

MedCu Antiviral Copper Mask Technology

Prevents Coronavirus Infection



Opportunity Highlights



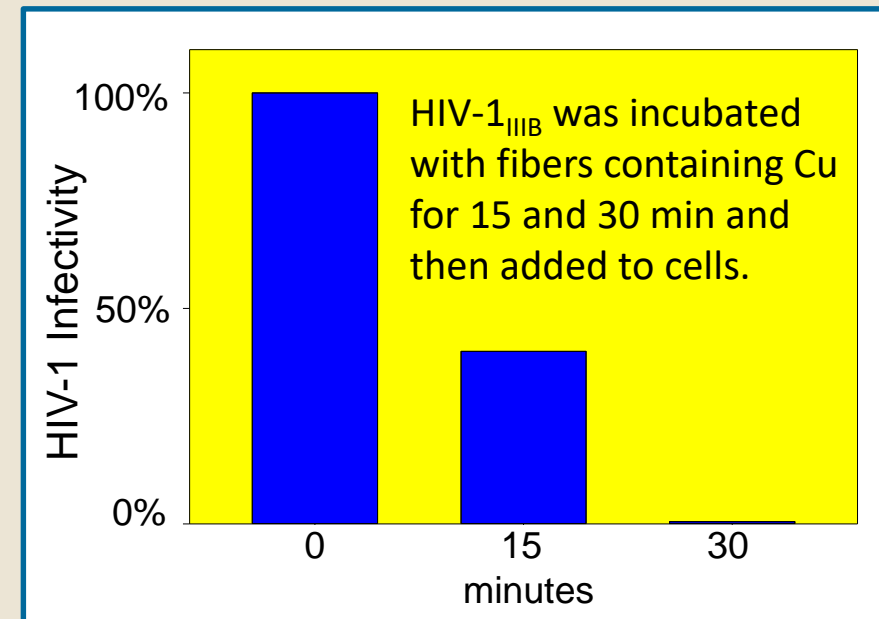
- MedCu developed the only commercial copper oxide self-sterilizing, viral-deactivating face mask technology
- Demonstrated deactivation of >99.99% of Avian Flu and Influenza virions on mask surface within 30 minutes
- **Copper was shown to inactivate the Corona virus, as just confirmed by NIH investigators (April 2020)¹**
- Antiviral layers on the inside and outside of the mask drastically reduce the risk of viral cross-contamination
- **Anti-viral layer can easily be integrated today in your mask manufacturing processes**
- The only copper technology with FDA Clearance and CE Mark Certification for wound dressings (2019)
- Strong IP portfolio – 30 patents worldwide
- Over 40 publications in peer-reviewed journals
- Strong leadership team

¹van Doremalen N. et al. "Aerosol and surface stability of HCoV-19 (SARS-CoV-2) compared to SARS-CoV-1" The New England Journal of Medicine. DOI: 10.1056/NEJMc2004973 (2020)



Copper is a Potent Biocide

- **Copper kills the coronavirus¹**
- Copper alloys inactivate within minutes human coronavirus 229E²
- Copper oxide has potent antiviral, antibacterial, and antifungal broad spectrum biocidal properties³
- Filters, fabrics, and masks embedded with copper oxide microparticles have been shown to kill a wide array of enveloped and non-enveloped viruses within minutes^{4,5}



1 van Doremalen N et al (2020) "Aerosol and surface stability of HCoV-19 (SARS-CoV-2) compared to SARS-CoV-1". The New England Journal of Medicine. DOI: 10.1056/NEJMc2004973

2 Warnes S et al (2015) "Human Coronavirus 229E Remains Infectious on Common Touch Surface Materials", mBio, Vol. 6 Issue 6 e01697-15.

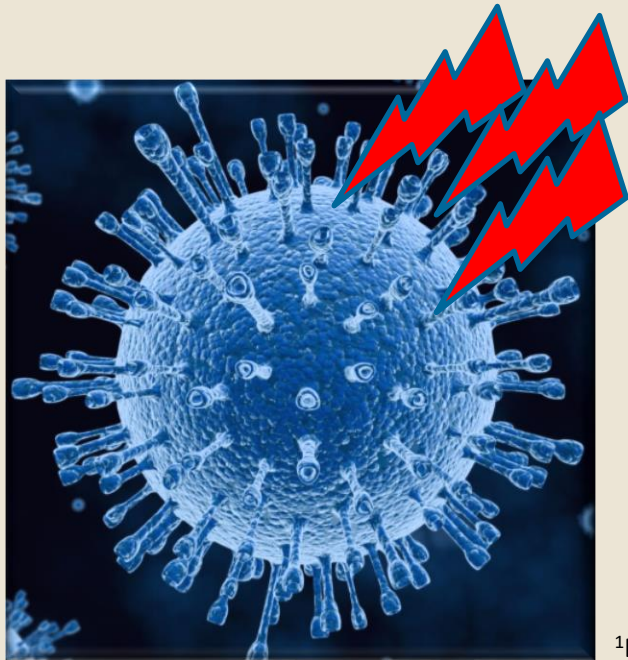
3 Borkow G (2012) Using copper to fight microorganisms. *Current Chemical Biology* 6:93-103.

