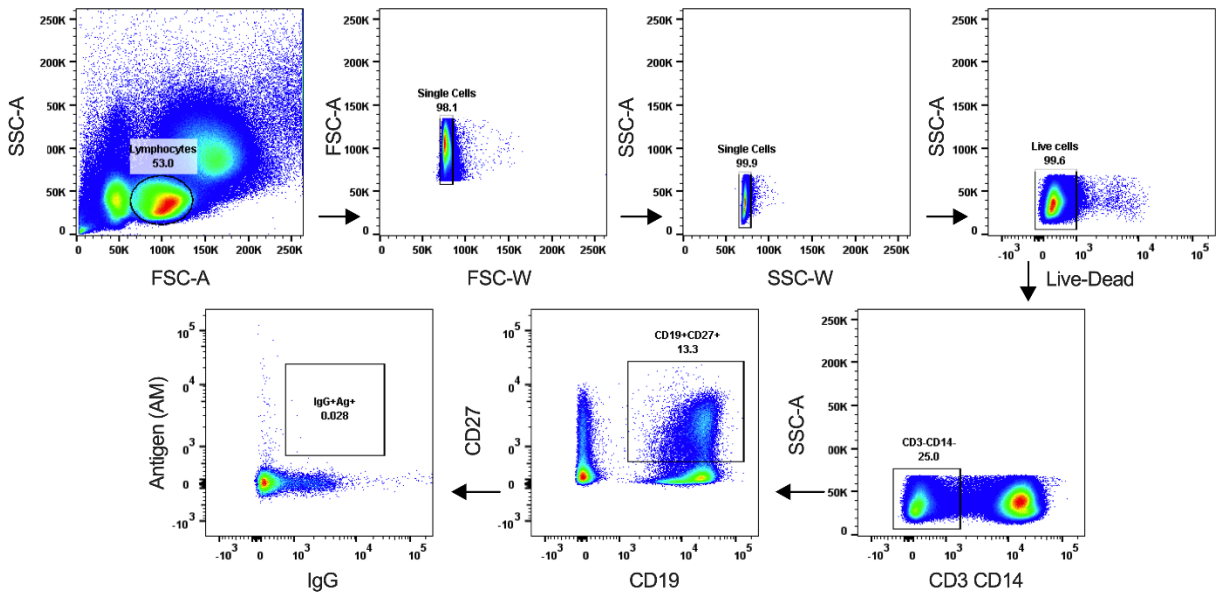


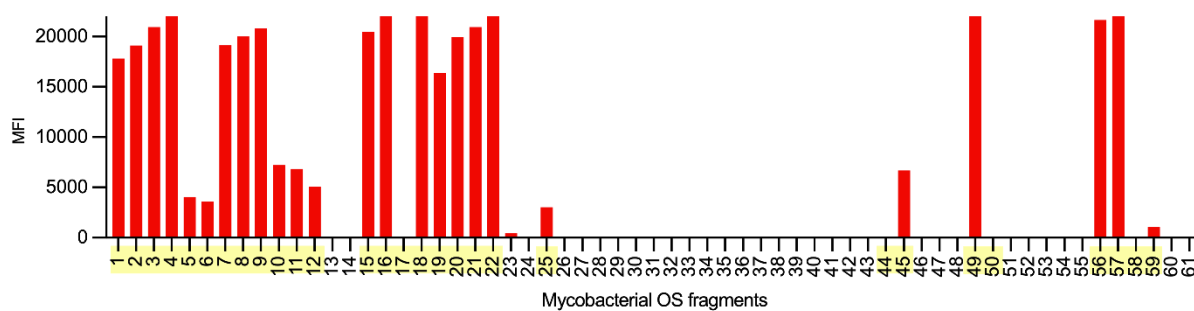
Supplemental Materials:

Supplemental Table 1. Relative binding of different mouse IgG subclasses to FcγRs. Adapted from (41, 42).

