

*Supplementary data*

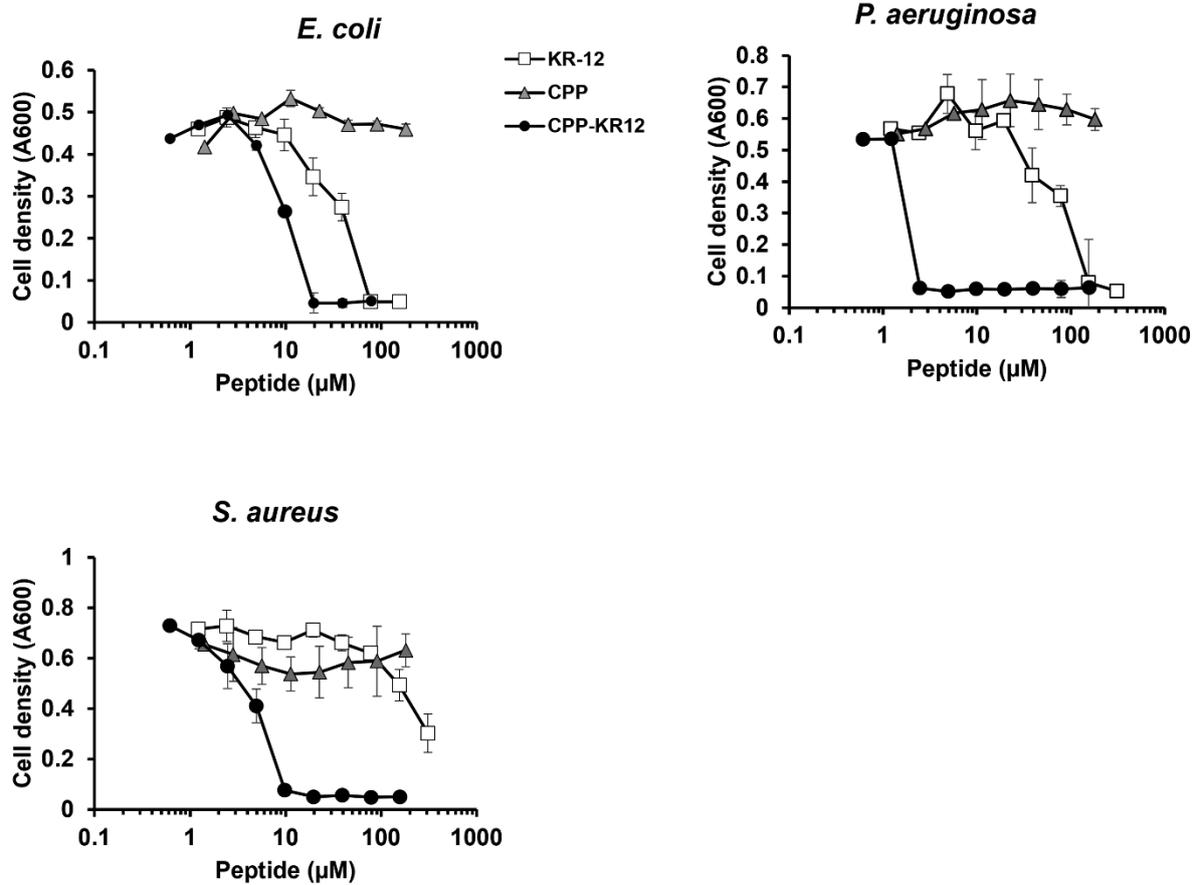
**Self-entrapment of antimicrobial peptides in silica nanoparticles for stable and effective antimicrobial peptide delivery system**

