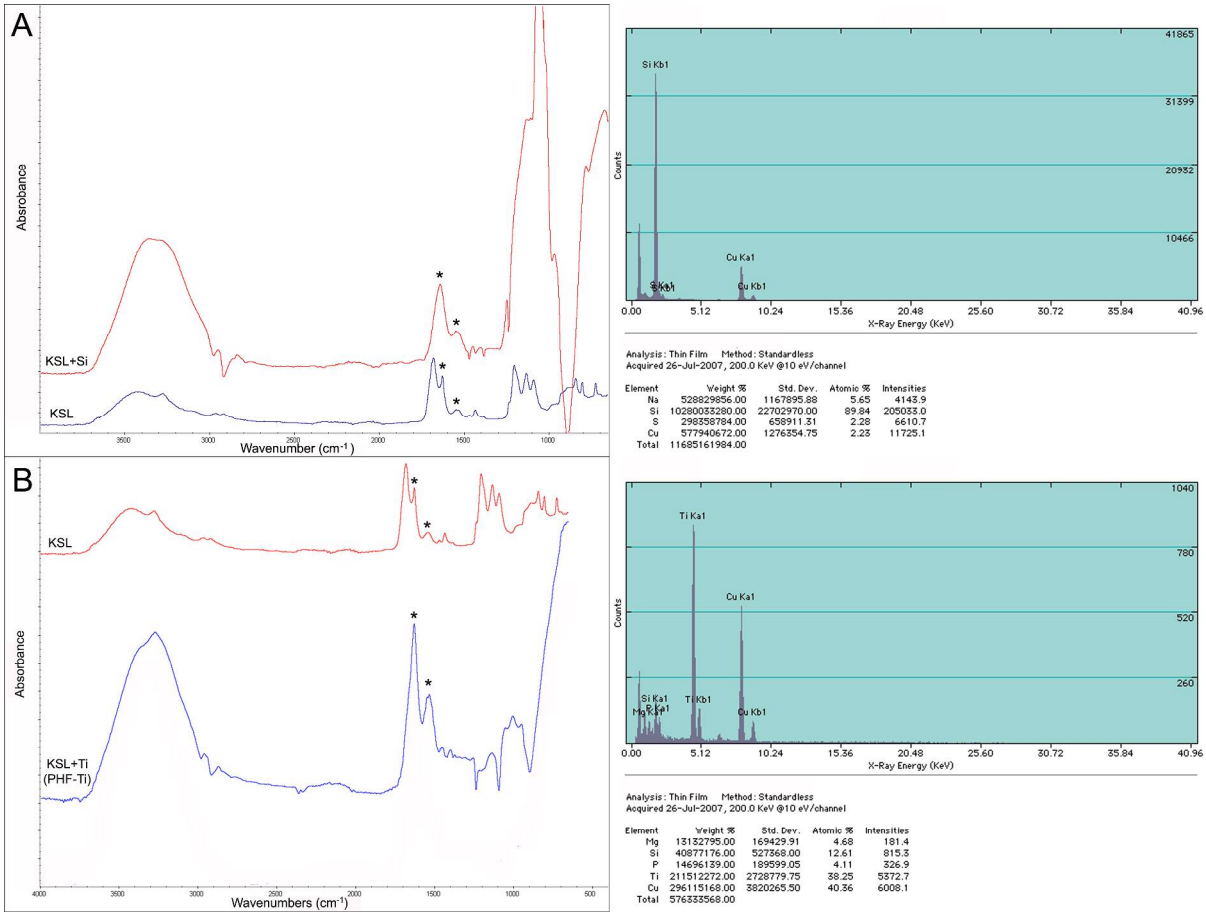

Figure S1. ATR FT-IR and EDS analysis of KSL encapsulated in (A) silica and (B) titania nanoparticles. ATR FT-IR spectrums (left) show the carbonyl stretching and NH bending vibrations of the KSL peptide backbone amide I and II bonds at 1627 cm^{-1} and 1534 cm^{-1}, respectively. EDS analysis (right) confirm presence of elemental Si and Ti in the corresponding nanoparticles.

