# Protocol Synbiotics Postbiotics Mdr Tb

# Protocol: Synbiotics and Postbiotics in Multidrug-Resistant Tuberculosis (MDR-TB) Treatment  
  
\*\*Systematic Review Title:\*\* Do Synbiotics and Postbiotics Improve Treatment Outcomes in Multidrug-Resistant Tuberculosis Beyond Standard Care?: A Systematic Review and Meta-Analysis  
  
\*\*Registration:\*\* To be registered on PROSPERO  
\*\*Authors:\*\* AI Research Automation System v2.5  
\*\*Date:\*\* September 25, 2025  
  
## Background and Rationale  
  
Multidrug-resistant tuberculosis (MDR-TB) poses significant global health challenges with limited treatment options and high mortality rates. Standard MDR-TB regimens are lengthy (18-24 months), expensive, and associated with substantial adverse effects, complicating adherence and outcomes.  
  
Gut microbiota modulation through synbiotics (combinations of probiotics and prebiotics) and postbiotics (metabolites or components from probiotic fermentation) represents a novel therapeutic approach. Emerging evidence suggests these microbial interventions could enhance treatment efficacy by improving immune response, reducing inflammation, mitigating adverse drug effects, and potentially reducing mycobacterial burden.  
  
Current studies examining synbiotics/postbiotics in TB are limited and inconclusive. This systematic review aims to synthesize evidence on their impact on MDR-TB treatment outcomes to guide clinical practice and inform future research directions.  
  
## Research Questions  
  
\*\*Primary Question:\*\*  
Do synbiotics or postbiotics improve treatment outcomes in multidrug-resistant tuberculosis when added to standard care compared to standard care alone?  
  
\*\*Secondary Questions:\*\*  
1. What are the effects on treatment success rates and time to culture conversion?  
2. How do synbiotics/postbiotics influence adverse event profiles of MDR-TB treatment?  
3. What implications exist for specific bacterial strains or patient subgroups?  
4. What is the microbiologic rationale for observed clinical effects?  
  
## Methods  
  
### Eligibility Criteria  
  
#### Population  
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