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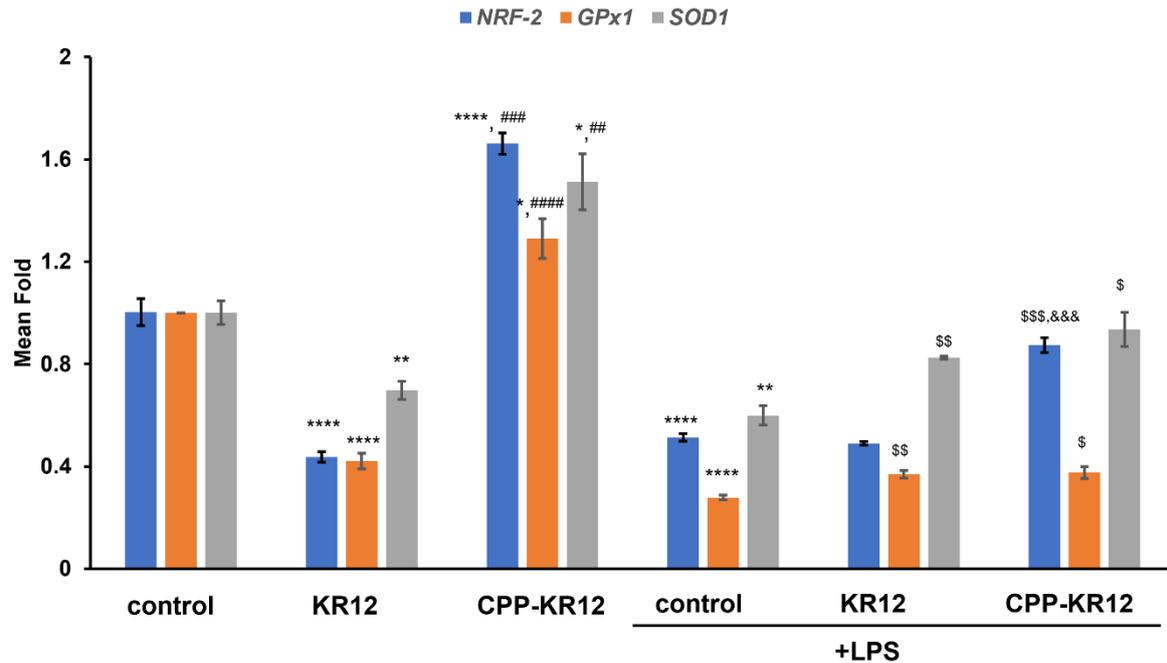
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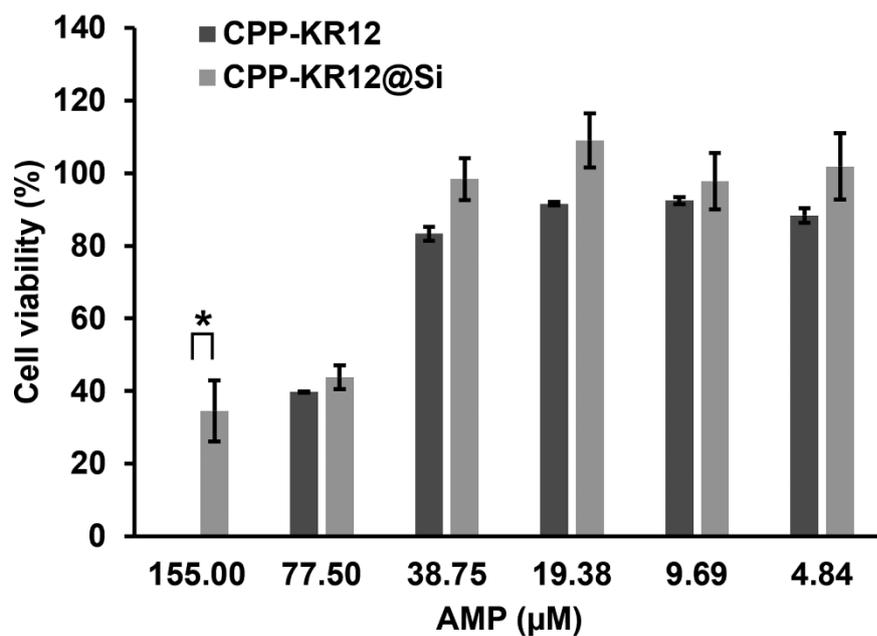


Supplementary Figure S1. Antibacterial activity of indicated peptide depending on concentration



**Supplementary Figure S2.** Anti-oxidant protein expression in response of AMPs in the presence or absence of lipopolysaccharide (LPS) in RAW264.7 cells. The mRNA expression levels of nuclear factor erythroid 2-related factor 2 (NRF-2), glutathione peroxidase 1 (GPx-1) and superoxide dismutase 1 (SOD1) were measured by qRT-PCR. Glyceraldehyde-3-Phosphate-Dehydrogenase (GAPDH) gene was used for normalization in gene expression. Gene levels in each treated cell were calculated relative to those in cells without AMP. Values are presented as mean  $\pm$  SE (N = 3). \* $p$ <0.05, \*\* $p$ <0.01 and \*\*\*\* $p$ <0.0001 vs control and ## $p$ <0.01, ### $p$ <0.001, and #### $p$ <0.0001 vs KR12. \$ $p$ <0.05, \$\$ $p$ <0.01 and \$\$\$ $p$ <0.001 vs control +LPS and &&& $p$ <0.001 vs KR12+LPS

Used primers as follows; NRF-2 (forward: ATGGA CT TGGAGTTGCCACC; reverse: CCTGTTCCTTCTGGAGTTGCT), GPx1 (forward: CTGAATTCCCTCAAGTACGTCC; reverse: GCCCACCAGGA ACTTCTCAAAG), and SOD1 (forward: GTGCGTGCTGAA GGGCGA; reverse: CCACCTTTGCCCAAGTCATC) Glyceraldehyde-3-phosphate dehydrogenase (GAPDH) (forward: CCTGGCCAAGGTCATCCATG; reverse: GCAGGAGACAACCTGGTCCT).



**Supplementary Figure S3.** Comparison of cell viability after 5 days of AMP treatment. The cytotoxicity of AMP was measured 5 days after incubation of Raw 264.7 cells ( $4 \times 10^5$  cells/mL) in the presence of each indicated concentration of AMP. Cell survival was expressed as a percentage of the negative control grown without AMP. Values are presented as mean  $\pm$  SE (N = 3). \* $p < 0.05$  vs corresponding free form of AMP in each concentration.