Supporting Information

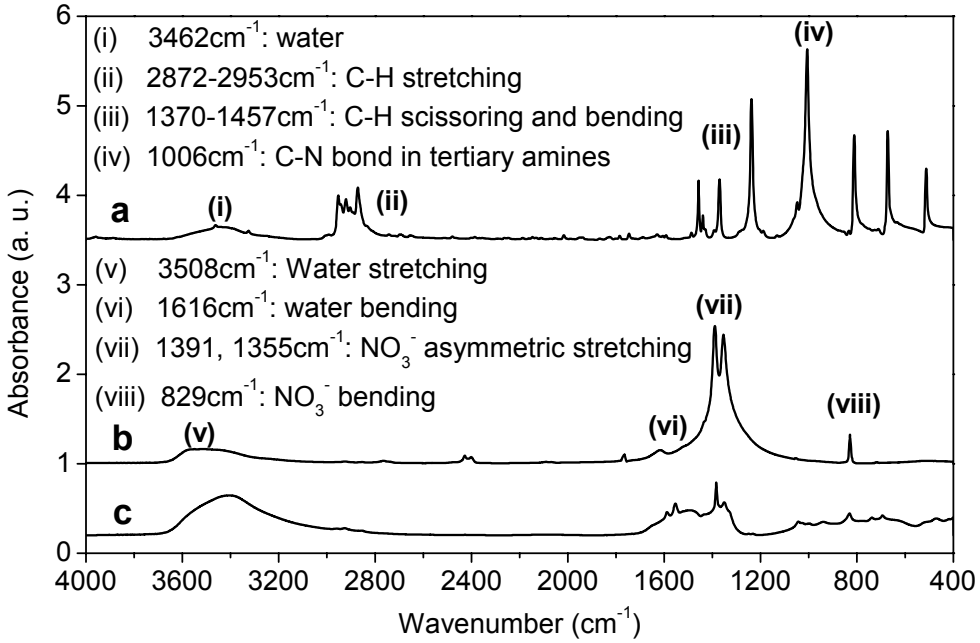

Figure S1. FTIR-KBr of (a) HMTA, (b) $Zn(NO_3)_2 \cdot 6H_2O$, and (c) precipitates collected from the control reaction (without additive) after 24 hours ($t_{20°C}$=24hrs).

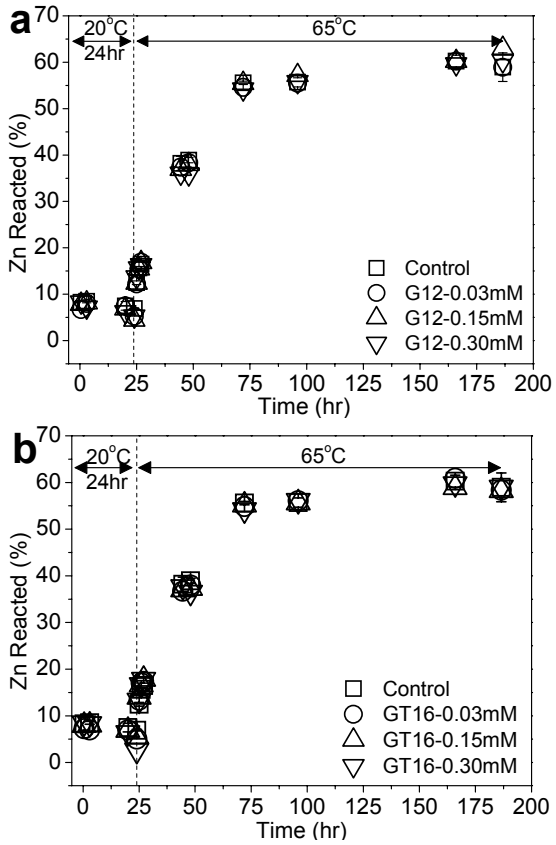

Figure S2. The percentage of Zn^{2+} reacted as a function of reaction time for (a) G-12-added reactions and (b) GT-16-added reactions. The standard deviation [Zn^{2+}] for the control was based on three samples.

