	4hr	8hr	12hr	24hr	48hr	72hr
ctrl	5	5	5	5	5	5
LPS treated	5	4	3	2	1	1
TempL wild (1mg/kg)	5	5	5	5	5	5
Q3K,TempL (0.25mg/kg)	5	5	5	5	5	5
TempL wild (0.25mg/Kg)	5	5	3	2	2	2
Polymyxin B	5	5	5	5	5	5
TempL wild (1mg/kg)+No LPS	5	5	5	5	5	5
Q3K,TempL (0.25mg/kg)+No LPS	5	5	5	5	5	5

Table S1

Detailed data of survival of mice after peptide and LPS treatments:

(Mean values are presented)

	Hemolytic Activity		Anti-inflammatory activity			
	MHC_{50}	Fold[a]	$MIC_{anti-endotoxin}$	Fold[b]	Therapeutic index $MHC_{50}/MIC_{anti-endotoxin}$	Fold[c]
TempL	21.8	1	1	1	21.8	1
Q3K,TempL	18.7	0.857798	0.25	4	74.8	3.4311926

Table-S2

Summary of biological activities of TempL and its analog; determination of therapeutic potential. MHC_{50} represents the minimum concentration (μM) of TempL and Q3K,TempL required to induce 50% lysis of hRBCs; Fold[a] shows the fold improvement in MHC_{50} values of individual peptides with respect to the native peptide. $MIC_{anti-endotoxin}$ represents minimum dose of the peptides (mg/Kg) required to attenuate lethal endotoxemia in LPS treated balb/c mice. Fold[b] shows fold improvement in $MIC_{anti-endotoxin}$ of these peptides in comparison to TempL. Therapeutic index ($MHC_{50}/MIC_{anti-endotoxin}$) denotes ratio of hemolytic (MHC_{50}) and in vivo anti-LPS activity ($MIC_{anti-endotoxin}$) activities of these peptides. Fold[c] shows the fold improvement in anti-inflammatory therapeutic indexes ($MHC_{50}/ MIC_{anti-endotoxin}$) of the peptides with respect to TempL.

Antibacterial activity of TempL and its analog (MIC values in µM)

Bacteria	TempL	Q3K,TempL
E.coli (ATCC 10536)	10±0.5	5±0.3
Pseudomonas auregenosa (ATCC BAA-427)	25±0.5	12±0.5

