

IS6110 → *phoP*

*fadD26*

*phoP*



An additional IS6110 insertion causes overexpression of the *phoP* virulence gene in the MDR/XDR *M. bovis* B strain, which is unusually transmitted between humans,

PDIM is synthesized by a virulence gene cluster essential for the pathogenicity of *M. tuberculosis*

Inactivation of *phoP* in a human clinical isolate of *M. tuberculosis* results in lower virulence in BALB/c mice

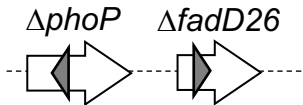
MTBVAC is as safe as BCG in the SCID mouse infection model

MTBVAC confers better protective efficacy than BCG in newborn mice challenged with *M. tuberculosis*

Revaccination of guinea pigs with MTBVAC improves BCG protection

MTBVAC is safer than BCG in the SCID mouse model. MTBVAC protects C3H/HeNRj mice against TB lineages 2, 3 and 4 better than BCG

MTBVAC vaccination confers better protection than BCG in rhesus macaques exposed to an aerosol challenge with *M. tuberculosis*



MTBVAC final construction

1997 1999 2000

2008

2013

2016 2017

2020 2021

Preclinical development and vaccine characterization



Preclinical studies in independent laboratories



Industrial development

BIOFABRI ZENDAL

2008 Pilot scale

2012 Large scale

2019 Industrial scale

Clinical development

BIOFABRI



2012

2015

2019

2021



Centre Hospitalier Universitaire Vaudois

Phase 1



SOUTH AFRICAN TUBERCULOSIS VACCINE INITIATIVE

Phase 1B



SOUTH AFRICAN TUBERCULOSIS VACCINE INITIATIVE

Phase 2A



Phase 3