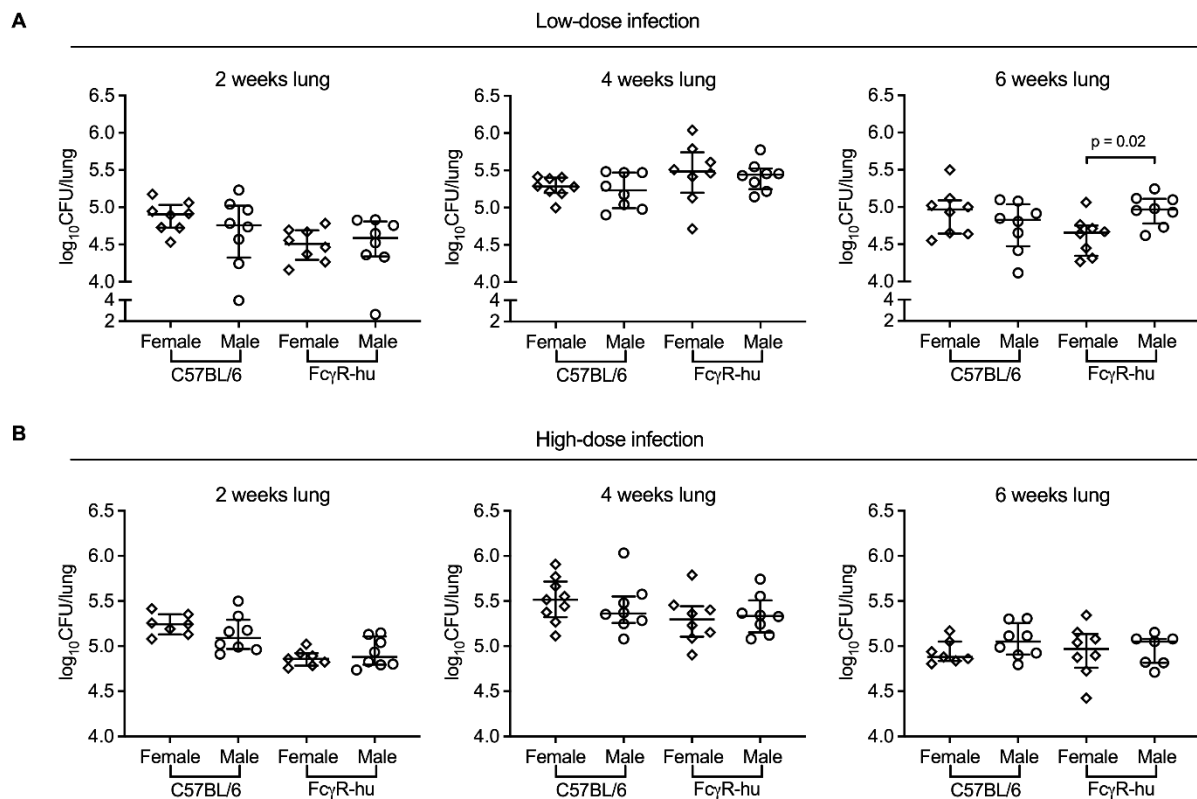
Binding of mouse IgG subclasses to FcγR					
Subclass	Activating FcγRI	Inhibitory FcγRIIb	Activating FcγRII	Activating FcγRIV	A/I Ratio
IgG1	-	++	++	-	0.1 (III/IIb)
IgG1 D265A	-	-	-	-	
IgG2a	++++	+	+	+++	69 (IV/IIb)



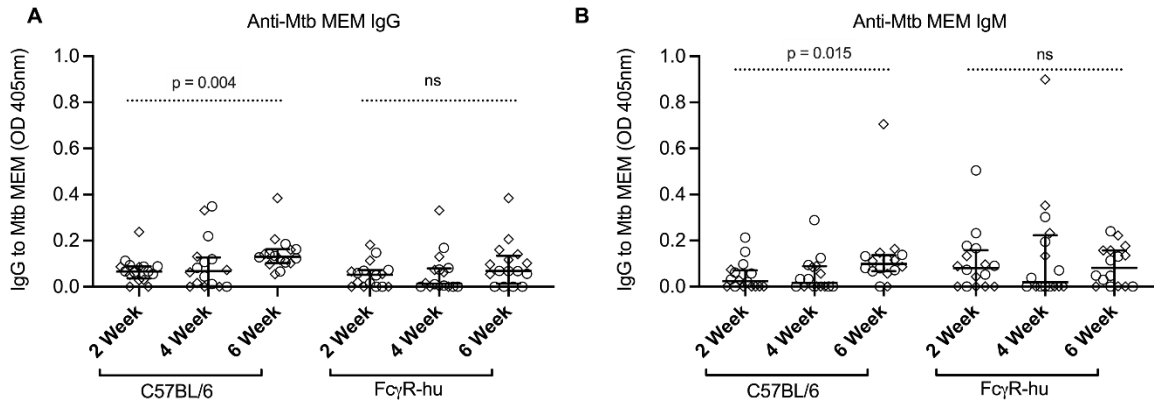
Supplemental Figure 1. Sorting strategy of AM-specific human B cells. Gating of CD3-CD14- CD19+CD27+IgG+AM+ B cells from PBMCs of subject P1 by fluorescence activated cell sorting.



