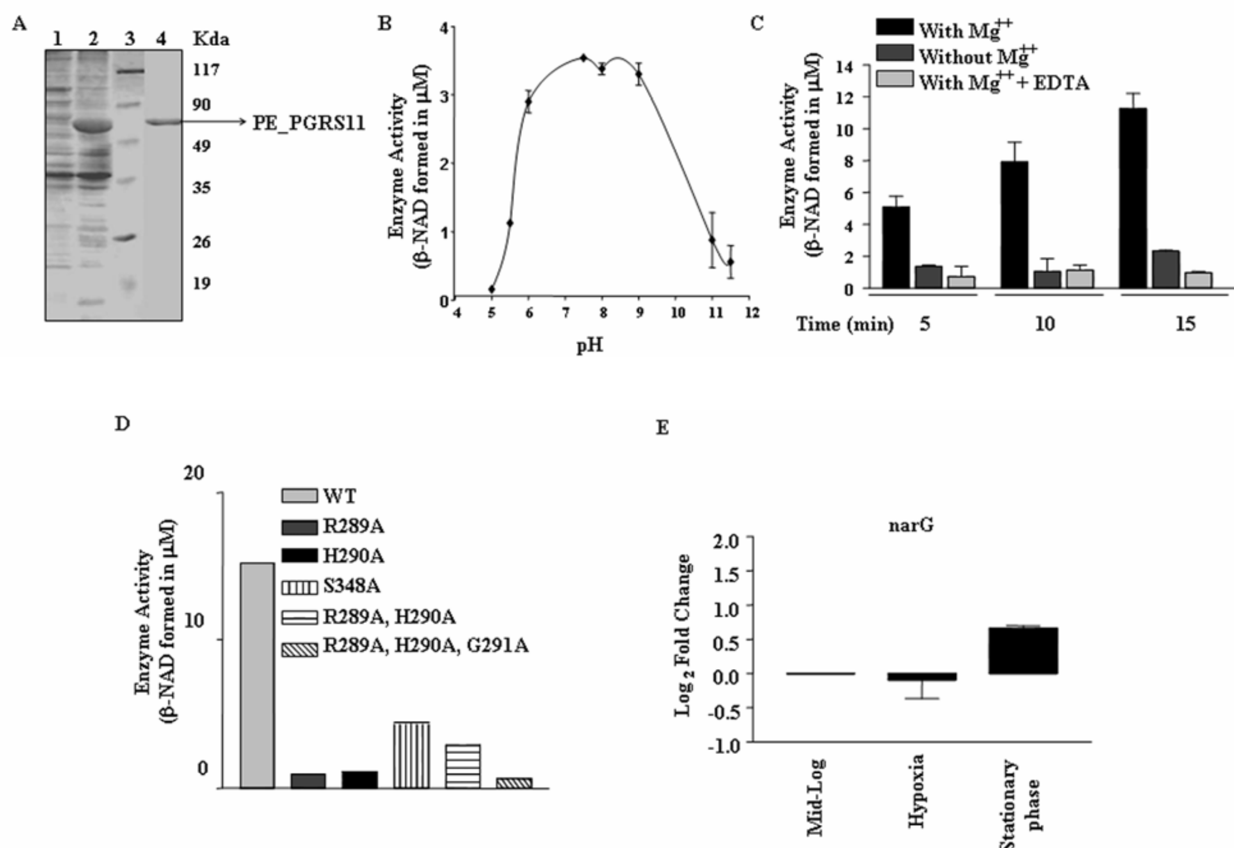
Supplementary Figure S1

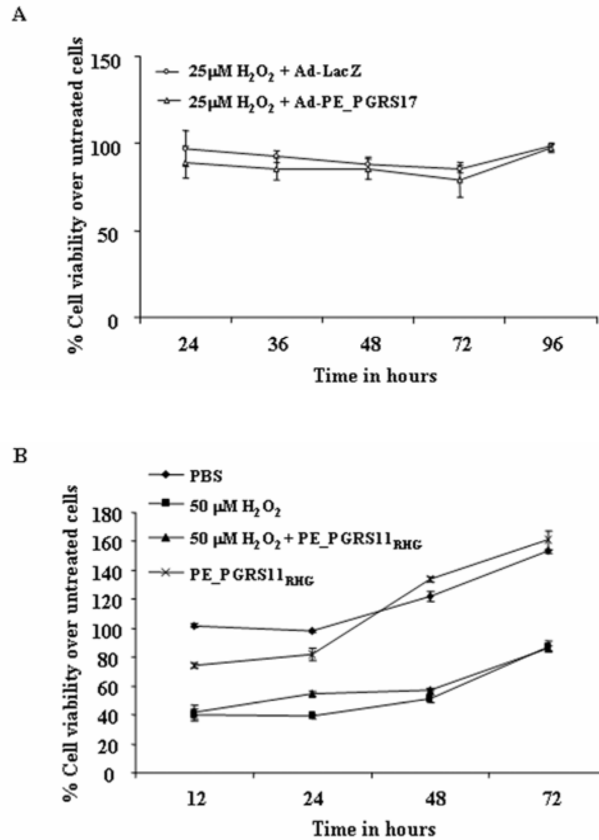
Plasmid generated	**Residues mutated**	**Oligos used for mutagenesis (Forward and Reverse primers)**
pRSETA-PE_PGRS11$_{RHG}$	R289A, H290A, G291A	Forward 5’CATCGACTTCGTGGCGGCCGCCCAGACG 3’
		Reverse 5’GCAAGTTCGCCAACGGCGCGG 3’
pRSETA-PE_PGRS11$_{RH}$	R289A, H290A	Forward 5’CGTGGCGGCCGGCCAGACGCCGGG 3’
		Reverse 5’GCAAGTTCGCCAACGGCGCGG 3’
pRSETA-PE_PGRS11$_{R}$	R289A	Forward 5’CTTCGTGGCGCACGGCCAGACGCC 3’
		Reverse 5’GCAAGTTCGCCAACGGCGCGG 3’
pRSETA-PE_PGRS11$_{H}$	H290A	Forward 5’CGTGCGGGCCGGCCAGACGCCGGG 3’
		Reverse 5’GCAAGTTCGCCAACGGCGCGG 3’
pRSETA-PE_PGRS11$_{S}$	S348A	Forward 5’T CGACGCGCAGTTGATCAGAACG 3’
		Reverse 5’GTCCAGGCGATCGGGCCG 3’

