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The role of hydrophobic, aromatic and electrostatic interactions between amino acid residues and a titanium dioxide surface

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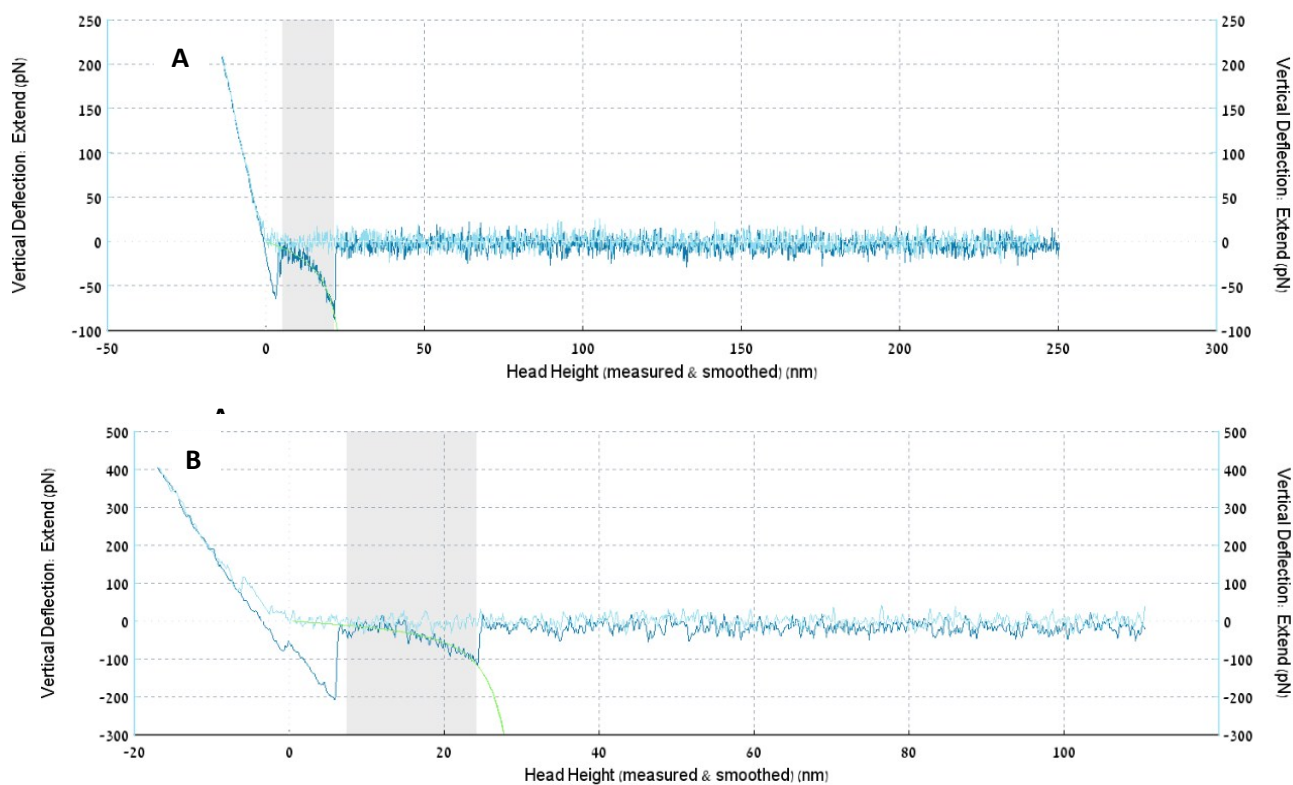
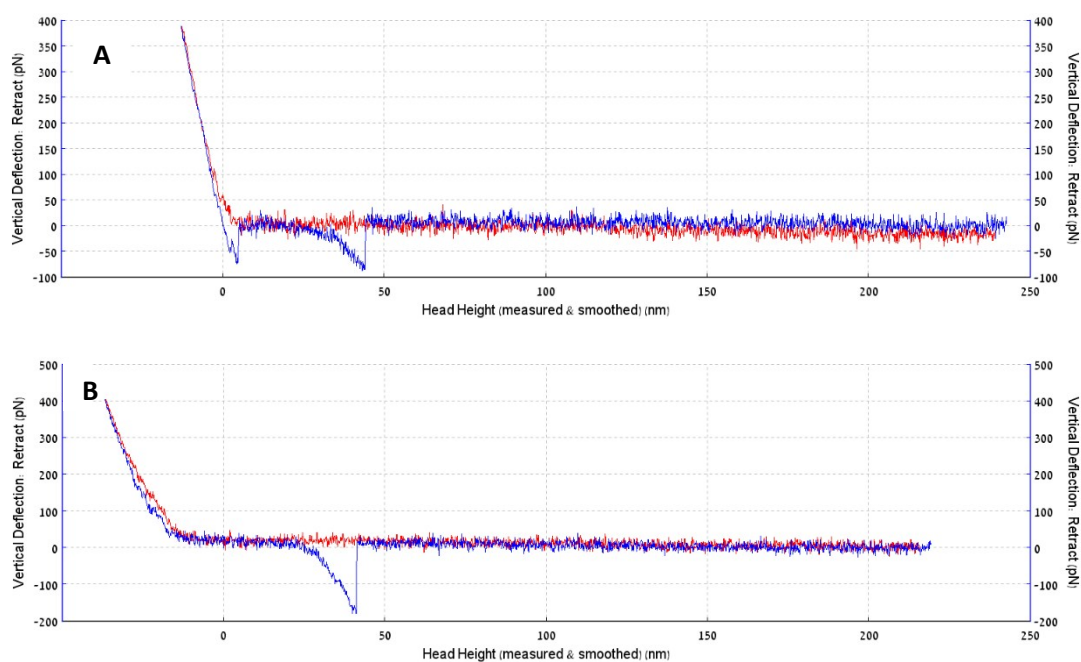


