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CONTACT: Tara Stultz, M: 440-225-9595, tara.stultz@ritzcommunications.com

Investigational Diabetes Drug May Also Have Future As Treatment for Parkinson's Disease

New data suggests novel insulin sensitizer may prevent damage and death of nerve cells in the brain that control movement, balance, and walking

KALAMAZOO, Mich., Sept. 19, 2013 - Metabolic Solutions Development Company, LLC ([MSDC](#)) announced today the presentation of new data showing an investigational drug being studied to treat diabetes, MSDC-0160, had a protective effect on nerve cells in the brain that control movement, balance and walking. These results in laboratory and animal models of Parkinson's disease suggest MSDC-0160 may have the potential to modify the course of Parkinson's disease. The Company is preparing for the start of clinical trials, which could begin in late 2014.

These results were generated in collaboration with Patrik Brundin, MD, PhD, Head of the Laboratory of Translational Parkinson's Disease Research and Director of the Center for Neurodegenerative Science at the [Van Andel Institute](#) (VAI). The data were presented by post-doctoral fellow Anamitra Ghosh at the "Grand Challenges in Parkinson's Disease" [symposium](#), which is being convened September 18 – 19 at VAI (Grand Rapids, MI).

First in Class

MSDC-0160 is the first in a new class of insulin sensitizers called [mTOT Modulators™](#), which appear to exert their therapeutic effects through a new drug target located in the inner mitochondrial membrane. MSDC-0160 has been shown to be well-tolerated and no significant safety issues were noted in studies in patients with type 2 diabetes or elderly patients with dementia due to Alzheimer's disease. In a [Phase 2b clinical trial](#) in 258 patients with type 2 diabetes, MSDC-0160 was shown to lower hemoglobin A1c significantly without the side effect profile of currently marketed insulin sensitizers, which are PPAR γ agonists. In a recently completed Phase 2a trial in 29 patients with dementia due to Alzheimer's disease ([NCT01374438](#)), MSDC-0160 was shown to maintain or increase glucose metabolism in the brain, as measured by FDG-PET imaging, in predefined regions of interest in the brain associated with cognitive decline.

Mitochondria and Parkinson's Disease

Parkinson's disease is a chronic, degenerative neurological disorder that affects an estimated one million people in the United States, and more than five million worldwide. Impaired mitochondrial function has been implicated in the development of Parkinson's disease. Mitochondria are the "power plants" of the

cell, generating energy needed for cell activity. Therapies that improve mitochondrial function may have the potential to slow the progression of the disease.

About Metabolic Solutions Development Company

Metabolic Solutions Development Company (www.msdrx.com) is a drug discovery and development company investigating novel molecular targets and developing new therapeutics to treat metabolic diseases associated with age-related mitochondrial dysfunction, especially type 2 diabetes.

About Van Andel Institute

Established by Jay and Betty Van Andel in 1996, Van Andel Institute is an independent research organization dedicated to preserving, enhancing and expanding the frontiers of medical science, and to achieving excellence in education by probing fundamental issues of education and the learning process. This is accomplished through the work of over 200 researchers in more than 20 on-site laboratories and in collaborative partnerships that span the globe. Find out more about Van Andel Institute or donate by visiting www.vai.org

About Patrik Brundin, MD, PhD

Patrik Brundin, M.D., Ph.D. Brundin has more than 30 years of experience with neurodegenerative diseases, Parkinson's disease pathogenesis, and therapeutic neural grafting into people with Parkinson's disease. He is one of the top cited researchers in the field of neuroscience with around 300 publications on Parkinson's disease and related topics. In addition to managing laboratories at VAI and at Lund University, Sweden, he is the co-editor in chief of the *Journal of Parkinson's Disease* and has coordinated multiple international research programs.

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