

Supporting Information

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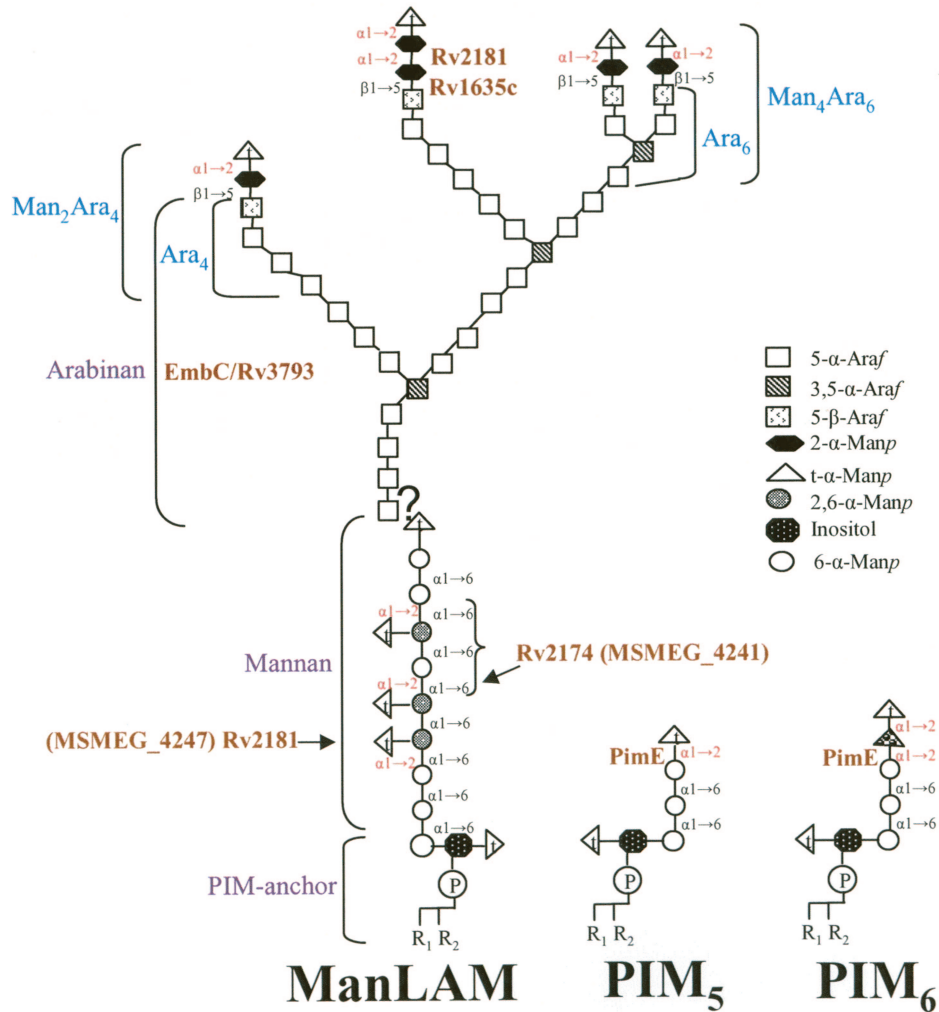


Fig. S1. Schematic structure of ManLAM, PIM₅ and PIM₆. A representation of the structure of ManLAM shows the mannose-capped nonreducing termini, the mannan core, and the phosphatidylinositolmannoside anchor. Although LAM could have a few arabinan chains (not confirmed with data), only 1 chain is shown for simplicity, and not all arabinan termini are capped. The mannan core is characterized by an $\alpha(1\rightarrow6)$ -linked mannan, substituted at C2 by $\alpha(1\rightarrow2)$ Manp residues. ManLAM is characterized by mono-, di, and tri-Manp caps. PIM₅ and PIM₆ contain $\alpha(1\rightarrow2)$ Manp residues and mono- and di- Manp cap like structures, respectively.

