VRG Therapeutics announces validation of its AI-powered drug discovery platform and opens USD 15 million funding round

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BUDAPEST, HUNGARY, February 20, 2024 /EINPresswire.com/ -- VRG Therapeutics (VRG Tx), a biotechnology R&D company focusing on miniprotein pharmaceuticals and cellular & gene therapy (CGT) products has announced the successful experimental verification of its proprietary, artificial intelligence-(AI)-powered drug discovery technology.

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>
> *Zalán Péterfi, PhD*

Using the company's established, directed evolution based miniprotein platform, VRG Tx has previously demonstrated the capability to drastically improve the pharmacological properties of already identified peptide ligands. Indeed, the evolved drug candidates proved their potential in vivo, in relevant autoimmune and cancer animal proof of concept studies.

The AI-powered add-on is a leap in the potential of the company's miniprotein platform by enabling de novo design of miniproteins towards virtually any target, bypassing years of struggle to discover a starting molecule. "I am really excited about the successful pilot project which paves the road to tackle any targets by de novo miniprotein design. The discovery process could only start from an already existing target-ligand interaction until this point. Our AI-powered miniprotein platform provides high quality, validated hit molecules within 6 months, which takes years with the traditional screening approach" said Zalán Péterfi, PhD, CEO and co-founder of VRG Tx.

As the first step, the Wetlab-verified In Silico Design of Miniproteins (WISDOM) platform designs initial miniprotein scaffolds in silico that are at least weak binders of the target. Next, these scaffolds are further optimized with the Company's Individual Sequence Enrichment Pattern (ISEP) technology. This method is based on phage display and its communication with the in-silico platform allows fine-tuned optimization and selection of the best drug candidates. To

showcase the company's ability to find scaffolds for any target molecule, including those that have no identified interaction partner, our new WISDOM technology identified hitherto unknown binders to a target protein while ranking the known interaction partners, as positive controls, amongst the top 0.1% hits. The new scaffolds were already confirmed by experimental data provided by industry gold standard binding assays.

"Although AI technology is rapidly advancing, the in-silico design of "ready-to-develop" drug candidates for any pharmaceutical target is still far away. We believe that the future of drug development is combining trailblazing AI and in silico technologies with state-of-the-art wet lab work. Thus, we utilize the wetlab-based ISEP platform together with the AI driven scaffold selection and design in an iterative process to achieve unprecedented selectivity and affinity in an extremely fast discovery process." added Zalán Péterfi.

The integrated approach rapidly advances miniprotein drug candidates to transform from concept to reality. Using its upgraded technology, VRG Tx already started a new project aiming to block IL-6 trans-signaling aiming to treat chronic inflammatory diseases, and to maximize the potential of the WISDOM technology, the company has established a collaboration to utilize Komondor, a world-class High Performance Computing (HPC) infrastructure.

Furthermore, VRG Tx have started conversations with pharma partners to externalize the pipeline and with investors to join their USD 15 million Series B funding round to progress lead assets into the clinic.

About VRG Tx: VRG Therapeutics is an original biopharmaceutical R&D company located in Budapest, Hungary. VRG Tx's vision is to leverage its unique technologies to create cures for diseases through targets and mechanisms of action that are beyond the reach of conventional biopharma approaches. VRG Tx miniprotein based portfolio addresses major unmet clinical needs including autoimmune diseases, inflammation, and oncological indications. The company has raised USD 11 million to date (USD 3.5 million in seed funding, USD 5.5 million in series A, and USD 2 million in grants) and is led by a team of professionals with experience from McKinsey and Company, Harvard Medical School, and large pharma companies.

About miniproteins: Miniproteins, which combine the benefits of small molecules and biologics, are next-generation therapeutic peptides stabilized by disulfide bridges to form a rigid structure. These peptides offer the precision and binding capabilities of monoclonal antibodies, combined with enhanced stability, minimal immunogenicity, cost-effective production, and the feasibility of oral administration.

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