

Genetic diversity of the novel coronavirus SARS-CoV-2 (COVID-19) in Portugal

More information at <https://insaflu.insa.pt/covid19>



Situation Report

August 1st, 2023

The National Institute of Health Doutor Ricardo Jorge, I.P. (INSA) has analysed **47679** SARS-CoV-2 genome sequences so far.

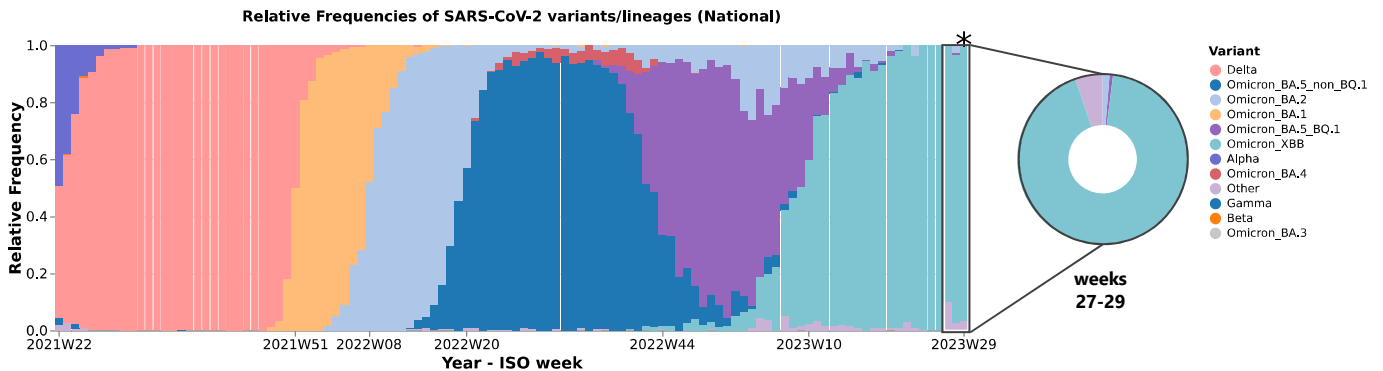


Figure 1: Evolution of the weekly relative frequency of the SARS-CoV-2 variants circulating in Portugal between ISO weeks 22/2021 (31/05/21 - 06/06/21) and 29/2023 (17/07/23 - 23/07/23), with emphasis on the latest weeks. The frequencies presented for the last week under analysis (ISO week 29*) might change in the next report, given that some data from that period is still being processed. *This and other graphs can be explored interactively on the website.*

Main highlights

- The **recombinant lineage XBB** (and its descendants) has been increasing in circulation since the beginning of 2023, leading to its **dominance in Portugal by week 10** (Figure 1). In the latest survey, XBB presented a **relative frequency of 92.8%** (weeks 27 to 29), mainly due to its **XBB.1.5, XBB.1.9 and XBB.1.16 sub-lineages (and its descendants)** (Figure 2). It is highlighted that XBB.1.9 (in particular its descendant EG.5.1) has revealed a considerable increase in frequency in Portugal, representing around 54% of all sequences analysed in the last three weeks (weeks 27 and 29).
- Lineage BA.5 of variant Omicron** (including its multiple sub-lineages) was **dominant in Portugal** between the weeks 19 of 2022 (09-15/05/22) and 7 of 2023 (13-19/02/23). Since week 44 of 2022, its circulation was mainly due to its **sub-lineage BQ.1 (and its descendants)** (Figure 1). In the last few weeks, it has displayed a residual frequency, with only one sequence being detected in the period of weeks 27 to 29 (03/07/23 - 23/07/23) (Figure 1).
- In 2022, **lineage BA.2 of variant Omicron** was **dominant in Portugal** between **weeks 8 (21-27/02/22) and 19 (09-15/05/22)**. An increase in frequency was observed between week 51 of 2022 and week 3 of 2023, mainly due to the circulation of its **lineage CH.1.1 (and its sub-lineages)** (Figure 1 and Figure 2). Since this period, lineage BA.2 has shown a decrease in frequency, presenting **1.3% between weeks 27 and 29**.
- The sub-lineages with the highest relative frequency in Portugal (such as XBB and their descendants) present constellations of mutations potentially associated with resistance to neutralizing antibodies. Thus, their higher transmissibility may be due to a higher immune evasion capacity.

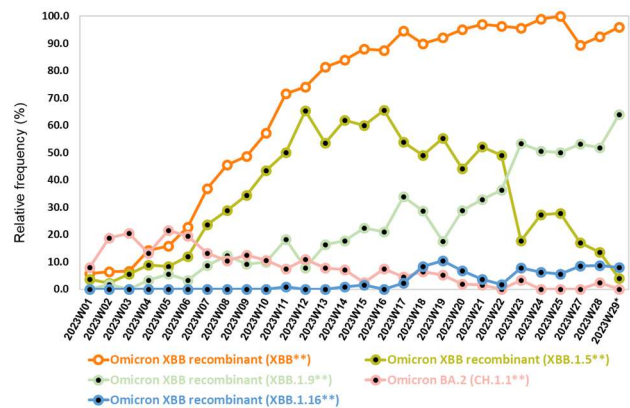
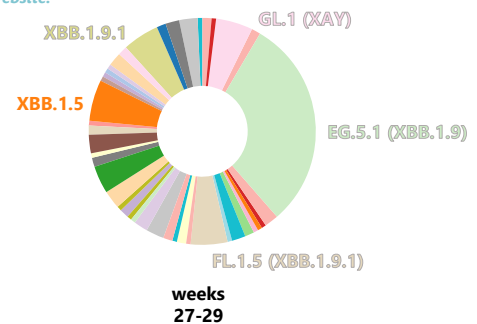


Figure 2: Evolution of the relative frequency of some sub-lineages of interest circulating in Portugal. The circular graph shows the distribution of the relative frequencies of SARS-CoV-2 sub-lineages in the period of ISO weeks 27 and 29 (03/07/23 - 23/07/23), **highlighting sub-lineages representing >5% of the sequences analyzed in this period.** The evolution of CH.1.1**, XBB**, XBB.1.5**, XBB.1.9** and XBB.1.16** relative frequencies during the last weeks is shown in the line plot. It is expected that the frequencies presented for the last week under analysis (ISO week 29*) might change in the next report, given that some data from that period is still being processed. **the presented relative frequencies correspond to the sub-lineages and their descendants. *Other graphs can be explored interactively on the website.*

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Useful links

<https://www.ecdc.europa.eu/en/covid-19/situation-updates/variants-dashboard>
<https://www.who.int/activities/tracking-SARS-CoV-2-variants>
<https://cov-lineages.org/lineage-list.html>
<https://outbreak.info/>
<https://www.gisaid.org/>