ESI

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

Avia Leader, Daniel Mandler* and Meital Reches*

Institute of Chemistry and the Center for Nanoscience and Nanotechnology, The Hebrew University of Jerusalem, Edmond Safra campus, Jerusalem 919041

*Corresponding Authors:

Meital Reches, E-mail: meital.reches@mail.huji.ac.il, Tel: +972-2-6584551, Fax: +972-2-6584501.

Daniel Mandler, E-mail: daniel.mandler@mail.huji.ac.il, Tel: +972-2-6585831, Fax: +972-2-6585319.
Figure 1. Typical force-distance curves fitted with a worm-like chain (WLC) model, between TiO$_2$ surface and tip modified with studied amino acids in Tris buffer (pH 7.2); (A) Phe, (B) NH$_2$-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 NH$_2$-Phe.
Figure 2S. 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.