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China's Suntrap discovers LeSoleil to fight COVID-19 and future epidemics

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LeSoleil' series of drugs can block the broad-spectrum coronavirus infection, resist further development of respiratory infection and kill the viruses

AI-assisted computing has greatly improved the efficiency of new drug research and development. China's Suntrap Life Technologies Co., Ltd has taken the lead to establish the Suntrap IDDNU(R) platform to serve as an international drug discovery network alliance.

The company carried out comprehensive drug research and development projects, and built the Suntrap IDDNU (Suntrap International Drug Discovery Network Alliance) technology platform. Suntrap IDDNU is based upon the EK-DRD database. EK-DRD: A Comprehensive Database for Drug Repositioning Inspired by Experimental Knowledge). This database includes detailed information on the US FDA approved 1963 drugs (including those withdrawn from the market), and the activity information in the target, cell, animal, and clinical experiments. In addition, the Suntrap research team also included the structure and activity data of 400,838 natural compounds.

Through the collection of these data and the construction of a database, the Suntrap research team has developed a series of natural compounds for drug redirection.

Based on AI drug discovery algorithms and mathematical models, it can quickly calculate the affinity between these compounds and the target, and predict the compound-protein interaction, the ability to discover multi-pharmacological (multi-target) compounds, and the discovery of the correspondence among the drug-target-disease interactions, provide a very efficient platform for systematic pre-screening of drugs.

For a variety of diseases, the Suntrap research team has initiated a variety of biological drug research and development pipelines (ie. tumors, viral infections, tissue fibrosis, respiratory infectious diseases, aging-related chronic diseases, and others).

Given that the new coronavirus is still pandemic throughout the world, the Suntrap research team responded and launched the 'Research on Anti-Coronavirus Products' project in early 2020. Drugs claimed to be targeting the coronavirus have been clinically proven to be ineffective and have side-effects.

In terms of target selection for the new drug development, the Suntrap research team aims to the development of small molecules with multi-targets, broad-spectrum, and collaborative therapeutic effectiveness, which acts not only to the original coronaviruses but also on the mutants or related strains.

The Suntrap IDDNU quickly screened the antiviral activity of natural small molecular compounds from a database of drugs, herbals as well as food components, and discovered the multi-target synergistic anti-coronavirus compound "LeSoleil(R)".

The Suntrap research team, together with the Guangdong Provincial Center for Disease Control and Prevention, and the Guangdong Provincial Institute of Public Health, completed the sensitivity study and safety evaluation of 'LeSoleil'. The experimental conclusions show that 'LeSoleil' has significant effectiveness in the in vitro inhibition of the coronavirus (SARS-CoV-2). Further studies confirmed the effectiveness, which laid the foundation for 'LeSoleil' to be further developed into a candidate for the anti-coronavirus drug. The Suntrap's team studies have indicated that 'LeSoleil' has the advantages of low toxicity, good tolerability, and high accessibility, The Suntrap IDDNU guarantees the rapid development of broadspectrum COVID-19 prevention and therapeutic drugs.