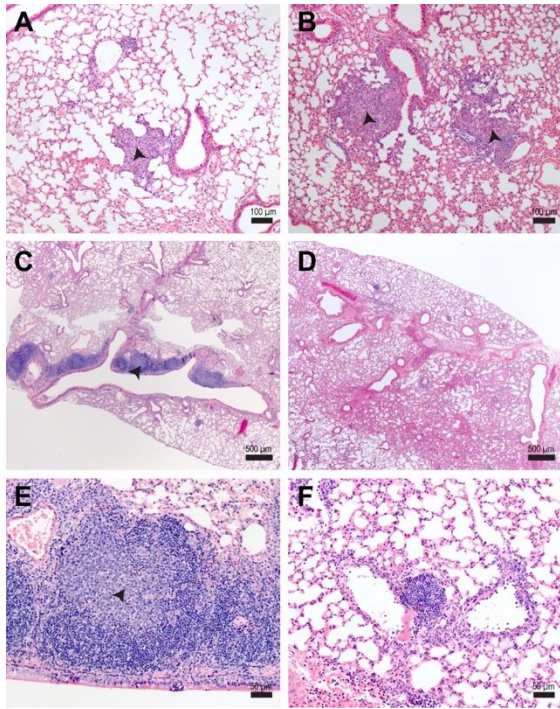
Supplemental Figure 2. P1AM25 reacts strongly to OS motifs within AM/LAM but not other major mycobacterial glycans. Median fluorescent intensity (MFI) of P1AM25 (5 $\mu\text{g/mL}$) to 61 synthetic mycobacterial oligosaccharide (OS) motifs. Reactivity is shown for OS fragments with numbers corresponding to position on glycan array ((30); α -glucan [OS#13, 14, 24, 46, 48, 52], LOS [OS#38, 39, 54, 55], PGLs [OS#26-37, 40-43, S51, 53], PIMs [OS#23] and GPLs [OS#47, 60, 61]. AM/LAM specific fragments are highlighted in yellow.



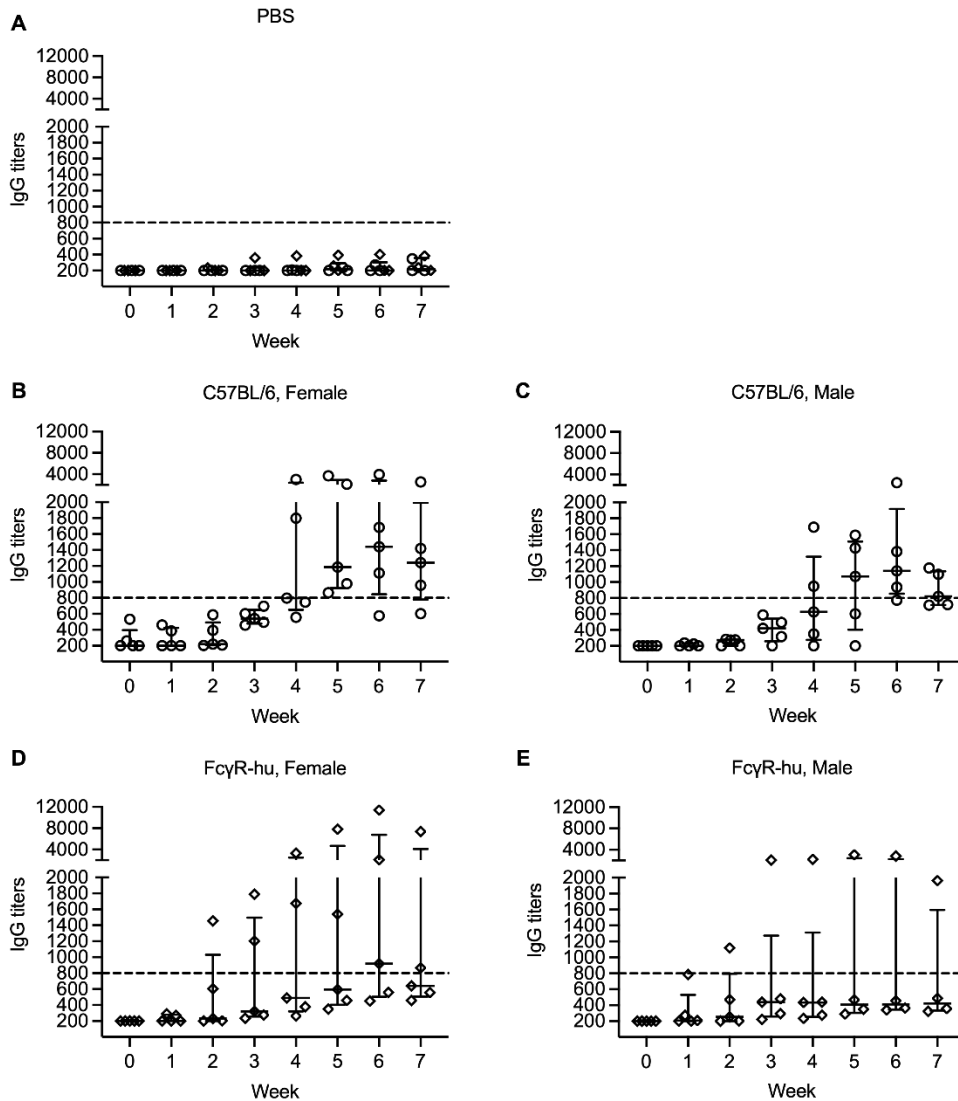
Supplemental Figure 3. Similar lung bacterial burden between female and male C57BL/6 and Fc γ R-hu mice post *Mtb* infection. Lung bacterial burden categorized by sex at two, four and six weeks after low-dose (78 CFU) **(A)** or high-dose (300 CFU) **(B)** *Mtb* (Erdman) infection. Lines and error bars represent medians with IQRs. Data set is same as shown in Fig. 6 but stratified by sex. Diamonds represent female mice; circles represent male mice. Mann-Whitney-U test.



