

# Cystic Fibrosis Research News

## Title:

A novel culture medium for isolation of rapidly-growing mycobacteria from the sputum of patients with cystic fibrosis

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## What was your research question?

Mycobacterium abscessus are bacteria that can cause serious lung infections in people with cystic fibrosis (CF). We can find out if a person has an infection caused by these bacteria by growing them in the laboratory from a person's sputum sample. We wanted to test a new and easier method for finding Mycobacterium abscessus in the sputum of people who have CF.

## Why is this important?

The traditional way of growing Mycobacterium abscessus is time-consuming and expensive. The process also suffers from problems with contamination because other bacteria found in

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sputum samples grow faster than the Mycobacterium abscessus. This means that the samples need to be “decontaminated” using chemicals to reduce the amount of unwanted bacteria. Unfortunately, this decontamination process may also kill some of the Mycobacterium abscessus bacteria making it less easy to detect. International guidelines only recommend testing for these bacteria once every year, unless doctors have a strong reason to suspect they are present. In practice, samples may be tested for these bacteria even less often.

## **What did you do?**

A growth medium called BCSA has been recommended for the detection of Mycobacterium abscessus as it is very easy to use and can be used to test every sputum sample from people with CF. This report describes a new agar-plate growth medium (called RGM medium) that has been developed specifically for the isolation of Mycobacterium abscessus. We compared RGM medium and BCSA, for detecting Mycobacterium abscessus in 502 sputum samples from people with CF.

## **What did you find?**

We found that the newer RGM medium detected Mycobacterium abscessus in 42 samples, which was a lot more than the older BCSA medium, which only detected Mycobacterium abscessus in 16 samples. The use of RGM medium allowed the effective detection of Mycobacterium abscessus without needing to decontaminate samples using chemicals. RGM medium is very easy to use and allows doctors to test every sputum sample for this type of bacteria.

## **What does this mean and reasons for caution?**

Mycobacterium abscessus may cause serious infections in some people and we believe that every sputum sample from people with CF should be tested for these bacteria. This might mean that doctors can detect infection and consider treatment with antibiotics at an earlier stage. It also means that we have a better idea of which patients are definitely infected and whether they should be mixing with patients who are not infected. The use of RGM medium

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potentially offers a simple method to test for *Mycobacterium abscessus* in every sputum sample submitted by patients at each clinic visit.

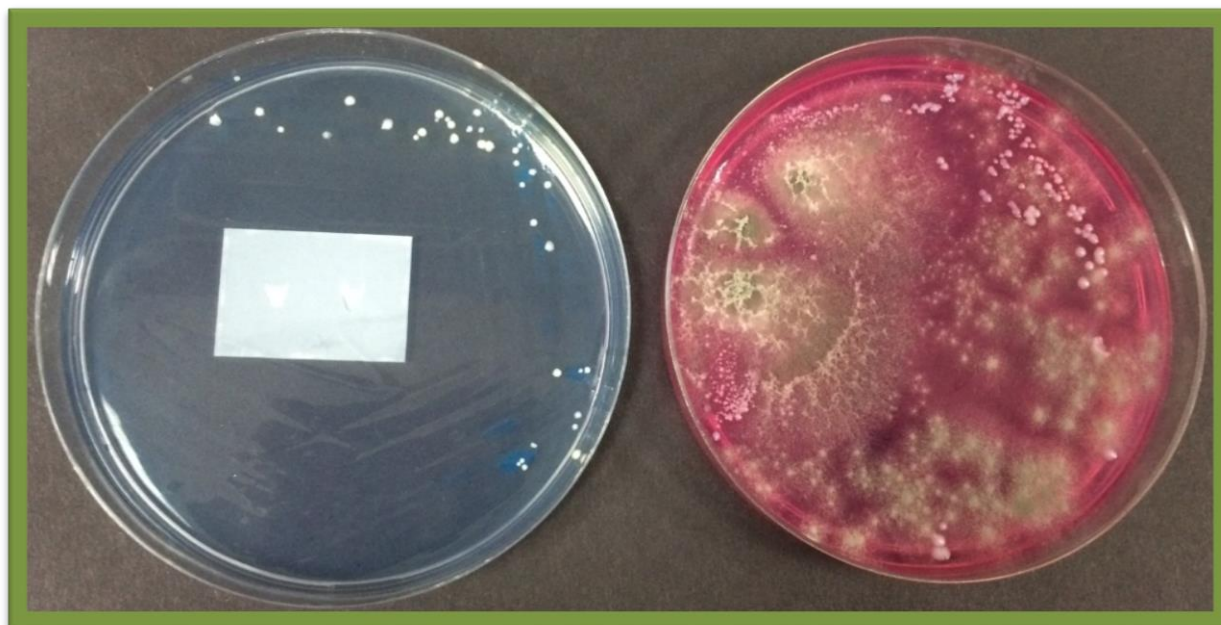
## What's next?

It is very important to find out if other laboratories can reproduce the findings of this study to prove how good the method really is. The authors would like to organise further trials of this new method in several different centres in different countries.

## Original manuscript citation in PubMed

[http://ac.els-cdn.com/S1569199315001174/1-s2.0-S1569199315001174-main.pdf?tid=c4bea09c-156b-11e5-ad1d-0000aab0f27&acdnat=1434599011\\_eea432b7636843b36ffe3b5d12ca2d81](http://ac.els-cdn.com/S1569199315001174/1-s2.0-S1569199315001174-main.pdf?tid=c4bea09c-156b-11e5-ad1d-0000aab0f27&acdnat=1434599011_eea432b7636843b36ffe3b5d12ca2d81)

Annexe 01



*Mycobacterium abscessus* isolated from sputum is shown as white colonies using RGM medium (left) but is undetected using BCSA (right) due to overgrowth with yeasts and fungi.