4 Borkow et al (2007) Neutralizing viruses by copper oxide based filters. *Antimicrobial Agents and Chemotherapy*, 51(7): 2605-2607

5 Borkow et al (2010) Putting Copper Oxide into Action: A Novel Anti-Influenza Biocidal Mask. *Plos One*, 5(6):e11295.

Copper Antiviral Mechanism

- Permeabilization of the membrane surrounding the virions
- Denaturation of genetic materials (DNA and RNA)
- Alteration of key viral proteins and inhibition of their biological activity



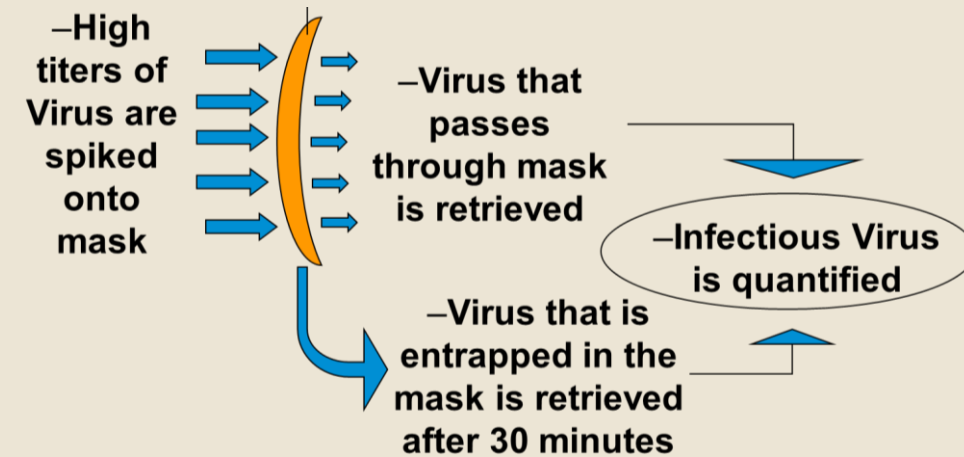
Copper ions released from the mask cause massive damage to viral cell wall components, viral genes, and key proteins¹

¹Borkow & Gabbay (2005) Copper as a biocidal tool. *Current Medicinal Chemistry* 12:2163-75;

MedCu Mask Kills Avian & Human Influenza A*



- Tests conducted by independent FDA- approved Lab and protocols
- Good Laboratory Practice (GLP) test procedures
- Simulation of breathing conditions (Nelson labs)



	Mask	Direct Contact Inactivation				Viral Filtration	
		Absolute		Above Control Mask			
		Log reduction	% reduction	Log reduction	% reduction	Log reduction	% reduction
Avian Influenza Virus	MedCu	5.2±0.84	>99.999	3.86	99.986	4.35±0.95	99.995
	Control	1.34±0.84	95.3	-	-	4.12±0.64	99.992
Human Influenza A	MedCu	>4.78±0.8	>99.998	2.88	99.87	2.91±1.19	99.88
	Control	1.9±1.03	98.8	-		3.55±1.14	99.97

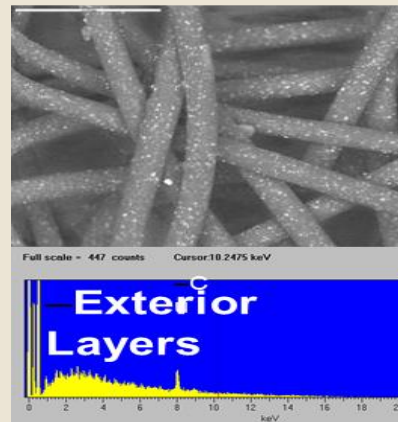
* Borkow et al (2010) Putting Copper Oxide into Action: A Novel Anti-Influenza Biocidal Mask. PLoS One, 5(6):e11295

Strong Performance in All Tests*



Test	Result	Conclusion
Elution of copper in Simulated Breathing	Pass	Met Type IIR Mask requirements and safety (CE registration)
Elution of copper into saliva	Pass	
Bacterial Filtration Efficacy	Pass	
Differential Pressure Test	Pass	
Flammability Test	Pass	
Latex particle challenge	Pass	
Cytotoxicity	Pass	
Skin Irritation Test	Pass	