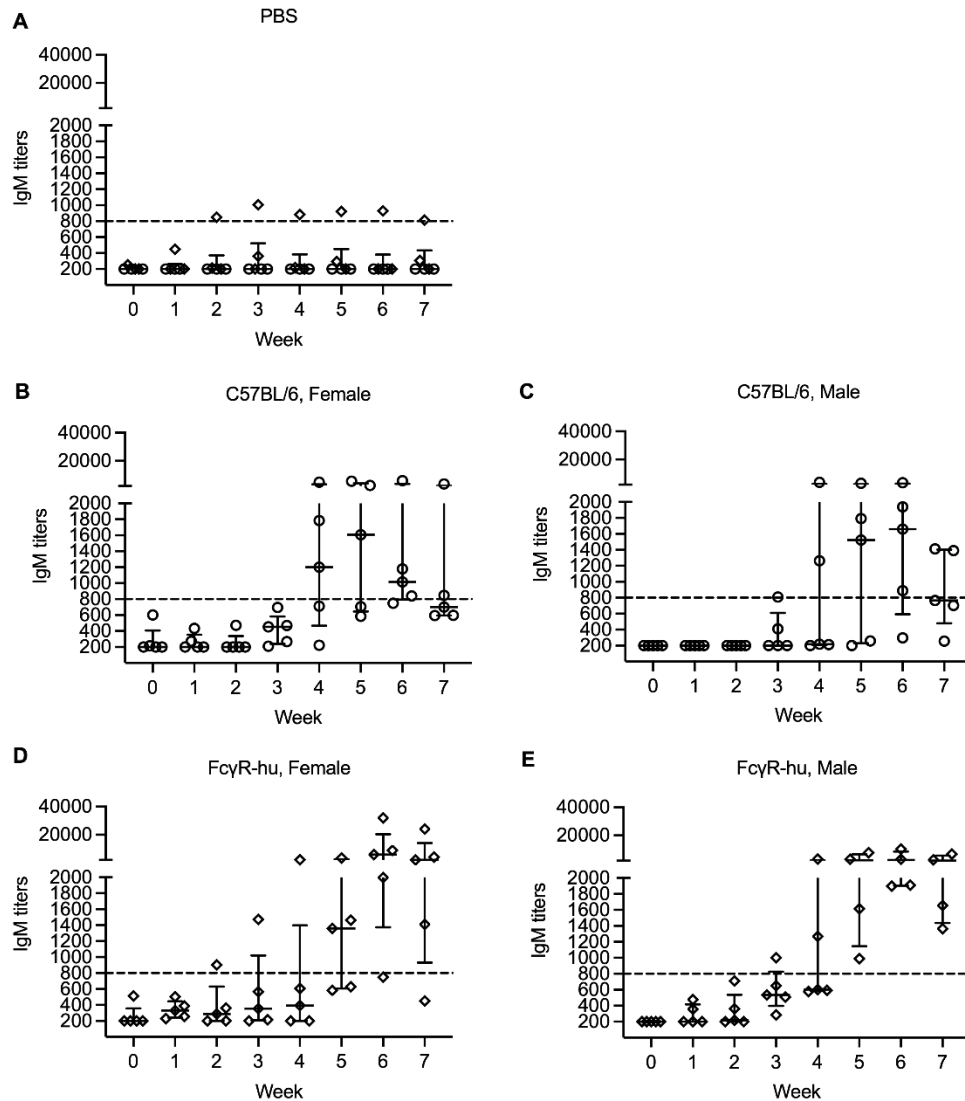
Supplemental Figure 4. Antibody responses to *Mtb* antigens are modest after *Mtb* infection in both C57BL/6 and FcγR-hu mice. IgG (**A**) and IgM (**B**) responses to *Mtb* membrane fractions (MEM) antibody in C57BL/6 and FcγR-hu mice at 2, 4, and 6 weeks post-*Mtb* infection (Erdman; mean lung CFU 300 ± 40 one day post-infection). OD405 values were subtracted by pre-infection values for each individual mouse. Lines and error bars represent medians with IQRs. Kruskal-Wallis test. Diamonds represent female mice; circles represent male mice. ns: not significant.



