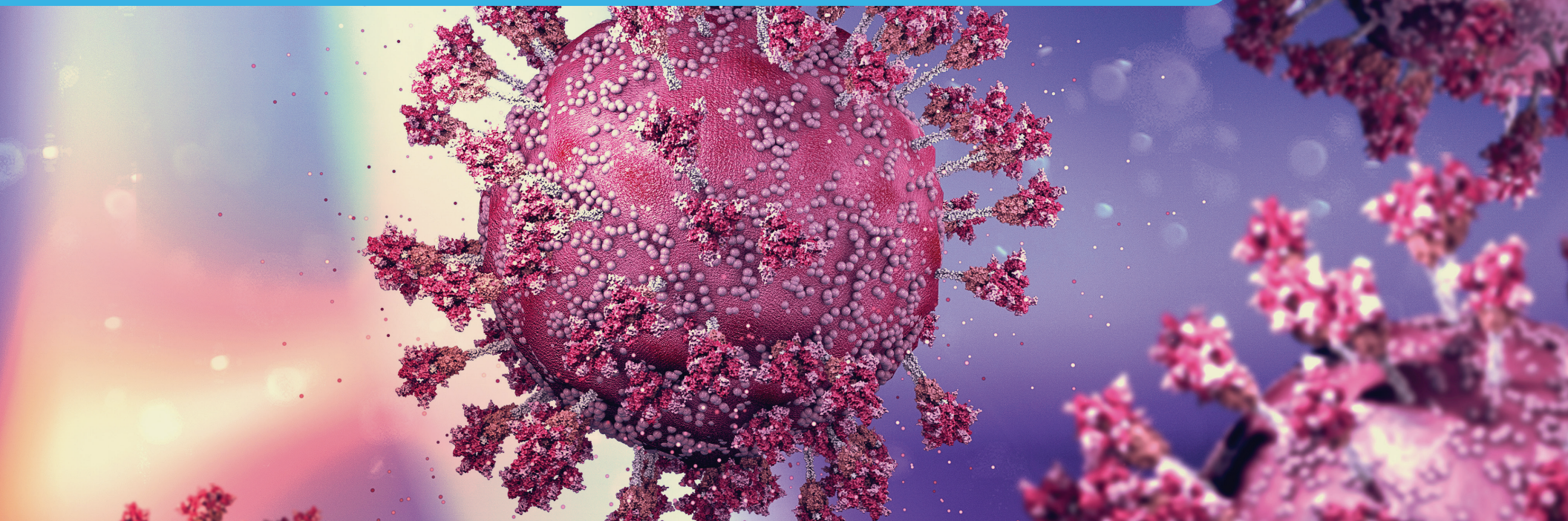


PuriFi Labs™

PuriFi AMP technology demonstrates a 92% total airborne reduction of SARS-CoV-2 B.1.1.529 (Omicron) Variant in 29 minutes, with a progressive reduction of 99.998% in 59 minutes*.

Latest SARS-CoV-2 B.1.1.529 (Omicron) Variant Airborne Test Report Summary



PuriFi demonstrates 92% total airborne reduction of SARS-CoV-2 B.1.1.529 (Omicron) Variant in 29 minutes, with a progressive reduction of 99.998% in 59 minutes*.

*Environmental Test Conditions: 1,280 cu. ft. biosafety room, 73°± 2° F, 37% RH, 170 CFM, and 8 ACH.
There is currently no universal solution for preventing coronavirus infections. PuriFi Labs encourages following hygiene guidelines in the manner suggested by government authorities. To view complete test reports, visit our Test Report page: PurifiLabs.com/test-reports

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Under real-world test conditions, PuriFi AMP technology inactivates tested airborne virus B.1.1.529 (Omicron) Variant of SARS-CoV-2.

In vitro study performed by Innovative Bioanalysis proved PuriFi's ability to effectively inactivate the SARS-CoV-2 B.1.1.529 (Omicron) Variant in the air.*

Purpose

Test the efficacy of PuriFi Airborne Molecular Purification (AMP) technology against aerosolized SARS-CoV-2 B.1.1.529 (Omicron) Variant in real-world HVAC system test conditions.

Method

Innovative Bioanalysis used a large, BSL-3 certified biosafety room to simulate realistic conditions within a commercial building or residential property.

PuriFi AMP technology was duct-mounted to the supply side of a real-world HVAC fan system, as recommended by the manufacturer for proper installation, supplying approximately 170 CFM of air into the room.

