

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

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Situation Report

October 25th, 2022

The National Institute of Health Doutor Ricardo Jorge, I.P. (INSA) has analysed **43024** SARS-CoV-2 genome sequences so far.

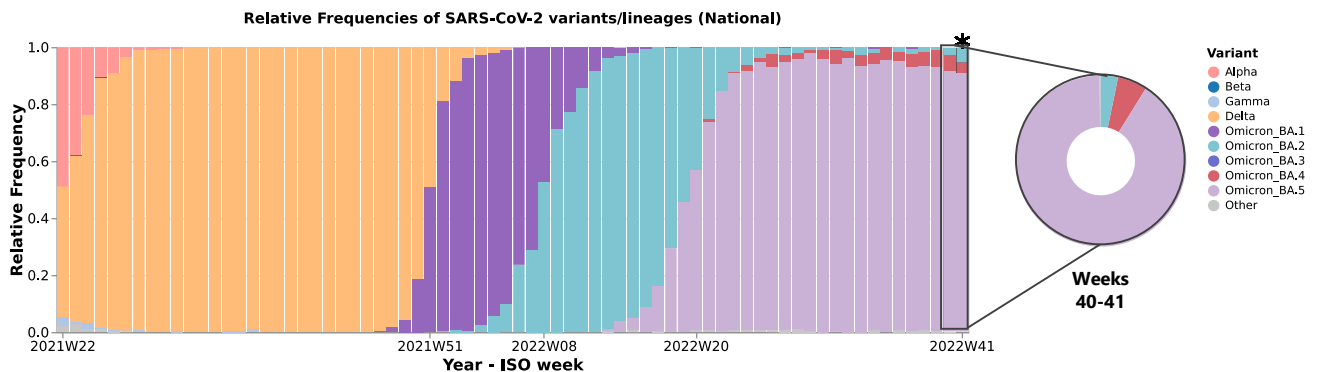


Figure 1: Evolution of the weekly relative frequency of the SARS-CoV-2 variants circulating in Portugal between ISO weeks 22 (31/05/21 - 06/06/21) and 41 (10/10/22 - 16/10/22). The frequencies presented for the last week under analysis (ISO week 41*) might change in the next report, given that some data from that period is still being processed. *This and other graphs can be explored interactively on the website.*

Main highlights

- **Lineage BA.5 of the variant Omicron** (including its multiple sub-lineages) is **dominant in Portugal** since week 19 (09/05/22 - 15/05/22) and presents a **relative frequency of 90.7%** according to the most recent national sequencing survey on week 41 (10/10/22 - 16/10/22) (**Figure 1**).
- **Lineage BA.4 of the variant Omicron** represented **5.6%** of the sequences analyzed in weeks 40 and 41, showing no significant frequency fluctuations.
- **Lineage BA.2 of the variant Omicron** was dominant in Portugal between weeks 8 (21/02/22 - 27/02/22) and 19 (09/05/22 - 15/05/22). Since then, its relative frequency is residual, although a **slight increase** was seen in weeks 40 and 41, representing **3,2%** of the sequences.
- On behalf of the continuous monitoring of the introduction and circulation of (new) SARS-CoV-2 (sub-)lineages in Portugal, **we have been observing the emergence of sub-lineages of interest**, with novel constellations of mutations potentially associated with resistance to neutralizing antibodies. Among these, we highlight the **sub-lineages of BA.2** (e.g., BA.2.75.2), **BA.4** (e.g., BA.4.6) and **BA.5** (e.g., BF.7, BF.13 and BQ.1), some of them showing considerable increase of circulation in some countries, particularly in Europe. In Portugal, it is highlighted the **increase of the relative frequencies of BF.7, BF.13 and BQ.1**** (**enrolling BQ.1 and its sub-lineages), in particular its descendent **BQ.1.1** (**Figure 2**). To date, only one sequence of the recombinant sub-lineage XBB has been detected in Portugal. XBB has shown marked increase in frequency in some countries (e.g., Singapore).

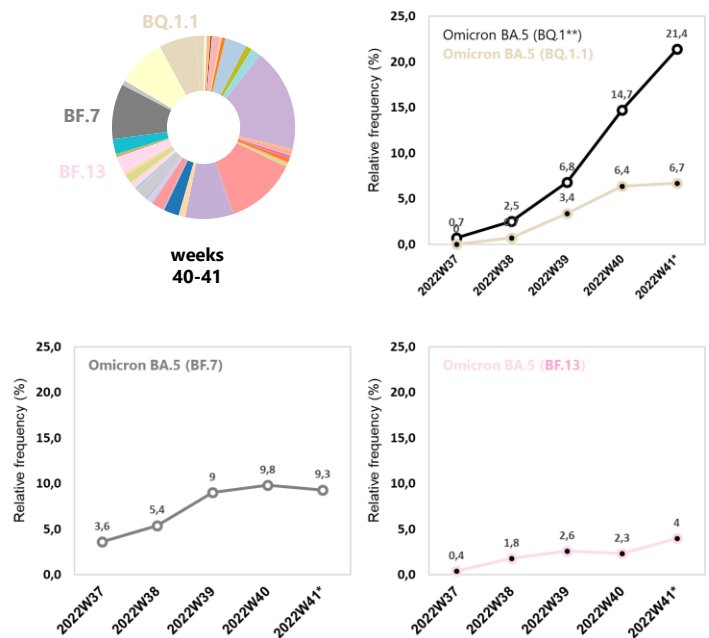


Figure 2: Sub-lineages of interest circulating in Portugal. The circular graph shows the distribution of the relative frequencies of SARS-CoV-2 sub-lineages in the period of ISO weeks 40 and 41 (03/10/22 - 16/10/22), highlighting sub-lineages showing an increasing trend (see the evolution of their relative frequencies during the last 5 weeks in the line plots). BQ.1** enrolls BQ.1 and its sub-lineages (including BQ.1.1). It is expected that the frequencies presented for the last week under analysis (ISO week 41*) 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.*

Autorship

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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/>