Scanning Electronic Microscopy and Energy Dispersive X-Ray Spectroscopy analysis



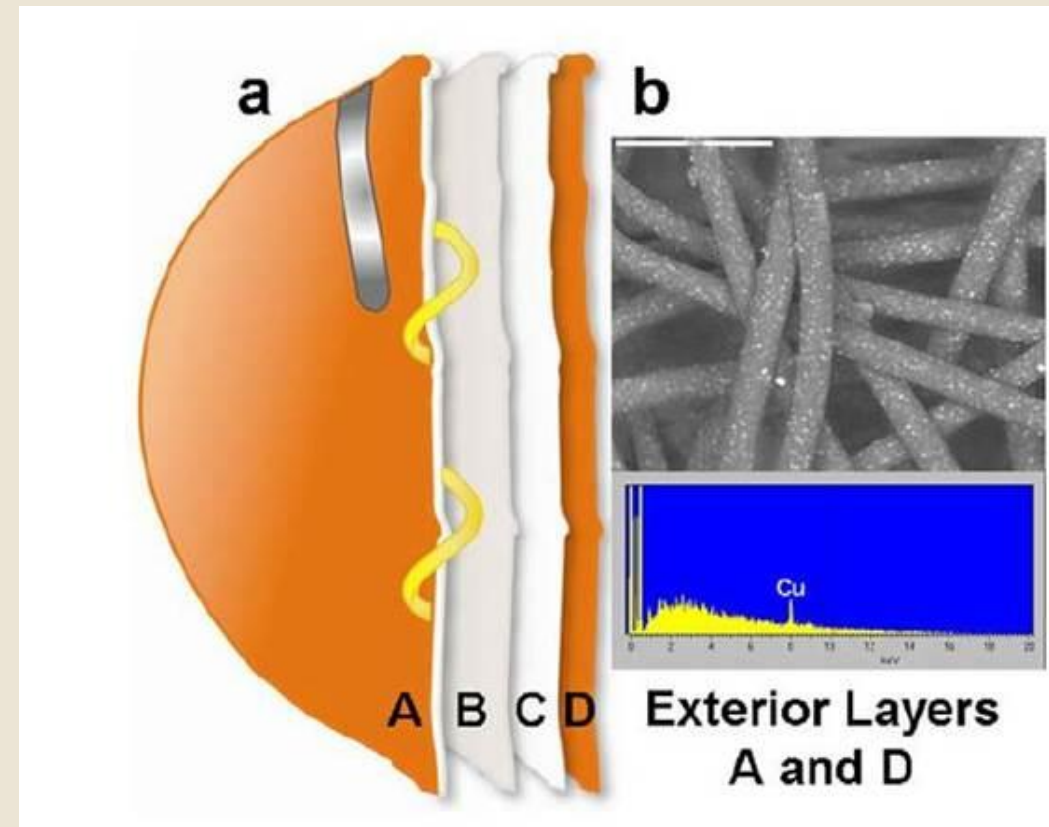
Demonstrated homogenous distribution of copper oxide microparticles

* Borkow et al (2010) Putting Copper Oxide into Action: A Novel Anti-Influenza Biocidal Mask. PLoS One, 5(6):e11295.

Typical Antiviral Mask Design

The mask consists of 4 layers:

- **A and D:** External layers of spun bond polypropylene, impregnated with copper oxide microparticles that kill viruses trapped on the masks
- **B:** An internal meltblown filtration layer
- **C:** A hard polyester layer that supports the mask's 3-dimensional shape
- **Other configurations are possible**



- The only copper technology with FDA Clearance and CE Mark Certification for wound dressings (2019)
- ISO 13485 medical device certification
- Rigorous safety/efficacy testing
- Strict quality control



Simple Integration with Third-party Masks

- Technology can easily and cost-effectively add potent antiviral capabilities to your surgical and N95 masks
- Easy, seamless integration into existing manufacturing process
- Material production process is scalable to support high quantifies



Why Partner with MedCu?

- Offers the only commercial copper antiviral technology that can help your surgical and N95 masks prevent coronavirus infection and cross-contamination
- Anti-viral layer can easily and cost-effectively be integrated in your mask manufacturing processes
- MedCu technology is backed by 15 years of research published in >40 peer-reviewed journals
- MedCu Copper technology has FDA Clearance and CE Mark Certification for wound dressings (2019)
- Strong IP portfolio – 30 patents worldwide
- Strong leadership team



Leadership Team



Danny Lustiger, MBA, CPA
Co-Founder & CEO

Past President & CEO of Cupron;
CFO of Shikun & Binui
conglomerate; GM and president
of Optibase Inc; Over 20 years
experience in high- tech and
biomedical firms; financials
and general management



Gadi Borkow, Ph.D.
Co-Founder & CSO

Biochemist and
Microbiologist, Chief Medical
Scientist of Cupron. World
expert in his field with focus
on Copper and its derivatives.
Published over 130 peer
review scientific articles,
editorial board member of
5 scientific journals



Shaya Kalif, BSc Industrial
Engineering
Chief, Operations

Seasoned Operations leader with
extensive experience managing
logistics and supply chain
operations in the medical industry



Nimrod Bin-Nun,
MBA

Manager, Business
Development

14 years of senior
management, finance, and
BD positions in global
pharma (Teva), medical
device, and diagnostic
companies.

THANK YOU!