Figure 13. Typical force-distance curves fitted with a worm-like chain (WLC) model, between TiO₂ surface and tip modified with studied amino acids in Tris buffer (pH 7.2); (A) Phe, (B) NH₂-Phe. The fit indicates on a contour length of 30.83 nm and a persistence length of 161.9 pm for Phe, 32.98 nm and 143.6 pm for NH₂-Phe.



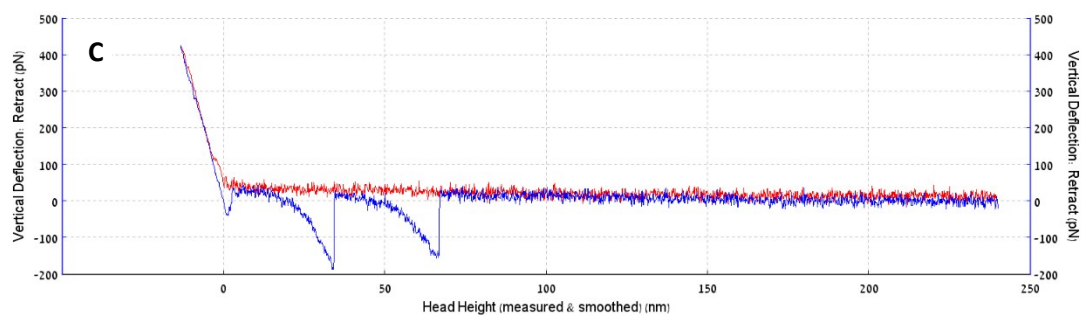


Figure 25. Representative force-distance curves between TiO_2 surface and tip modified with Orn amino acid in Tris buffer (pH 7.2). The red and blue curves indicate approach and retraction signals, respectively. The first peak of the F-D curve (**A-B**) represents the nonspecific interactions between the tip and the surface, while the second peak of the curve represents the adhesion force of the amino acid residue. (**C**) The force distance curve with two peaks both indicating the adhesion events.