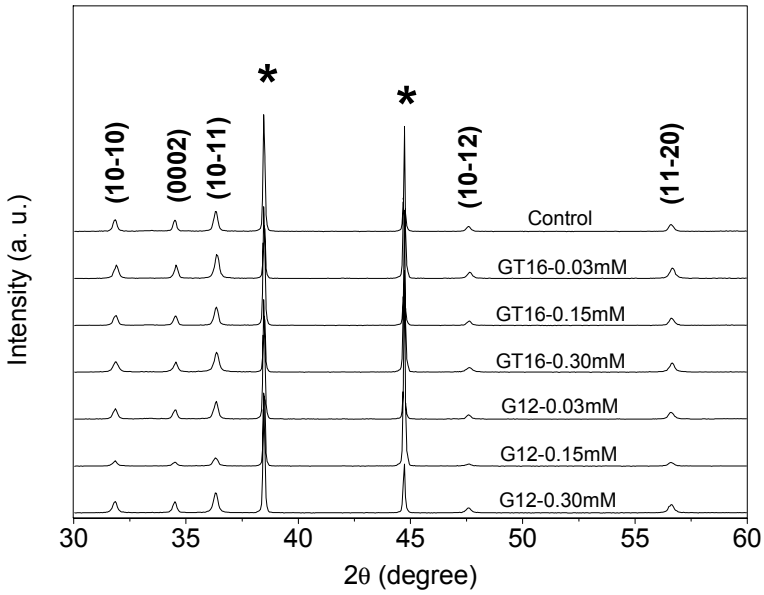

Figure S3. XRD patterns of ZnO formed after 25 hours ($t_{20°C}$=24hrs, $t_{65°C}$=1hr) in the presence and absence of G-12 and GT-16. The diffraction peaks from the aluminium sample holder are marked with asterisks.

