephalic-Astrocyte-derived Neurotrophic Factor (MANF)**

MANF (Mesencephalic-Astrocyte-derived Neurotrophic Factor) is a protein that corrects protein misfolding, one of the major causes of apoptosis (Programmed Cell Death). Mesencephalic-Astrocyte-derived Neurotrophic Factor (MANF) is believed to have broad potential because it is a naturally-occurring protein produced by the body for the purpose of reducing and preventing apoptosis (in response to injury or disease), via the unfolded protein response. By manufacturing MANF and administering it 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 (IP) around MANF, and is initially focusing on the development of MANF-based protein therapeutics. MANF's current lead indication is Parkinson's disease with additional focus on Traumatic Brain Injury (TBI). Future indications may include myocardial infarction and certain rare and ultra-rare orphan diseases where MANF is currently being evaluated.

## **About Amarantus BioScience**

Amarantus BioScience, Inc. is a development-stage biotechnology company founded in January 2008. The Company has a focus on developing certain biologics surrounding the intellectual property and proprietary technologies it owns to treat and/or diagnose Parkinson's disease, Traumatic Brain Injury, Ischemic Heart Disease and other human diseases. The Company owns the intellectual property rights to a therapeutic protein known as Mesencephalic-Astrocyte-derived Neurotrophic Factor ("MANF") and is developing MANF-based products as treatments for brain disorders. The Company also is a Founding Member of the Coalition for Concussion Treatment (#C4CT), a movement initiated in collaboration with Brewer Sports International seeking to raise awareness of new treatments in development for concussions and nervous-system disorders. The Company also owns intellectual property and licenses for the diagnosis of Parkinson's disease and Alzheimer's disease. For further information please visit [www.Amarantus.com](http://www.Amarantus.com).

## **Forward Looking Statements**

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Such statements include, but are not limited to, statements about the possible benefits of MANF therapeutic applications, as well as statements about expectations, plans and prospects of the development of Amarantus' new product candidates. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including the risks that the anticipated benefits of the therapeutic drug candidates or discovery platforms, as well as the risks, uncertainties and assumptions relating to the development of Amarantus' new product candidates, including those identified under "Risk Factors" in Amarantus' most recently filed Annual Report on Form 10-K and Quarterly Report on Form 10-Q and in other filings Amarantus periodically makes with the SEC. Actual results may differ materially from those contemplated by these forward-looking statements. Amarantus does not undertake to update any of these forward-looking statements to reflect a change in its views or events or circumstances that occur after the date of this presentation.

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