MinION MK1c and Midnight protocol for SARS-CoV-2 variant detection in Thailand

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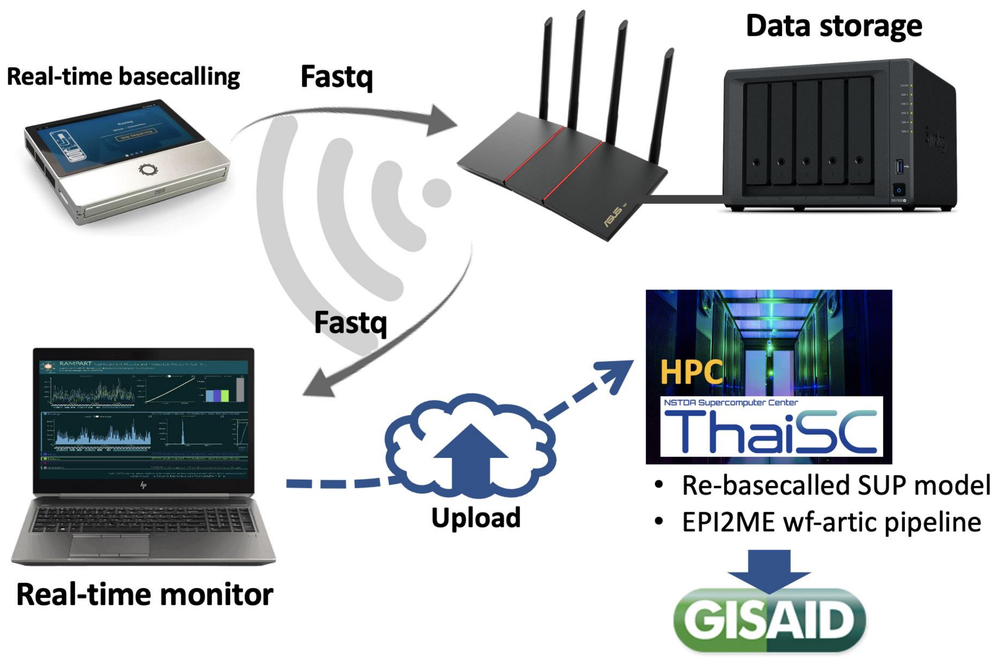
The Omicron (B.1.1.529) SARS-COV-2 variant of concern (VOC), was first reported to WHO from South Africa on November 24,2021 and subsequently spread globally. The first case of COVID-19 due to the Omicron VOC was detected in Thailand on December 6, 2021 (within 16 hrs from receipt of suspected case specimen to result).

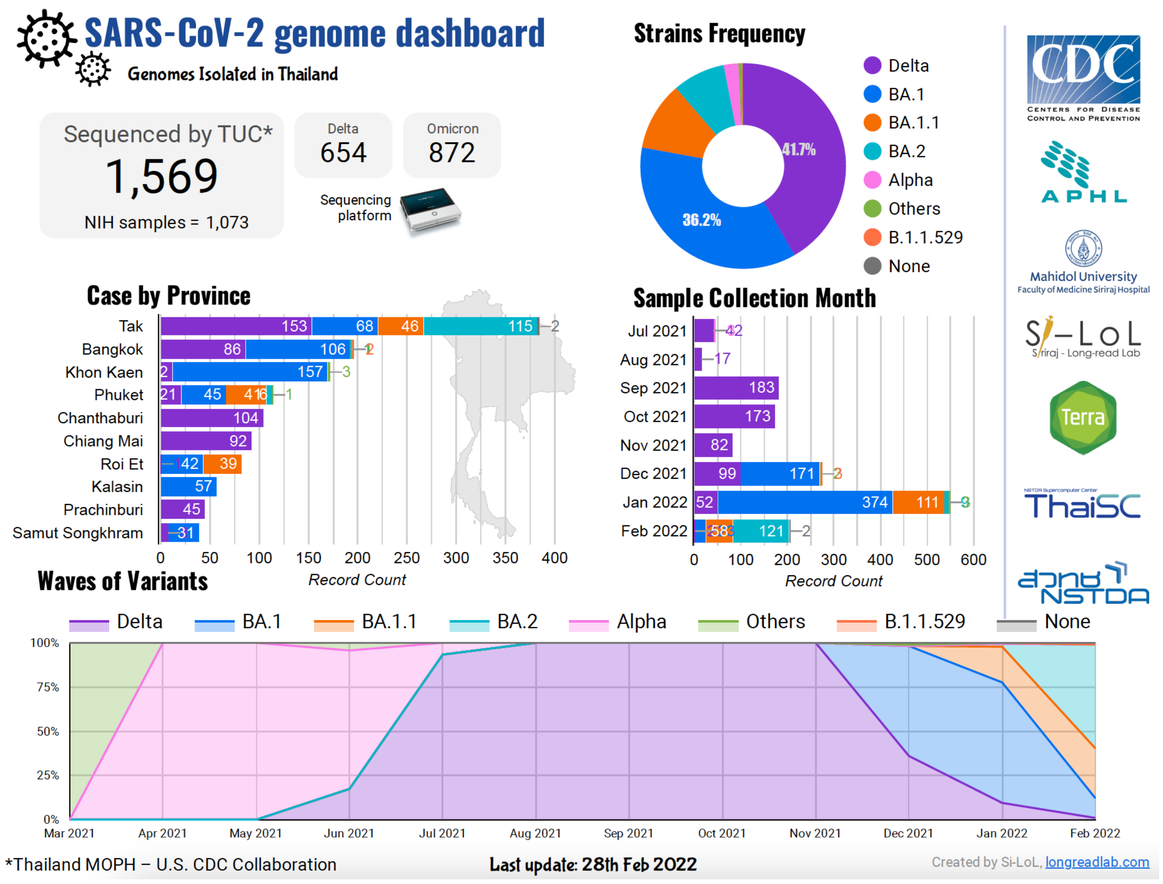
Material & Method

- MinION MK1c and SARS-CoV-2 midnight 1200 bp protocol were used for SARS-CoV-2 whole genome sequencing (WGS) of RT-PCR confirmed COVID 19 cases.
- A total of 1382 samples collected between May 2021 to February 2022 from across Thailand were successfully sequenced.
- The SARS-COV-2 genome sequences passed the standard quality control assessment by Nextclade.



Results

- The first case of COVID-19 due to the Omicron VOC was detected in Thailand on December 6, 2021 (within 16 hrs from receipt of suspected case specimen to result).
- Overall, amongst the 1569 genomes analyzed, 872 were identified as Omicron VOC (collections from Dec 2021 to Feb 2022), 654 were Delta VOC (collections from June 2021 to Feb 2022) and 43 were Alpha VOC and others.
- Of the 872 cases due to Omicron VOC, 229 were from Tak Province, which borders Myanmar; 115 of 229 (50%) specimens were determined to be the BA.2 sublineage and all 115 were collected in February 2022



Summary

The MinION MK1c combined with SARS-CoV-2 Midnight protocol is an effective strategy for fast turnaround time for SARS-CoV-2 WGS variant detection and an important tool for genomic surveillance to inform disease control actions.

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