Supplementary Figure S1. The primer pairs used to mutate specific active site residues in Phosphoglycerate mutase domain of PE_PGRS11.

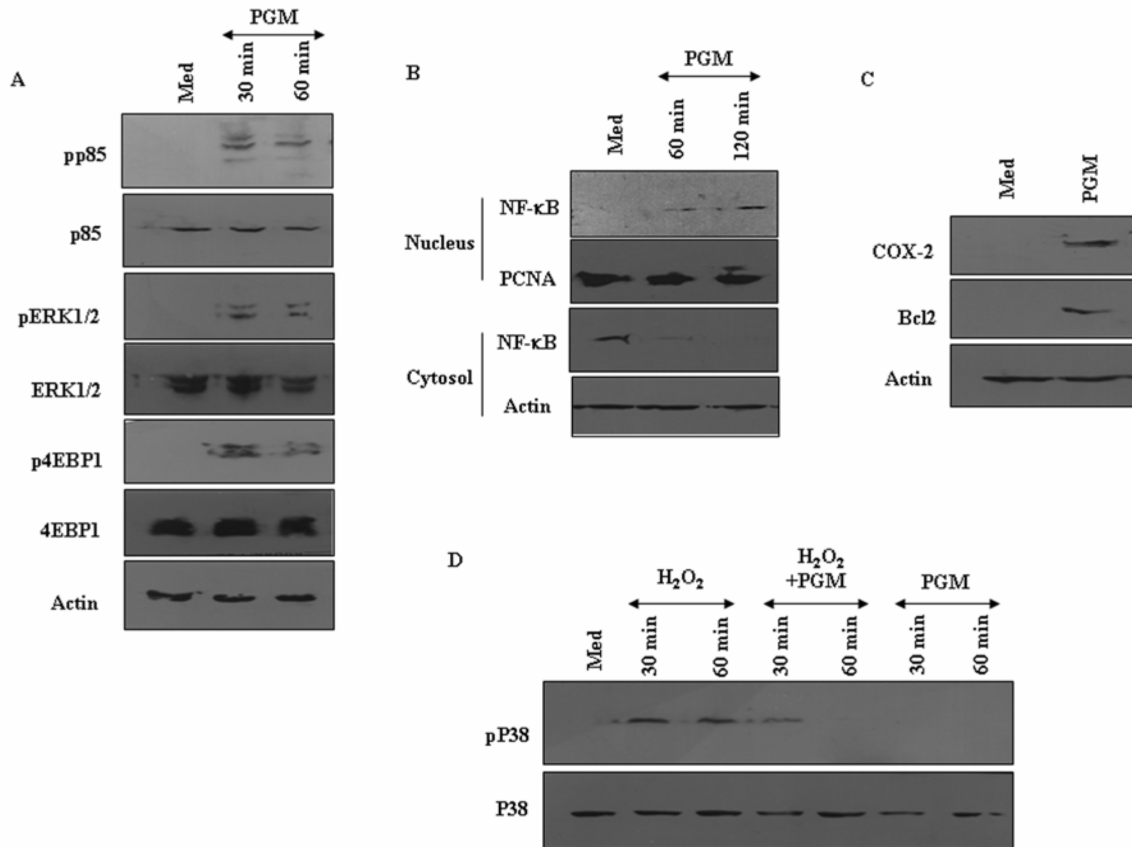


Supplementary Figure S2. Analysis of kinetic parameter associated with Phosphoglycerate mutase enzyme activity of PE_PGRS11. *A*. The SDS-PAGE gel representing the expression and purification of PE_PGRS11. Lane 1, uninduced *E. coli*; lane 2, induced *E. coli*; lane 3, protein marker; lane 4, eluted PE_PGRS11 protein. *B*. The graph representing pH optimum for Phosphoglycerate mutase enzyme activity of PE_PGRS11. Enzyme activity was measured in pH range of 6–11 in different buffers (pH 6.0–7.0, imidazole buffer; pH 8.0–9.0, Tris–HCl buffer; pH 10.0–11.0, Sodium acetate buffer) using 1 μg purified PE_PGRS11 protein in the reaction mix at 25° C. *C*. Effect of Mg^{++} on Phosphoglycerate mutase enzyme activity. Enzymatic reactions were carried out in presence or absence of Mg^{++} (essential co-ion required for Phosphoglycerate mutase activity of PE_PGRS11) for indicated time points. The importance of Mg^{++} was further established by using EDTA as a chelating agent in 1:1 ratio to chelate out Mg^{++}. *D*. Active site mutants of PE_PGRS11 's Phosphoglycerate mutase domain (R289A; H290A; S348A; R289A, H290A; R289A, H290A, G291A) exhibited significant reduction in the catalytic properties of the protein. *E* .Expression analysis of narG transcripts in the RNA isolated from *M. tuberculosis* grown under indicated growth conditions. The results are representative of three independent experiments. WT, *Wild type*

