OpGen®

Pneumonia can be fatal.

CLEAR DIRECTION for Rapid Diagnosis of Pneumonia in Hospitalized Patients

The greatest challenge in managing pneumonia patients in the ICU involves the ability to rapidly identify the causative pathogen(s), select timely and appropriate antibiotics, and prevent secondary pneumonia.

Clinical outcomes are highly dependent upon timely and appropriate therapy.

The Unyvero Lower Respiratory Tract panels utilize PCR to overcome the limitations of routine microbiology which takes several days and relies on organism growth for ID and AST often hampered by the inability to culture the organism. Routine microbiology can fail to determine a causative agent in >50% of pneumonia patients and may prolong exposure to unnecessary broad-spectrum antibiotics.[1]

Comprehensive Testing Panel

FDA-cleared Unyvero uniquely and accurately detects the most clinically relevant pathogens and antibiotic resistance markers associated with pneumonia.

BACTERIA		RESISTANCE	GENES	
Acinetobacter spp.	*Moraxella catarrhalis*	Carbapenems	*kpc*	*oxa*-48
Chlamydia pneumoniae	*Morganella morganii*		*ndm*	*oxa*-58
Citrobacter freundii	*Mycoplasma pneumoniae*		*oxa*-23	*vim*
Enterobacter cloacae complex	*Proteus* spp.		*oxa*-24	
Escherichia coli	*Pseudomonas aeruginosa*	3rd Generation Cephalosporins	*ctx*-M	
Haemophilus influenzae	*Serratia marcescens*	Oxacillin/Cefoxitin	*mec*A	
Klebsiella oxytoca	*Staphylococcus aureus*	Penicillin	*tem*	
Klebsiella pneumoniae	*Stenotrophomonas maltophilia*			
Klebsiella variicola	*Streptococcus pneumoniae*			
Legionella pneumophila				

FUNGI
Pneumocystis jirovecii *

The only FDA-cleared panel for lower respiratory tract infections that detects *Pneumocystis jirovecii*

Specimen Types:
Endotracheal Aspirate
Bronchoalveolar Lavage (including mini-BAL)

* included on the Unyvero LRT BAL panel.

The rapid, sample-to-answer LRT BAL Panel covers:

- Clinically relevant pathogens of HAP, VAP and hospitalized CAP
- Urgent and Serious pathogens on CDC's Antimicrobial Resistance Threat list: CRE *Acinetobacter*, CRE Enterobacterales, ESBL Enterobacterales, MDR *P. aeruginosa*, MRSA
- Atypical pathogens: *Chlamydia pneumoniae*, *Legionella pneumophila*, *Mycoplasma pneumoniae*, *Pneumocystis jirovecii*
- 10 AMR genes

unyvero

Unyvero LRT BAL detects a panel of clinically relevant pathogens that cause lower respiratory tract infections such as pneumonia. Utilizing this comprehensive panel simultaneously tests for common and atypical pathogens saving diagnostic time, reducing sequential esoteric testing and enabling adjustment of empiric antibiotics days faster than culture.

Unyvero Provides Rapid and Actionable Results and Supports Antibiotic Stewardship.[2]

Unyvero reduced the use of inappropriate antibiotic therapy by **45.1%**

Unyvero gives results on a broad menu of pathogens and resistance genes in **4-5 hours**, versus 72 hours with culture

Unyvero shortened inappropriate antibiotic therapy by **39 hours**, and reduced overall antibiotic therapy duration by **22.54 %**

Patients treated in the Unyvero group had three times higher probability of **appropriate antibiotic therapy**

One patient sample. Comprehensive results.

Don't overlook *Pneumocystis*

- *Pneumocystis jirovecii* infection can cause life-threatening pneumonia in a variety of patients with weak immune systems. Up to 30-40% have HIV/AIDS; however, most patients have chronic lung disease, cancer, inflammatory or autoimmune diseases, solid organ or stem cell transplants.[3]
- *Pneumocystis jirovecii* pneumonia (PJP) can be a source of misdiagnosis due lack of differentiation in clinical presentation or imaging results.[4]
- *Pneumocystis jirovecii* does not grow in culture, is not covered by empiric antibiotics for HAP/VAP or CAP and is not routinely ordered.

Unyvero LRT BAL can detect *Pneumocystis jirovecii* as part of the panel.

Unyvero LRT BAL detects potential pathogens missed by culture, and allows faster targeted antibiotic decisions, reducing the use and duration of inappropriate antibiotics and toxic side effects.

References

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2. Stolz D. September 14, 2021. Webinar.
3. Pneumocystis pneumonia. Centers for Disease Control and Prevention. Accessed April 18, 2022. **https://www.cdc.gov/fungal/diseases/pneumocystis-pneumonia/index.html** (2021)
4. Tehrani, S. *et al*. Case Report: Pneumonia in a Patient With Combined Variable Immunodeficiency: COVID-19 or Pneumocystis Pneumonia? *Front Med* 23, (2022). **doi: 10.3389/fmed.2022.814300**

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