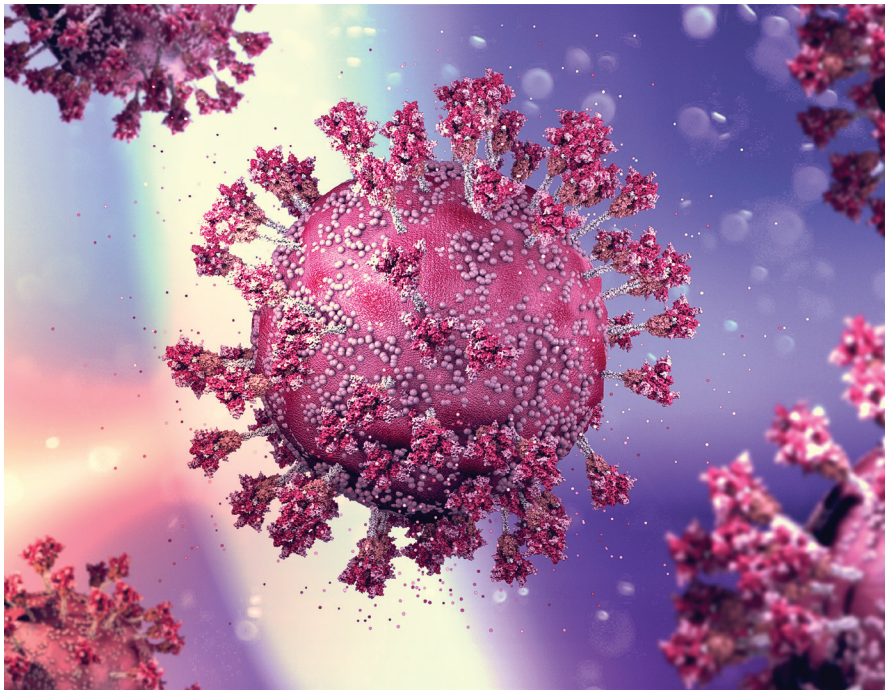
The HVAC fan system, contained entirely within the biosafety room, consisted of an air handler fan box connected to 32 feet of metal ductwork, with two diffusers positioned in similar interval distances to a typical indoor environment with a central HVAC system.



- **Room Size:** 1,280 cubic feet
- **Temperature:** 73°± 2° F
- **Relative Humidity:** 37%
- **HVAC System Airflow:** 170 CFM
- **Air Changes Per Hour:** 8 ACH
- **Total Duct Travel Distance:** 32 Feet

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Test conditions represented an active mechanical system and indoor environment through a “Hot Start” scenario where the PuriFi product and HVAC fan system were activated 15 minutes before introducing the pathogen into the environment.



Millions of micro-size SARS-CoV-2 Omicron Variant viral aerosols were then aerosolized into the air through a central nebulization system, located at 5’ high, to simulate real-world human expulsion and behavior. The viral aerosol particles ranged in size between 0.8 micron and 1.4 micron, thereby representing real-world aerosol sizes that could be expelled by humans, remain airborne for extended periods of time, and fit within the size range of respirable particles.[1]

Four low speed mixing fans operated in each corner of the room to provide homogenous viral distribution and to represent human indoor walking speeds with intermittent frequency of movement.

Four equidistant bio sampling ports extended 24” down from the ceiling, into the “breathing zone”, along the centerline of the biosafety room, to simulate real-world human breathing locations throughout the room.

Virus Composition and Particle Size:

- **Virus Type:** SARS-CoV-2 B.1.1.529 (Omicron) Variant, Enveloped RNA Virus
- **Virus Diameter:** 120 nm to 160 nm
- **Aerosol Medium:** Cell Culture
- **Aerosol Particle Size:** 0.8 micron to 1.4 micron, representing real-world human aerosol sizes that remain airborne for extended periods of time and represent a respirable size range[1]

Results

Air sampling was taken at four different time points, 0 minutes, 14 minutes, 29 minutes, and 59 minutes of elapsed exposure time. One static control and one airflow control were completed for each time point, and one viral challenge for each time point was conducted using the same methodology.

PuriFi’s AMP Technology Achieved:

- **99.998% total neutralization in 59 minutes**
  - 99.990% reduction in 59 minutes vs ventilation*
- **92.32% total neutralization in 29 minutes**
  - 87.37% reduction in 29 minutes vs ventilation*
- **58.25% total neutralization in 14 minutes**
  - 44.34% reduction in 14 minutes vs ventilation*

[1] Thoracic and respirable particle definitions for human health risk assessment, J.Brown et al. Particle and Fibre Toxicology,2013, 10:12, http://www.particleandfibretoxicology.com/content/10/1/12, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3640939/pdf/1743-8977-10-12.pdf

**Environmental Test Conditions: 1,280 cu. ft. biosafety room, 73°±2° F, 37% RH, 170 CFM, and 8 ACH. There is currently no universal solution for preventing coronavirus infections. PuriFi Labs encourages following hygiene guidelines in the manner suggested by government authorities.*
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