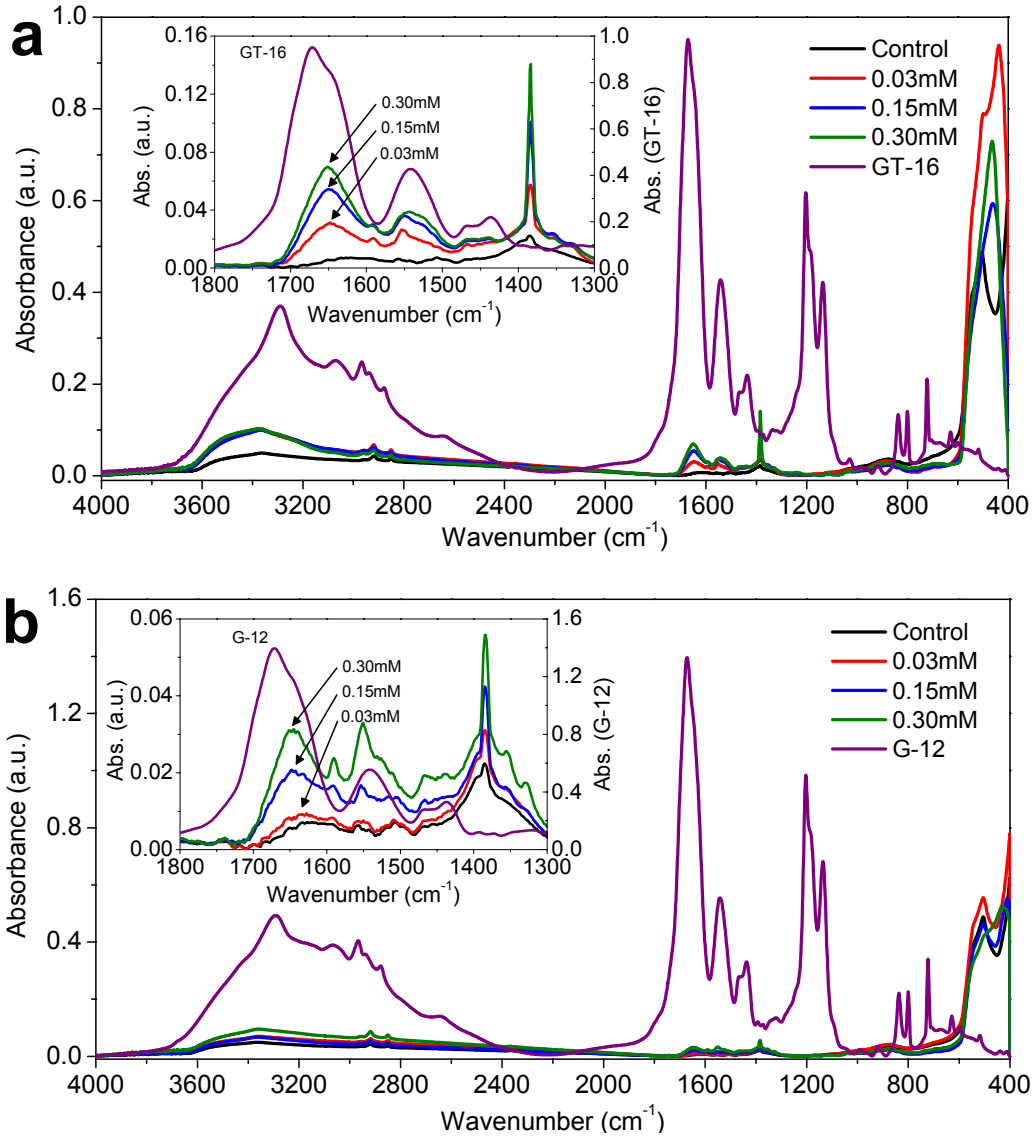

Figure S4. FTIR spectra of precipitates obtained after 48 hours ($t_{20°C}$=24hrs/$t_{65°C}$=24hrs) from (a) GT-16-added reactions, the control, and pure GT-16, and (b) G-12-added reactions, the control, and pure G-12.

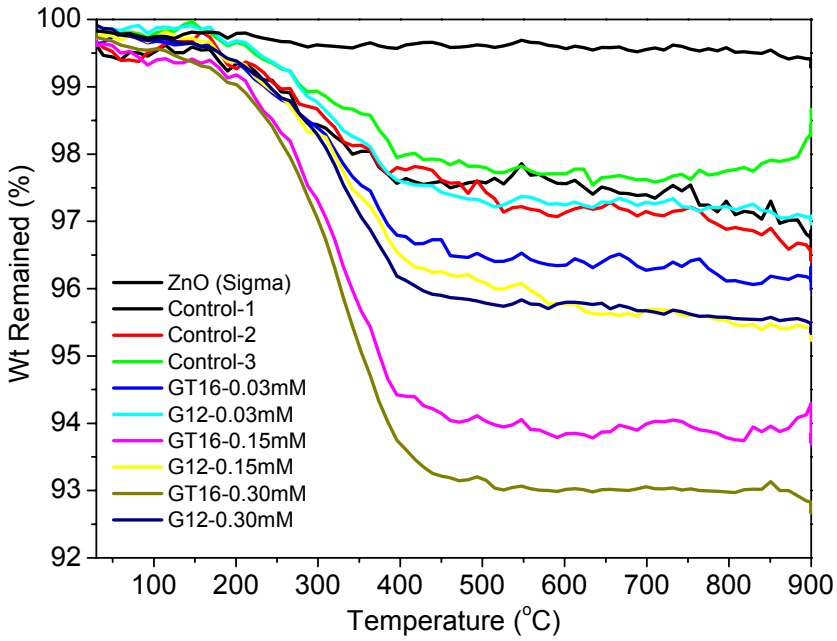

Figure S5. TGA curves of precipitates collected after 48 hours reaction.

S6: The estimated weight loss at 200-900°C region contributed by coprecipitated NO_3^-.

Due to the lower M_w of NO_3^- (62g/mol) compared to the M_w of G-12 (1341.64g/mol) and GT-16 (1615.93g/mol), the presence of NO_3^- as part of the organic component in the precipitate would not alter the trend showed in Figure 4b significantly. Assuming every peptide molecule would form complexes with three NO_3^- as suggested by the pK_a values of side chain functionalities, the organic weight loss contributed by NO_3^- would be 12.2% and 10.3% for G-12 and GT-16 respectively

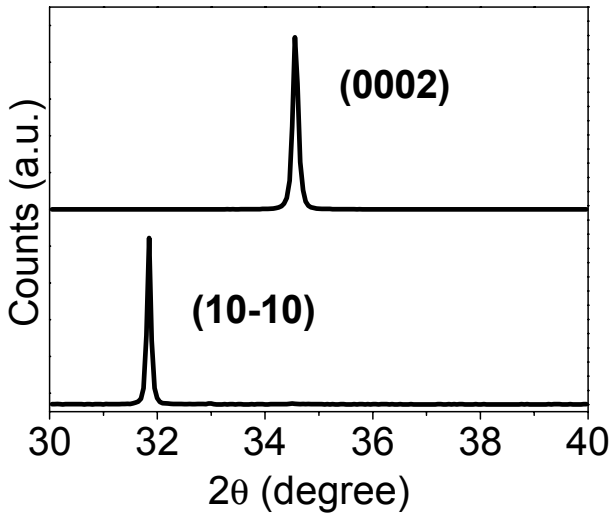

Figure S7. Crystal orientation of annealed ZnO films grown by the ALD technique.

