

SARS-CoV-2 variant detection at Color

Version 1.0 – Updated 12.7.21

The first sample in the United States confirmed to contain the Omicron variant of SARS-CoV-2 was detected at the Color lab on November 30, 2021. Additionally, bioinformatic analysis and early empirical data suggest that the mutations in the Omicron variant do not impact assay performance. For these reasons, it is expected that the Color Assay will continue to perform well in detecting the Omicron variant.

Color maintains active strain surveillance protocols to ensure that our assay remains robust and strong in its ability to detect important SARS-CoV-2 strains that emerge.

There are 4 parts of this program:

1) Bioinformatic Strain Monitoring

The Color bioinformatics team regularly scans through the sequences of all SARS-CoV-2 strains collected in the US that are reported to the [national database](#). We look specifically for any strain variation that overlaps the regions targeted by our assay primers. Of note, most of the clinically important variation occurs in the “S-Gene” of the virus, which changes how effectively the virus can interact with receptors on human cells. The Color assay targets different regions of the viral genome that are much less susceptible to variation driven by selective pressure. Our analysis showed that the mutations present in the omicron variant are unlikely to impact assay performance.

2) Empirical Testing

As potentially interesting strains emerge, the laboratory teams empirically test their impact using synthetic targets. We regularly use these products to rigorously test and re-test the sensitivity of our assay.

3) Strain Sequencing

At the direction of departments of public health, Color supports a number of strain sequencing programs with partners like [California's CovidNET program](#) operated through the State’s VDRL laboratory in Richmond, and the Chiu Lab at UCSF. This helps us ensure that the state (and the

world) has visibility into the strains that are circulating in our region, and how that ecology is changing over time.

4) Assay robustness

We are continuously developing new ways to proactively add robustness to our detection strategy.

Summary:

- The Color assay can detect the Omicron variant.
- Color actively monitors new strains as they are emerging.
- Color participates in collaborative efforts to contribute to this awareness globally.
- Color's assay will continue to develop as the world changes.