Table S3

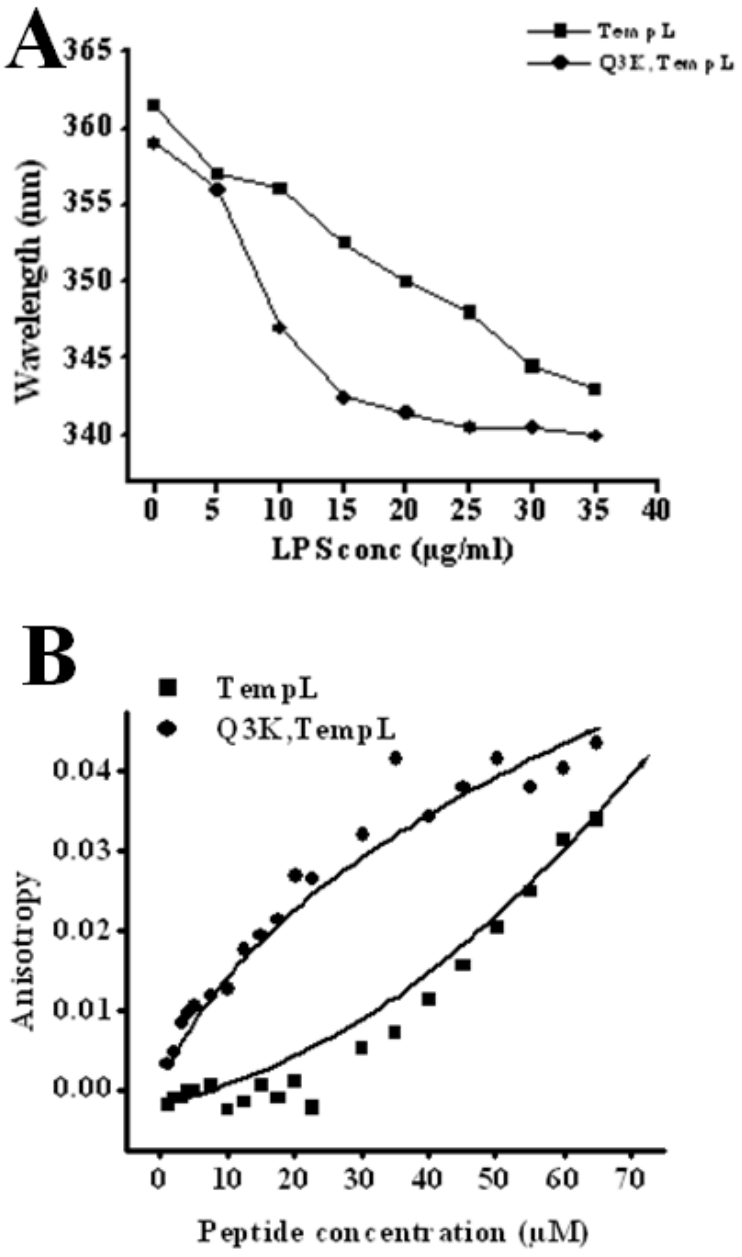

FIG S1

FIG S1 *Panel A* shows the plot of tryptophan emission maxima of TempL (5µM) and Q3K,TempL(5µM) in presence of increasing concentrations of LPS. The shift of emission maxima of Q3K,TempL (—●—) to a shorter wavelength than TempL (—■—) in presence of LPS indicates the localization of the tryptophan residue of the former peptide to a more hydrophobic environment than the

latter peptide in this environment. *Panel B,* Binding of TempL and Q3K,TempL to LPS as monitored by the changes in anisotropy of FITC-LPS fluorescence as a function of increasing peptide concentrations. Symbols: (—■—), TempL; (—●—), Q3K,TempL.

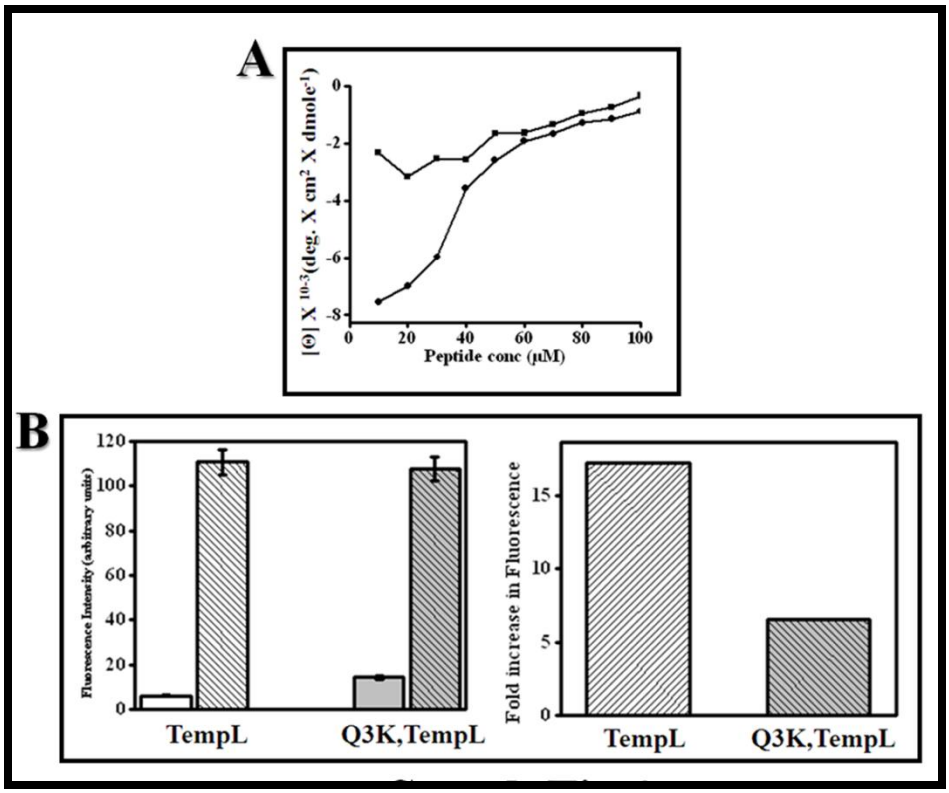

FIG S2

Fig S2 Detection of self aggregation in TempL and Q3K,TempL by recording the concentration-dependent CD and fluorescence experiment. *Panel A* is the plot of corresponding mean residue ellipticity values at 222 nm *versus* peptide concentration in PBS with 1.5 M NaCl. Symbols; —■— ,TempL; —●—,Q3K,TempL. *Panel B* shows the plot of fluorescence of Rho-TempL (0.25μM) and Rho-Q3K,TempL (0.25μM) before and after treatment of Proteinase K (100μg/ml). In *Panel B, Left half,* Symbols: ▭ and ▨ are for Rho-TempL fluorescence before and after proteianse K treatments respectively and ▭ and ▨ stand for Rho-Q3K,TempL fluorescence before and after proteianse K treatments respectively. *Panel B, Right half* depicts the relative fold increment in rhodamine fluorescence of the respective peptide [TempL (▨) and Q3K,TempL (▨)] after Proteinase K treatments.