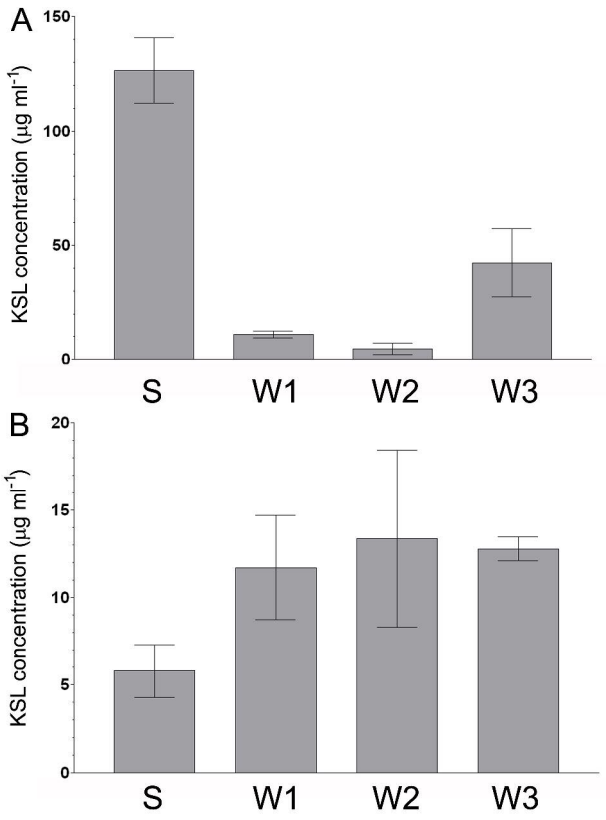

Figure S2. Amount of KSL remaining in Si-ANPs (A) and Ti-ANPs (B) synthesis reaction supernatants (S) and release from nanoparticles during wash steps (W1, W2, W3). Initial concentration of KSL in the synthesis reaction was 4 mg ml^{-1}. Standard deviations were calculated from at least three replicates.

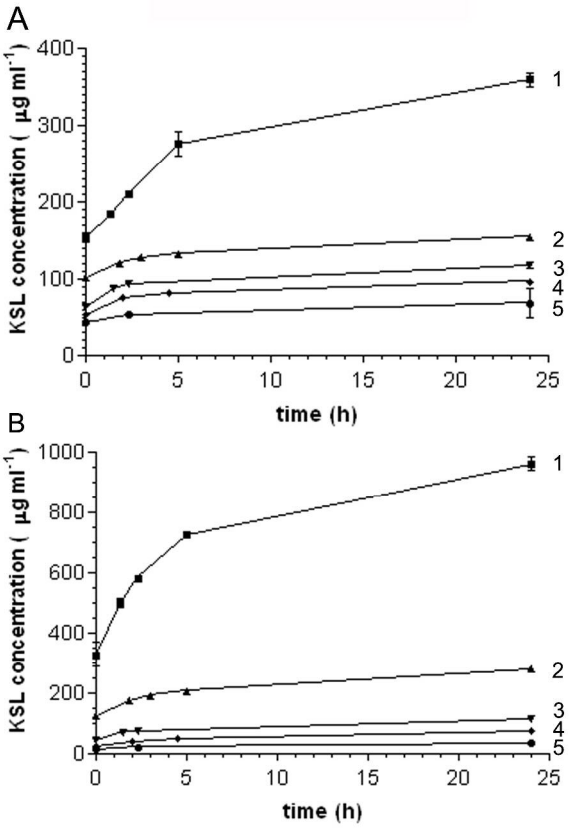

Figure S3. Diffusion rate of antimicrobial peptide from silica nanoparticles. Si-ANPs were incubated in (A) antimicrobial assay media and (B) phosphate-buffered saline for 5 days (each day is listed to the right of the measured KSL concentration). Fresh buffer was exchanged after each 24 h time period by centrifugation and removal of supernatant. Residual peptide in the supernatant at time = 0 for each day is due to some carry-over from the previous buffer and initial peptide release when particles were resuspended in fresh buffer.

Table S1. MIC determination of silica nanoparticles synthesized from a derivative of the R5 peptide and Si-ANPs after 5-day diffusion assay.

Strain	MIC data[a]		
	R5 derivative[b]	**Si-ANPs after diffusion (MH)**[c]	**Si-ANPs after diffusion (PBS)**[c]
E. coli ATCC 25922	>225 (0)[d]	37 (13)	56 (0)
S. aureus ATCC 25923	>225 (0)	>225 (0)	>225 (0)
S. epidermidis ATCC 14990	>225 (0)	>225 (0)	>225 (0)
C. albicans ATCC 10231	>225 (0)	89 (0)	>225 (0)

[a] Minimum inhibitory concentrations were determined as discussed previously[18]. Viable cell concentrations at the start of each assay were approx. 10^5 cells ml^{-1}. Minimum Inhibitory Concentration of KSL in $\mu g\ ml^{-1}$. [b] Either silica or titania nanoparticles synthesized using a derivative of the R5 peptide[35]. [c] Si-ANPs after diffusion assay in either Muller-Hinton broth antimicrobial assay buffer (MH), or phosphate-buffered saline (PBS). See Figure 2 and Figure S3 for details on diffusion assay. [d] Standard deviations of at least three assays are in parentheses