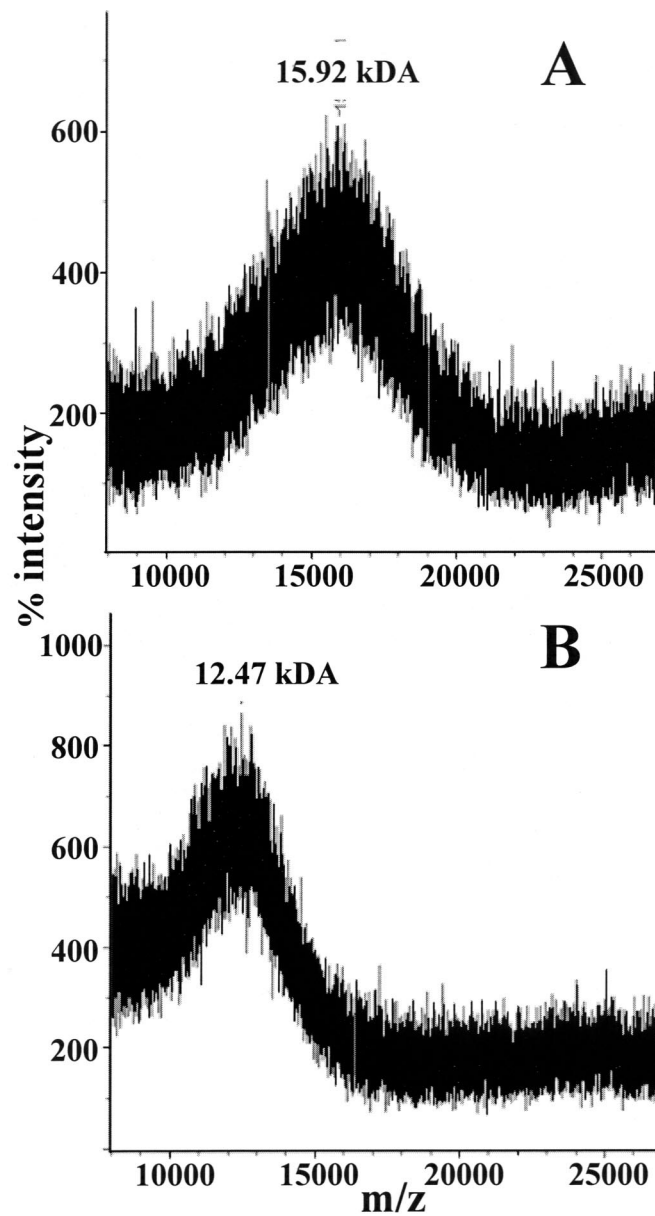


Fig. S2. MALDI-TOF/MS analysis of purified ManLAM from *M. tuberculosis* H37Rv and H37Rv Δ Rv2181. Shown is negative mode MS analysis of WT ManLAM (A) and mutant ManLAM (B).