Supplemental Figure 5. Granulomatous reaction in the lungs of FcγR-hu and wild-type C57BL/6 mice two weeks after *Mtb* infection. Panels show sections of formalin-fixed, paraffin-embedded and H&E-stained lung tissues (5 μm) of mice two weeks post aerosolized infection with 300 CFU *Mtb* Erdman. Lung granulomatous reaction of FcγR-hu (A) and WT (B) mice, showing infiltration of immune cells consisting of macrophages, neutrophils, and lymphocytes (100x magnification). Aggregates are more robustly formed in the WT compared to FcγR-hu mice (denoted by dark arrow heads in B compared to A). The granulomatous reaction of the FcγR-hu mice also exhibits perivascular/peribronchiolar lymphocytic infiltrates containing cellular aggregates (devoid of macrophages or neutrophils) with features of germinal center (C; 25x magnification; E, 200x magnification); note the pale-staining region (dark arrow heads) of the cellular aggregates typical of proliferating B cells in a germinal center. Such germinal center-like aggregates were absent in the WT animals (D, 25x magnification; F, 200x magnification). Tissues of 5 mice (males and females) were examined for each group with 3 sections examined per mouse.



Supplemental Figure 6. Development of murine anti-human IgG after 4-5 weeks of passive human IgG transfer. Panels show anti-human IgG titers for **(A)** control group of female and male *Mtb*-infected C57BL/6 (n=3) and FcγR-hu mice (n=3) injected with PBS weekly, **(B)** female C57BL/6 (n=5), **(C)** male C57BL/6 (n=5), **(D)** female FcγR-hu (n=5), and **(E)** male FcγR-hu (n=5) *Mtb*-infected mice (150 CFU, Erdman) after weekly i.p. injections of 200 μg human IgG. Sera for week 0 was obtained before *Mtb* infection and first dose of human IgG or PBS. The dotted line shows two-fold titer increase from baseline, considered as the cutoff for seroconversion. Lines and error bars represent medians with IQRs.



Supplemental Figure 7. Development of murine anti-human IgM after 4-5 weeks of passive human IgG transfer. Panels show anti-human IgM titers for **(A)** control group of female and male *Mtb*-infected C57BL/6 (n=3) and FcγR-hu mice (n=3) injected with PBS weekly, **(B)** female C57BL/6 (n=5), **(C)** male C57BL/6 (n=5), **(D)** female FcγR-hu (n=5), and **(E)** male FcγR-hu (n=5) *Mtb*-infected mice (150 CFU, Erdman) after weekly i.p. injections of 200 μg human IgG. Sera for week 0 was obtained before *Mtb* infection and first dose of human IgG at pre-injection (week 0) and weekly starting week 1. The dotted line shows a two-fold titer increase from baseline, considered as the cutoff for seroconversion. Lines and error bars represent medians with IQRs.