

# Evaluation of a new reagent for preservation of sputum samples for diagnosis of *Mycobacterium tuberculosis*

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## Introduction

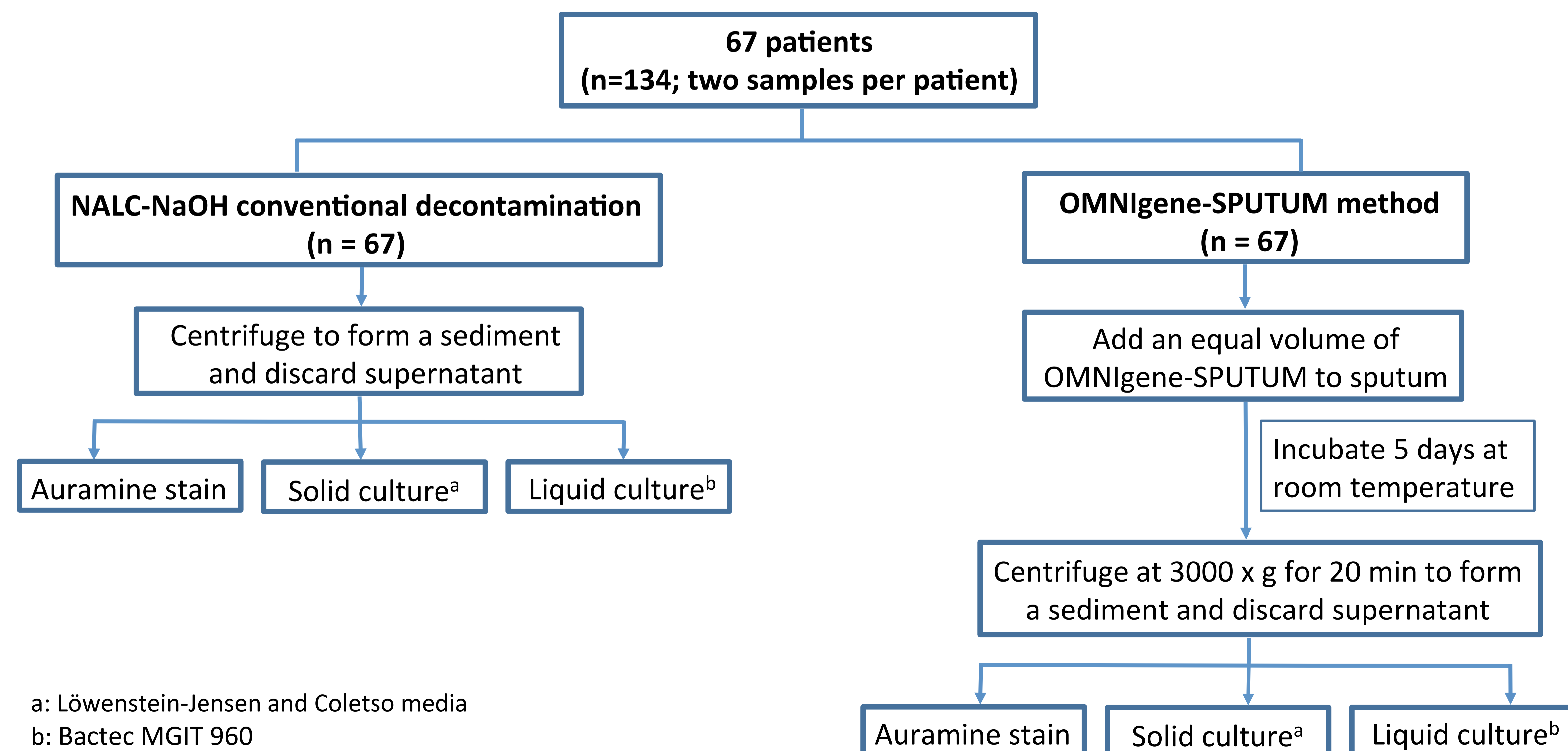
Tuberculosis remains one of the major public health problems worldwide, with 95% of cases and 98% of deaths occurring in developing countries. The transportation of sputa for *Mycobacterium tuberculosis* culture from these countries to laboratories located abroad usually takes more than one week and results in increased contamination and loss of positive cultures.

## Purpose

The aim of this study was to evaluate recovery of *M. tuberculosis* from paired sputum samples that were subjected to different conditions: i) multi-day storage in the OMNIgene-SPUTUM reagent (DNA Genotek), or ii) immediate processing using the NALC/NaOH method.

## Materials and Methods

Patients were enrolled at time of initial diagnosis or during treatment. One hundred thirty-four sputum samples from 67 patients (each pair of sputa collected consecutively during the same day) were analyzed.



a: Löwenstein-Jensen and Coletso media  
b: Bactec MGIT 960

## Results

The results obtained by auramine staining and solid/liquid media for both NALC-NaOH and OMNIgene-SPUTUM decontamination procedures are shown in Table 1.

Table 1. Results obtained for both NALC-NaOH and OMNIgene-SPUTUM decontamination procedures.

		NALC-NaOH n=67 (%)	OMNIgene-SPUTUM n=67 (%)
AURAMINE STAINING	POSITIVE	13 (19.4)	8 (11.94)
	NEGATIVE	54 (80.6)	59 (88.06)
SOLID MEDIA	POSITIVE	7 (10.45)	5 (7.46)
	NEGATIVE	59 (88.05)	61 (91.04)
	CONTAMINATED	1 (1.5)	1 (1.5)
LIQUID MEDIUM	POSITIVE	8 (11.94)	6 (8.96)
	NEGATIVE	58 (86.56)	58 (86.56)
	CONTAMINATED	1 (1.5)	3 (4.48)

## Conclusions

Sputum samples retain viable *M. tuberculosis* after being stored in OMNIgene-SPUTUM for 5 days at room temperature. Compared to the sputa processed with NALC-NaOH immediately post-collection, those stored in OMNIgene-SPUTUM for 5 days exhibited slightly lower rates of positivity in liquid and solid culture; however, this could be attributed to the study design (i.e. the individual specimens in each sample pair had potentially different quantities of *M. tuberculosis*).