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BGU introduces Novel Combination Therapy for treating neurological disorders

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The combination therapy, of two FDA approved drugs, protects the blood-brain-barrier and is aimed at preventing development of brain pathologies



BGN Technologies, the technology transfer company of Ben-Gurion University (BGU), introduces a novel drug combination therapy, based on two FDA approved drugs, for protecting the blood-brain-barrier, and therefore preventing the development of various neurological diseases that are affected by brain vasculature pathologies. The combination therapy was invented by Prof. Alon Friedman and his group, at the Faculty of Health Sciences, Ben-Gurion University of the Negev, Israel.

The blood-brain-barrier (BBB) is a highly specialized interface that separates the circulating blood from the brain's extracellular fluid in the CNS and only allows selected molecules to enter into the brain tissue. Disruption of the BBB plays an important role in cellular damage in neurological diseases, including stroke, neurodegenerative diseases, brain tumors, and brain infections. BBB breakdown allows entry of neurotoxic blood products resulting in inflammatory response and a major damage to the brain. Therefore the integrity of the BBB and the ability to repair damages caused to its integrity are crucial.

Dr. Ora Horovitz, Senior VP Business Development at BGN Technologies said, "The role of the BBB in disease and in aging is being increasingly understood, and the rationale for using the novel combination therapy invented by Prof. Friedman is relevant for many CNS indications including stroke, Alzheimer's disease, epilepsy, traumatic brain injury, post-operative and post radiation cognitive decline, age-related macular degeneration, ALS, migraine, and others. Moreover both drugs are already approved for other indications with a validated activity, and we are currently looking for partners for the further development of this promising combination therapy."

Currently, the ability to treat such conditions is limited, and is usually initiated only after symptoms are apparent and brain damage is substantial. However, Prof. Friedman and his team discovered that treating the BBB at early stages can protect the brain and prevent disease development and therefore the novel treatment focusses on early diagnosis and prevention. The suggested treatment is comprised of a combination therapy of two FDA approved drugs, Memantine and Losartan, which have been shown in preclinical studies to protect the integrity of the BBB, when administered together. Moreover, the

research team has also developed an early diagnostic tool based on permeability analysis which enables early diagnosis and thus early treatment.