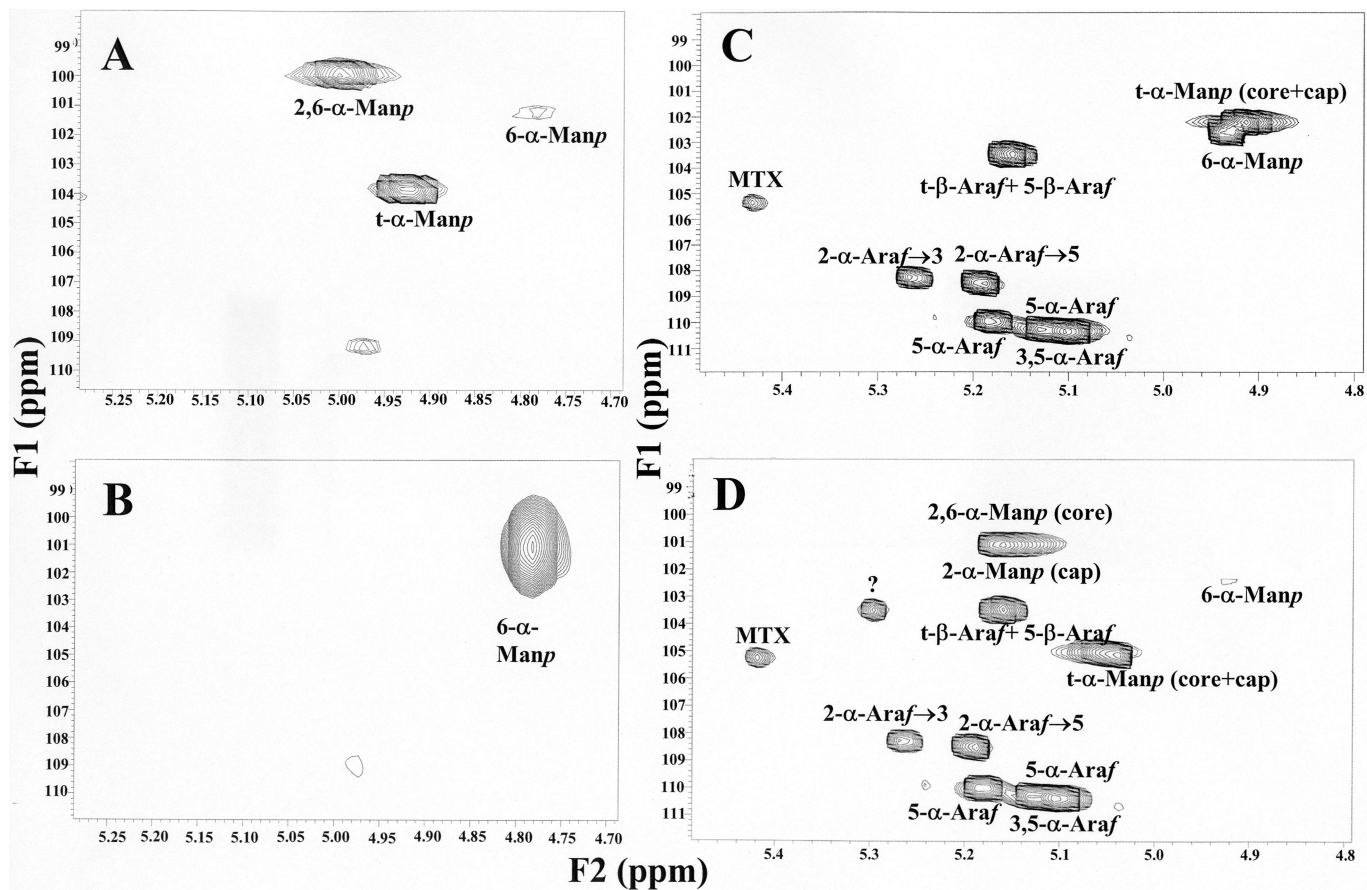


Fig. S3. Comparative partial two-dimensional NMR spectra of LM and ManLAM variants. The NMR ^1H ^{13}C spectra of LM isolated from *M. tuberculosis* H37Rv (A) and H37Rv Δ Rv2181 (B) were acquired in D_2O . (C and D) Two-dimensional ^1H ^{13}C HSQC spectra of purified ManLAM from H37Rv Δ Rv2181 (C) and *M. tuberculosis* (D). Only the expanded anomeric regions are shown. The peaks annotated with a question mark have not been assigned. MTX indicates a cross-peak characteristic of 5-deoxy-5-methyl-5-thio- α -xylofuranose.

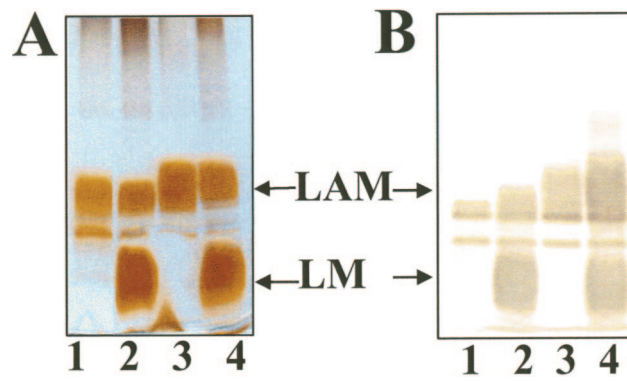


Fig. S4. Analysis of LM/LAM from *M. smegmatis* Δ MSMEG_4247/pVV16 (lanes 1), Δ MSMEG_4247/pVV-Rv2181 (lanes 2), MSMEG_4247/pVV-Rv1635c (lanes 3), and MSMEG_4247/pVV-Rv2181-Rv1635c (lanes 4). LM/LAM was extracted from cells of recombinant strains by the phenol procedure, separated on a 10–20% Tricine gel, and visualized by PAS staining (A) and Western blot with lectin Con A (B).