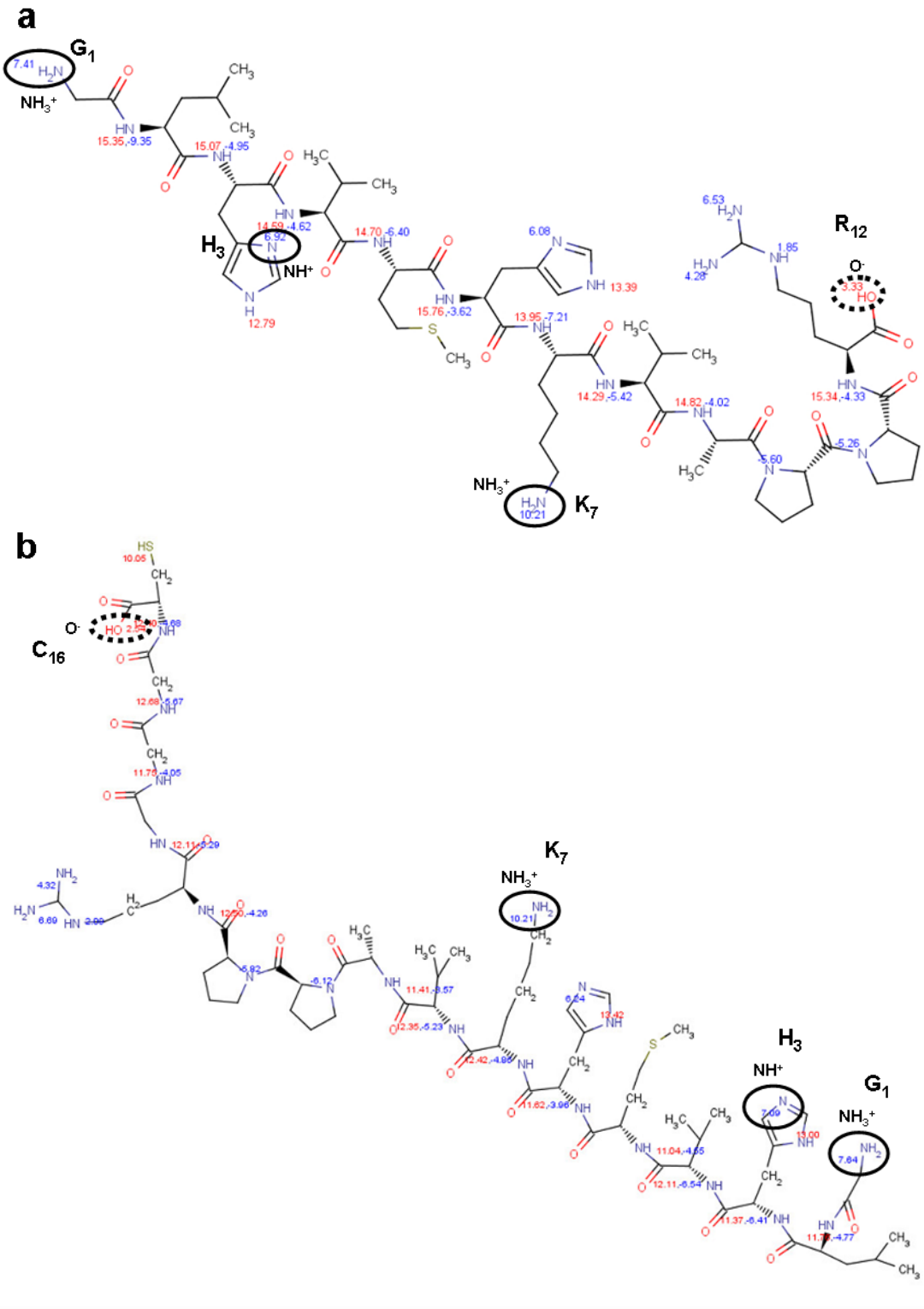

Figure S8. pK_a and structure of (a) G-12 and (b) GT-16 obtained using Marvin software at 298K. The side chain of residues with ≥50% protonation or ≥50% deprotonation at pH 6.9±0.1 are circled by solid line and dotted line respectively.

