

DEPARTMENT OF VIROLOGY PUBLIC HEALTH LABORATORIES DIVISION (PHLD) NATIONAL INSTITUTE OF HEALTH (NIH)

> SARS-COV-2 VARIANTS SITUATIONAL REPORT # 15 SEPTEMBER 13, 2023 PHONE # +92-51-9255082



HIGHLIGHTS

Data as of Sep 13, 2023

- This situational report provides the comprehensive overview of genomic surveillance of SARS-CoV-2 in Pakistan spanning from Mar 2023 to Aug 2023, highlighting the emergence of Omicron subvariant "GW.5" in Pakistan.
- As per the GISAID data, the earliest sequence of GW.5 was documented on May 1, 2023 from China, followed by a sequence from Pakistan on May 4, 2023. Till Sep 13, 2023, the GW.5 has been detected in 17 countries with a total of 102 sequences. Notably, 24 cases (23.5%) of GW.5 are reported from Pakistan which are distributed as follows: Sindh (n=9), Islamabad (n=8), Punjab (n=6), and Khyber Pakhtunkhwa (n=1).
- Overall, SARS-CoV-2 genomic surveillance between Mar 2023, to Aug 2023, in Pakistan showed the prevalence of XBB.1.19.1 (21.09%), XBB.1.9.1 (20.36%), XBB.1.5 (10.55%), GW.5 (4.73%), XBB.1.9.2 (4.73%), GW.4 (4.36%), FL.2 (4.00%), XCC (3.27%), and, XBB.1.16 (1.82%), as of Sep 13, 2023.
- Pakistan has also reported two cases of the EG.5 (Eris) variant, which has been designated as a Variant of Interest (VOI) on Aug 09, 2023 by World Health Organization (WHO). EG.5.2 is reported on March 26, 2023 in Lahore and EG.5.1.1 on July 19, 2023 in Karachi, Pakistan.



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OVERVIEW OF OMICRON IMPORTANT SUBLINEAGES IN PAKISTAN

| Nextstrain clade | | 21K, 21L, 22A, 22B, 22F, 23A, 23B | | | | | | |
|--|--|-----------------------------------|---------------------------------|--------------------------------------|-----------------------------------|-----------------|-----------------------|-----------------|
| GISAID clade | | GRA | | | | | | |
| WHO label | Omicron | Omicron EG.5 "Eris" | Omicron XBB.1.5 "Kraken" | Omicron XBB.1.9.1 "Hyperion" | Omicron XBB.1.16 "Arcturus" | Omicron GW.5 | Omicron XBB.1.19.1 | Omicron FL.2 |
| First detected in | South Africa & Botswana | Indonesia | USA | Singapore | India | China | USA | Austria |
| Variant Designation (World Health Organization) | Former Variant of Concern (VOC) | Variant of Interest (VOI) | Variant of Interest (VOI) | Variant Under Monitoring (VUM) | Variant of Interest (VOI) | - | - | |
| Available sequences worldwide | 7,723,084 | 18,273 | 189,754 | 23,540 | 27,509 | 103 | 931 | 4,239 |
| Cumulative prevalence worldwide | 51% | <0.5% | 1% | <0.5% | <0.5% | <0.5% | <0.5% | <0.5% |
| Available sequences Pakistan | 3317 | 1 | 54 | 117 | 10 | 24 | 126 | 28 |
| *First detection from Pakistan | Dec 3, 2021 | Mar 3, 2023 | Jan 2, 2023 | Dec 24, 2022 | Apr 29, 2023 | May 04, 2023 | Feb 11, 2023 | Feb 14, 2023 |
| **Cumulative prevalence in Pakistan | 90.7% | <0.5% | 8.45% | 17.43% | 14.9% | 30% | 22.22% | 5.04% |

*Based on date of sample collection (as of Sep 13, 2023)

**Apparent cumulative prevalence is the ratio of the variant sequences to all sequences collected since its identification in Pakistan.

Note: The lineage assignment was performed using latest Pangolin USHER model (Pango v.4.3.1, pangolin-USHER v1.2.1) (https://github.com/cov-lineages/pangolin).



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DISTRIBUTION OF OMICRON SUBLINEAGES BASED ON WHOLE-GENOME SEQUENCES (N=431) FROM PAKISTAN



- Enumerated lineages are circulating above 1% nationally from Mar to Aug, 2023. '
- XBB.1.5 sublineages including XBB.1.5.1.101 (n=1), XBB.1.5.15 (n=1), XBB.1.5.20 (n=1), and XBB.1.5.23 (n=1), XBB.1.5.31 (n=1), and, XBB.1.5.48 (n=2), are aggregated to XBB.1.5, except XBB.1.5.24 (n=26).
- Sublineages of 'XBB.1.16' including XBB.1.16.8 (n=1), and, XBB.1.16.16 (n=1) are aggregated to XBB.1.16.
- Further, sublineages of FL, including FL.4 (n=11), FL.10 (n=11), FL.13, (n=4), and, FL.26 (n=9) are aggregated to 'others', except FL.2 (n=15).

Note: The lineage assignment was performed using latest Pangolin USHER model (Pango v.4.3.1, pangolin-data v1.19) (https://github.com/cov-lineages/pangolin).



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Month-Wise Prevalence of Variants of Interest (VOI), Variants Under Monitoring (VUM) and Other Omicron top sublineages from Pakistan

MAR 2023 TO AUGUST, 2023 (AS OF SEP 13, 2023)



As of 06 Sep, 2023, EG.5, XBB.1.5, and XBB.1.16 are designated as Variants of Interest (VOIs), while, XBB.1.9.1,

and XBB.2.3 as Variants Under Monitoring (VUMs).



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Geographical Distribution of Omicron Sublineages from Pakistan

MAR 2023 TO AUGUST, 2023 (AS OF SEP 13, 2023)



One case of EG.5.2 "Eris" on Mar 26, 2023, from Lahore, and one case of EG.5.1.1 on Jul 19, 2023, from Karachi have been reported.