Supplementary Figure S3

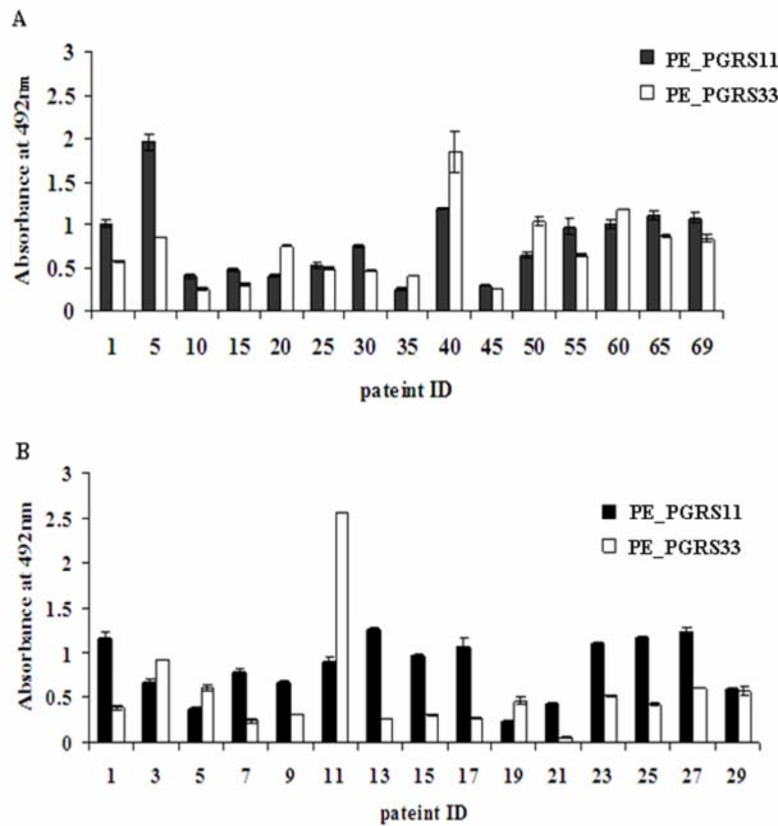


Supplementary Figure S3. Specificity and role of Phosphoglycerate mutase domain of PE_PGRS11 in protection of alveolar epithelial A549 cells against oxidative stress. *A*. PE_PGRS17 does not protect lung epithelial cells against oxidative stress. Cell viability of A549 cells infected with Ad-PE_PGRS17 or Ad-LacZ upon oxidative stress (25µM H_2O_2) as determined by MTT assay. *B.* Percentage cell viability for A549 cells under oxidative stress (50µM H_2O_2) upon treatment with triple mutant R289A, H290A, G291A of PE_PGRS11 (PE_PGRS_{RHG}). The data represent two independent experiments.



Supplementary Figure S4. Phosphoglycerate mutase (PGM) domain of PE_PGRS11 regulates apoptotic and anti-apoptotic signaling axis in alveolar epithelial A549 cells. *A*. Phosphoglycerate mutase (PGM) domain triggers activation of p85 (PI3K), ERK1/2 and 4EBP1. *B*. Phosphoglycerate mutase (PGM) domain induced nuclear translocation of NF-κB. *C*. Induced expression of COX-2 and Bcl2 by Phosphoglycerate mutase (PGM) domain. *D*. Phosphoglycerate mutase (PGM) domain inhibits H_2O_2 triggered activation of p38 MAPK. The blots are representative of two independent experiments.

Supplementary Figure S5



Supplementary Figure S5. Individual pulmonary tuberculosis patients demonstrate differential antibody responses to PE_PGRS11 and PE_PGRS33. *A & B*. Differential humoral antibody responses to PE_PGRS11 and PE_PGRS33 from sera of selected *(A)* adult and *(B)* child pulmonary tuberculosis patients (group 1).