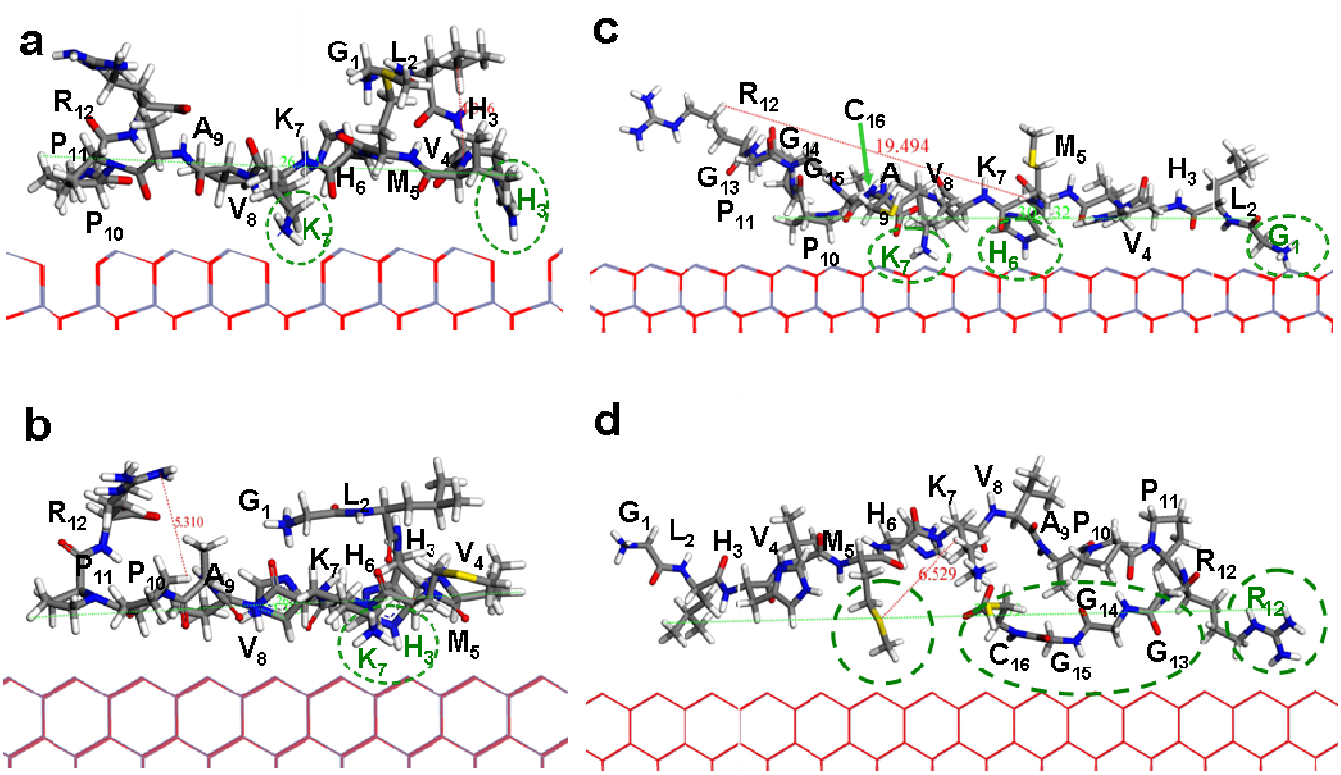

Figure S9. The side view of peptide adsorbing on different ZnO planes: (a) G-12 on (0001), (b) G-12 on (10-10), (c) GT-16 on (0001), and (d) GT-16 on (10-10). The peptide sequence was numbered from the N-terminus to the C-terminus using the standard single letter abbreviation. The side chains of residues predicted to adsorb on ZnO surfaces are marked with dash-lined circles.