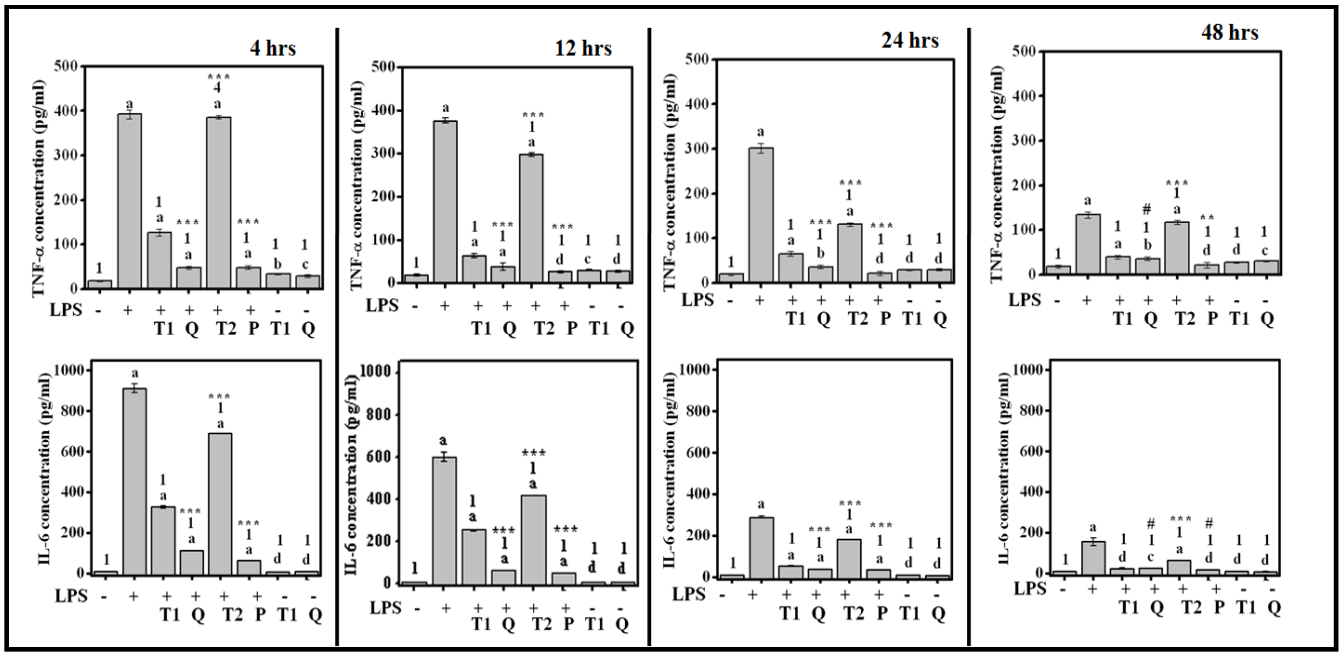

FIG S3

Fig S3 Anti-inflammatory effects of TempL and Q3K,TempL by monitoring the levels of pro-inflammatory cytokines at different time points in the serum of LPS-treated Balb/C mice in the absence and presence of the peptides as described in the concerned part of Materials & Methods with statistical significances. *Upper panels* show the TNF α levels in blood serum of LPS and peptide treated mice at 4, 12, 24 and 48 hours. *Lower panels* show the IL-6 concentration in blood serum of LPS and peptide treated mice at 4, 12, 24 and 48 hours. Results are presented as mean ± SD, n=3, P values are indicated as *** P < 0.001, **P < 0.01, * P < 0.05, and # P > 0.05 vs TempL. (a) P<0.001, (b) <0.01, (c) <0.05 and (d) .0.05 vs untreated mice while (1) P<0.001 (2) <0.01 (3) P<0.05 and (4) >0.05 vs LPS treated mice. + or – symbolize the treatment or no treatment of LPS whereas T1 shows TempL (1mg/kg), Q shows Q3K,TempL (0.25mg/kg), T2 shows TempL (0.25mg/kg) and P shows Polymixin B (1mg/kg) peptide treatments.