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Oxford University, Oracle expedite identification of COVID-19 variants

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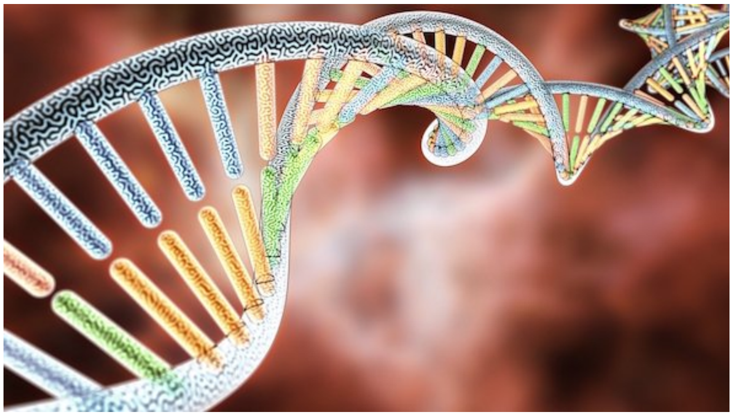
The partnership will enable global genomic sequencing and examination through a specialist platform developedon Oracle Cloud Infrastructure



The emergence of more infectious variants of the COVID-19 virus is threatening to slow the global recovery and potentially thwart current vaccine immunity. To help governments and medical communities identify and act on these variants faster, Oxford University and Oracle have created a Global Pathogen Analysis System (GPAS) combining Oxford's Scalable Pathogen Pipeline Platform (SP^3) with the power of Oracle Cloud Infrastructure (OCI). This initiative builds on the work of a Wellcome Trust-funded consortium including Public Health Wales, the University of Cardiff, and Public Health England.

First used for tuberculosis, SP^3 has been repurposed to unify, standardize, analyze, and compare sequence data of SARS-CoV-2, yielding annotated genomic sequences and identifying new variants and those of concern.

SP^3's processing capability has been enhanced with extensive new development work from Oracle, enabling high performance and security plus 7 by 24 worldwide availability of the SP^3 system in the Oracle Cloud.

The SP^3 system will now deliver comprehensive and standardized results of COVID-19 analyses within minutes of submission on an international scale. The results will be shared with countries around the globe in a secure environment.

Coupled with the extensive machine learning capabilities in the Oracle Cloud, collaborating scientists, researchers, and governments worldwide can process, analyze, visualize, and act on a wide collection of COVID-19 pathogen data for the first time. This includes identifying variants of interest and their potential impact on vaccine and treatment effectiveness. For example, analytics dashboards in the system will show which specific strains are spreading more quickly than others and whether genetic features contribute to increased transmissibility and vaccine escape. Already, Oxford has processed half the world's SARS-CoV-2 sequences, more than 500,000 in total.

The next step will be to extend this service to all pathogens while simultaneously collaborating with scientists from research establishments, public health agencies, and private companies to ensure this work can inform decision making on pandemic response strategies worldwide. The platform will be free for researchers and non-profits to use worldwide.