Virpax® to Develop Its Molecular Envelope Technology (MET) Intranasal Enkephalin Formulation for the Management of PTSD

MALVERN, PA – January 14, 2020 Virpax® Pharmaceuticals Inc. ("Virpax"), a company specializing in developing pharmaceutical products for pain management by using new drug delivery systems, signed a technology license agreement with Nanomerics Ltd. Under the agreement, Virpax has exclusive global rights to use Nanomerics' nanotechnology for the delivery of a metabolically labile intranasal peptide for the management of Post-Traumatic Stress Disorder (PTSD). PES200 will be the second investigational product formulation delivered via the nasal route to enhance enkephalin transport to the brain developed by Virpax. PES200 will use a preassembled device and cartridge to propel the enkephalin formulation through the nose to the brain via the olfactory nerve. In theory, the Molecular Envelope Technology (MET) will help to carry the enkephalin to the brain to suppress anxiety. Virpax and Nanomerics will validate proof-of-concept followed by IND-enabling studies for the development of its novel enkephalin-based formulation to treat Post-Traumatic Stress Disorder. Virpax has exclusive global rights to the proprietary MET Intranasal enkephalin delivery technology for pain management and PTSD.

"We are delighted to be collaborating with Virpax Pharmaceuticals in the development of a product to treat PTSD," said Nanomerics' Chief Scientific Officer, Professor Ijeoma F. Uchegbu. "We look forward to working with Virpax to bring these innovative new treatments to patients."

About PES200

PES200 is a drug product based on a type of nanotechnology. The nanotechnology enables the exclusive delivery of a metabolically labile peptide drug into the brain on intranasal delivery. PES200 is manufactured using industrially relevant equipment and processes (high pressure homogenization and spray drying). There is pharmacological evidence of activity of MET enabled enkephalin in morphine-tolerant animals. The MET nanoparticles are well tolerated via the nasal route at the dose administered. PES200 demonstrated comparable preclinical activity to morphine in all animal pain models tested without the drug seeking and tolerance associated with opioids.

"The development of an enkephalin delta opioid receptor agonist has the potential to be a breakthrough analgesic product-treating pain without the abuse and respiratory depression potential, as well as a first-in-class breakthrough psychiatric drug for the treatment of syndromes such as refractory depression, suicidality, hyper-aggression and PTSD," said Jeffrey Gudin, MD, EVP, Chief Medical Officer for Virpax.

About Virpax Pharmaceuticals

Virpax develops branded pharmaceutical products for pain management by using cutting-edge technology to enhance patients' quality of life. The company is focused on becoming a global leader in pain management by developing and delivering innovative pharmaceutical products to its customers. For more information, please visit www.virpaxpharma.com.

About Nanomerics Ltd.

Nanomerics is a specialty pharmaceutical company focused on the development of pharmaceutical products with enhanced bioavailability. Biocompatible polymers are tailored to form containers that package the drug and carry it across epithelial barriers to the target site. Nanomerics' proprietary technology is based on world leading know-how and scientific leadership in polymeric nanotechnology. The company's MET delivers a step change in target tissue availability of drugs and biological APIs such as peptides across a number of epithelial barriers. The founding scientists Professor Ijeoma F. Uchegbu and Professor Andreas G. Schätzlein developed the technology at the Universities of Strathclyde and Glasgow and, latterly at the UCL School of Pharmacy.

Forward-Looking Statement

This news release contains "forward-looking statements" as defined by the Private Securities Litigation Reform Act of 1995. Virpax cautions readers that forward-looking statements are based on management's expectations and assumptions as of the date of this news release and are subject to certain risks and uncertainties that could cause actual results to differ materially, including, but not limited to, those associated with the timing of the PES200 regulatory filings and clinical milestones and other risks and uncertainties identified in the Company's filings with the Securities and Exchange Commission. Forward-looking statements reflect our analysis only on their stated date, and Virpax takes no obligation to update or revise these statements except as may be required by law.

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