## Acronym
PredictTB

## Full Title
Using Biomarkers to Predict TB Treatment Duration


## Funding
In total, the Predict-TB project will receive over 20 million EUR funding from the EDCTP, the Bill & Melinda Gates Foundation through the Foundation for the National Institutes of Health, the National Institutes of Health, Grand Challenges China, the NIH's International Collaborations in Infectious Disease Research (ICIDR) Program in collaboration with the Consortium for TB Biomarkers and the Regional Prospective Observational Research in Tuberculosis in the Republic of South Africa (RePORT South Africa).



## Abstract
Shortening of tuberculosis (TB) treatment to 16 weeks or shorter is a main priority of TB research to decrease cost, improve treatment adherence and decrease development of drug resistance.

Previous studies of treatment shortening, usually to 4 months, have all been unsuccessful when compared to standard 6-month treatment. Six-month courses cure 95% of patients and shorter courses only 80-85% of patients. This still means, however, that most patients are cured after 4 months - but we cannot currently know beforehand which patients belong to that group. If it were possible to identify the patients who only require 4-month therapy, we would be able to reduce treatment duration in the vast majority of patients, even with present drugs. Current biomarkers to predict treatment outcome are insufficient but important clues have emerged from previous studies that point towards extent of disease and bacterial burden as important contributors to poor treatment outcome. We have developed new early treatment stopping criteria that include PET/CT and GeneXpert cycle threshold.

**Hypothesis:** A combination of microbiological and radiographic biomarkers will identify TB patients who are cured with 16 weeks of conventional therapy.

**Primary Objective**
To demonstrate that the 72-week (18-month) treatment success rate of standard treatment stopped early at week 16 is not inferior to treatment stopped at week 24, in subjects classified as low risk by PET/CT and bacterial load markers.

**Secondary Objectives**
1) To evaluate the association of demographic, radiographic, bacterial load, microbiologic, and immunologic markers for predicting poor treatment outcome in the following cohorts:
- Pooling high and low risk arms receiving the same duration of therapy, to evaluate the risk criteria.
- Between low risk arms with shortened and standard treatment to evaluate any covariates, which predict greater rates of poor outcomes under treatment shortening.

2) To store biological samples for future biomarker research.

3) Develop a point-of-care lateral flow device to measure immunological markers as additional or replacement stopping criteria.

This is a prospective, randomized, noninferiority phase 2b clinical trial of approximately 620 pulmonary drug sensitive TB subjects (420 in South Africa and 200 in China). Participants will receive HRZE for 8 weeks, followed by discontinuation of PZA and ethambutol. Those who meet early treatment completion criteria will be randomized at Week 16 either to continue therapy for the standard duration or to complete early at week 16, whereas failure to meet early completion criteria will continue on the standard regimen. All subjects will be followed until 72 weeks with the primary endpoint evaluated at 18 months.

**Duration of the PredictTB project**
01/12/2016 - 31/01/2022


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## Project Website

www.predict-tb.com