



Vyv Microbiology Update
April 15, 2021



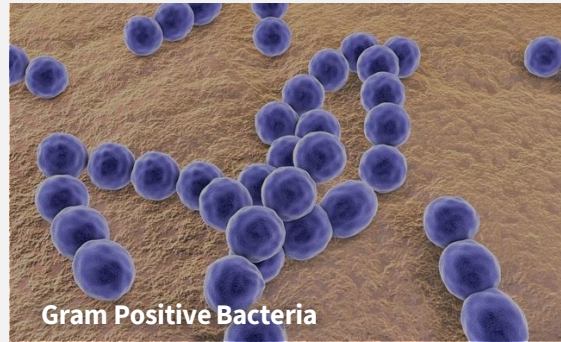
Agenda:

- Vyv Technology & Viral Efficacy
- Key takeaways from Food Processing Studies

Original Claim Set Focused on Living Microbes



The Power of
Visible
Antimicrobial
Light



Gram Positive Bacteria



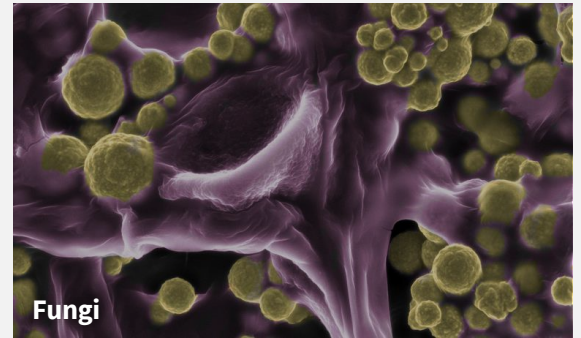
Bacterial Endospores



Gram Negative Bacteria



Yeast



Fungi

And Now Expanded to Include Viruses

Vyv's New Claim

Vyv kills* viruses, bacteria, fungi, yeasts, mold.

**Testing on a non-enveloped virus (MS2 bacteriophage) showed a 99.985% reduction in controlled laboratory testing in 6 hours on hard surfaces. MRSA and E. coli showed 90%+ reduction in controlled laboratory testing in 24 hours on surfaces. Results may vary depending on the amount of light that is reaching the surfaces in the space where the product is installed and the length of time of exposure. Use of Vyv antimicrobial light is not intended to replace manual cleaning.*

Viral Testing Results

	Organism	Medium	Irradiance (mW/cm ²)	Time (hrs)	Result
Vyv	MS2	PBS (Saline)	2	6	>99.985%
Vyv	MS2	Artificial Saliva	2	6	99.41%
Mt. Sinai	SARS-CoV-2	PBS (Saline)	0.035	4 24	55% 90%
Mt. Sinai	SARS-CoV-2	PBS (Saline)	0.076	24	98%
Mt. Sinai	SARS-CoV-2	PBS (Saline)	0.15	4 24	64% 99.6%
Mt. Sinai	SARS-CoV-2	PBS (Saline)	0.6	1 8	72% 99.7%
Mt. Sinai	Influenza A	PBS (Saline)	0.6	1 4 8	31% 63% 82%

Testing demonstrates efficacy in applications from overhead lighting to embedded applications

Viral Testing summary

~ June'20 time period, research began to emerge around 405nm & viruses.

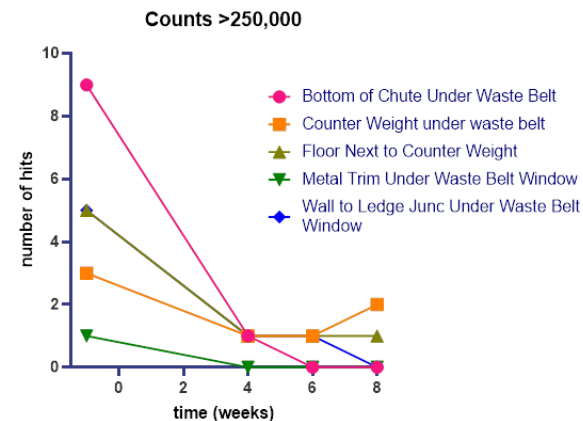
Testing methods & results were inconsistent & outcomes not applicable to every day use cases.

Vyv's Dr. Kiegel designed a testing protocol w/3rd party lab to begin testing with a non-enveloped viruses (surface inactivation) – results received late March (*Vyv's viral claims are based on these findings*).


Also in March, [Icahn School of Medicine at Mount Sinai](#) released a pre-publication paper around 405nm & impact on enveloped viruses.

Food Processing Customers:

- Completed (5) customer pilots where the customer validated efficacy Q3/Q4'20
- All testing completed within active (operating) food processing plants
- All customers are expanding deployment of Vyv based on results
- Key learnings will be included in messaging to the market on Vyv's expanded claim set



- Consistently achieving & sustaining 1-log reduction (90%+) is meaningful to this industry
- Vyv technology is having an important impact on the presence of *Listeria* (validated by two customers)
- Reducing the incident rate of *Listeria* is a significant, quantifiable financial return for organization



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