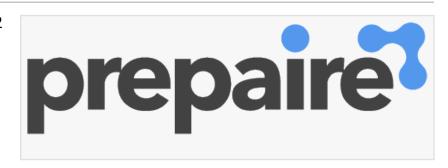# Prepaire Launches Shield™, A Dedicated Drug Discovery Platform To Find Therapies & Antidotes Against Chemical Agents

DUBLIN, IRELAND, September 19, 2022 /EINPresswire.com/ -- Prepaire, a commercial-stage omics company leveraging the power of AI to revolutionize [drug discovery](#), today announces the launch of a dedicated platform called Prepaire Shield. In a chemical emergency, minutes matter, and rapid deployment of medical countermeasures (MCM) are necessary to save lives and minimize injury. Current treatment protocols for exposure to nerve and vesicant agents found in the U.S stockpile are outdated, and the toxicities and efficacies of available therapies and antidotes are still being evaluated. Prepaire Shield's sole objective is to take on the most significant threats within the chemical weapon agent (CWA) domain.

Many chemical threats can inflict injuries rapidly, and MCMs must be readily available to mitigate these risks. With conventional drug discovery involving costly and lengthy studies, using Prepaire Shields proprietary algorithm based on Convolutional Deep Neural Networks (CNN) and Generative Adversarial Networks (GANs) to build reactive chemical and biological fitting models, enabling the identification of ligands to protein targets, protein-protein interactions, generating molecular structures with specified properties, combining both functionality and drug ability, as well as preparing synthetic data for specific drug discovery and personalized treatment, mean therapies and antidotes can be rapidly discovered.

Prepaire Shield drug screening efforts identify therapeutic candidates that can be repurposed and evaluated. Drug repurposing considers new uses, outside the initial clinical indication, for therapeutics already approved or in late-stage development, focusing on those that could treat the symptoms of diseases that are also symptoms of chemical agent exposure. This "treat the symptom" approach, agnostic to the chemical injury itself, is a crucial strategy for many government agencies worldwide.

Commenting on the announcement, Dr. Vicent Ribas, co-founder and Chief Scientific Officer at Prepaire, "Shield will leverage its technology to accelerate the pace of discovery and innovation. With our vast data sets and advanced analytics to enable faster evidence-based decision-making.

These efforts will unlock hidden insights and provide new and unique perspectives using artificial intelligence in previously unavailable ways to analyze appropriate therapies and antidotes. As a company at the forefront of target identification, indication prioritization, mechanism reconstruction, and drug repurposing work in the pharmaceutical industry, we aim to identify commonly available drugs that can be used as MCMs for exposure to chemical agents. Paired with our deep domain expertise, Shield will evaluate genomic experiments, systems, and computational biology, as well as known protein-protein interactions and molecular pathways accessed through our proprietary databases. With this approach, we can provide a fast, focused method for screening drug candidates to repurpose successfully for treating chemical exposures."

About Prepaire
Started in 2020 and is based in Dublin, Ireland, with plans for a BSL2 lab in Dubai, UAE. Prepaire aims to become a scaled network providing a docking station for how stakeholders approach drug development. The concurrence of state-of-the-art Artificial Intelligence and chemical retrosynthesis has enabled Prepaire to systematically integrate target identification, validation, lead discovery, optimization, drug synthesis, and preclinical testing into a single platform. AI accelerated drug discovery, allowing for a fast-track discovery and repurposing of the existing molecule, intelligent clinical design, and coupled with in-house manufacturing.

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