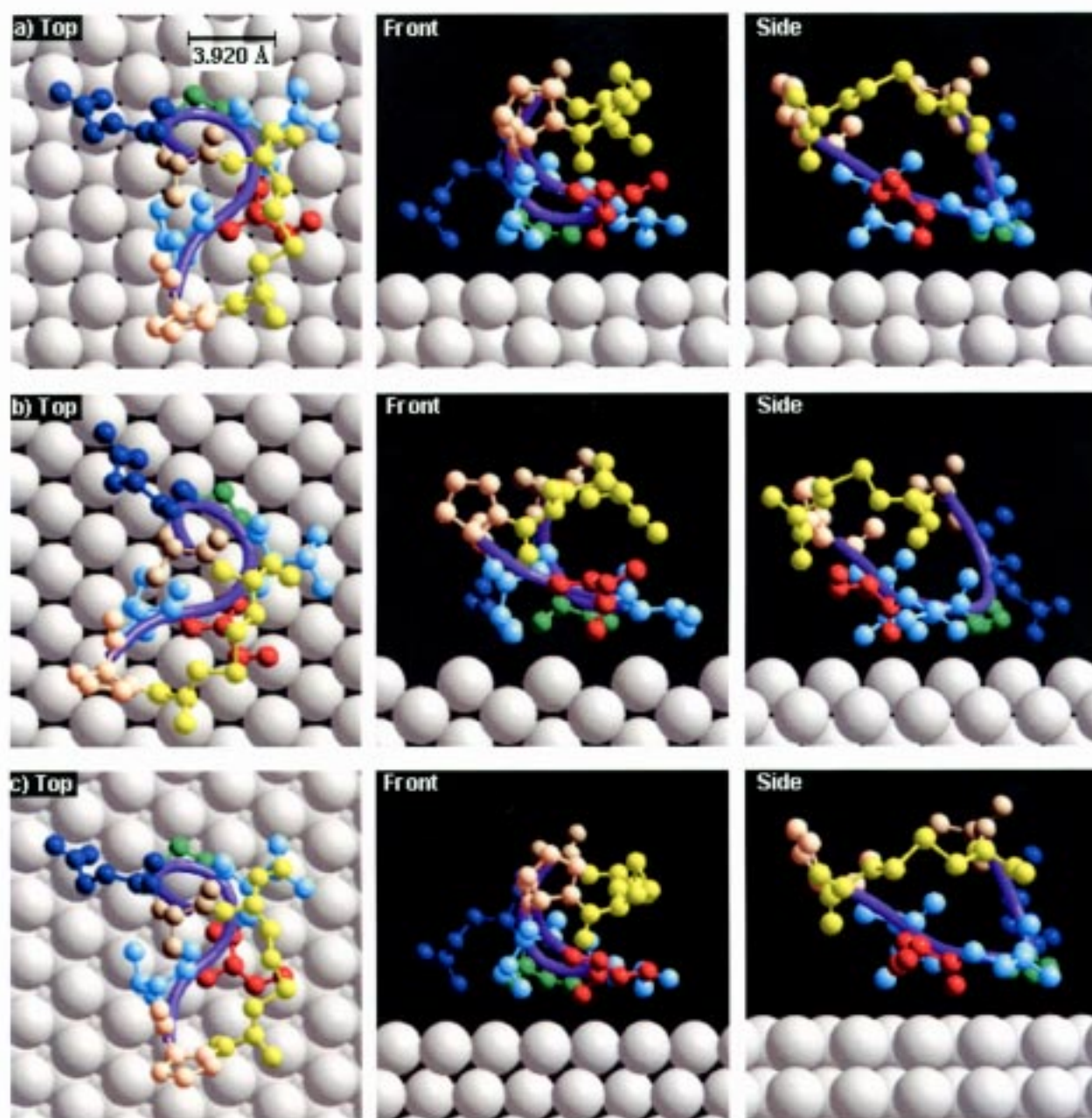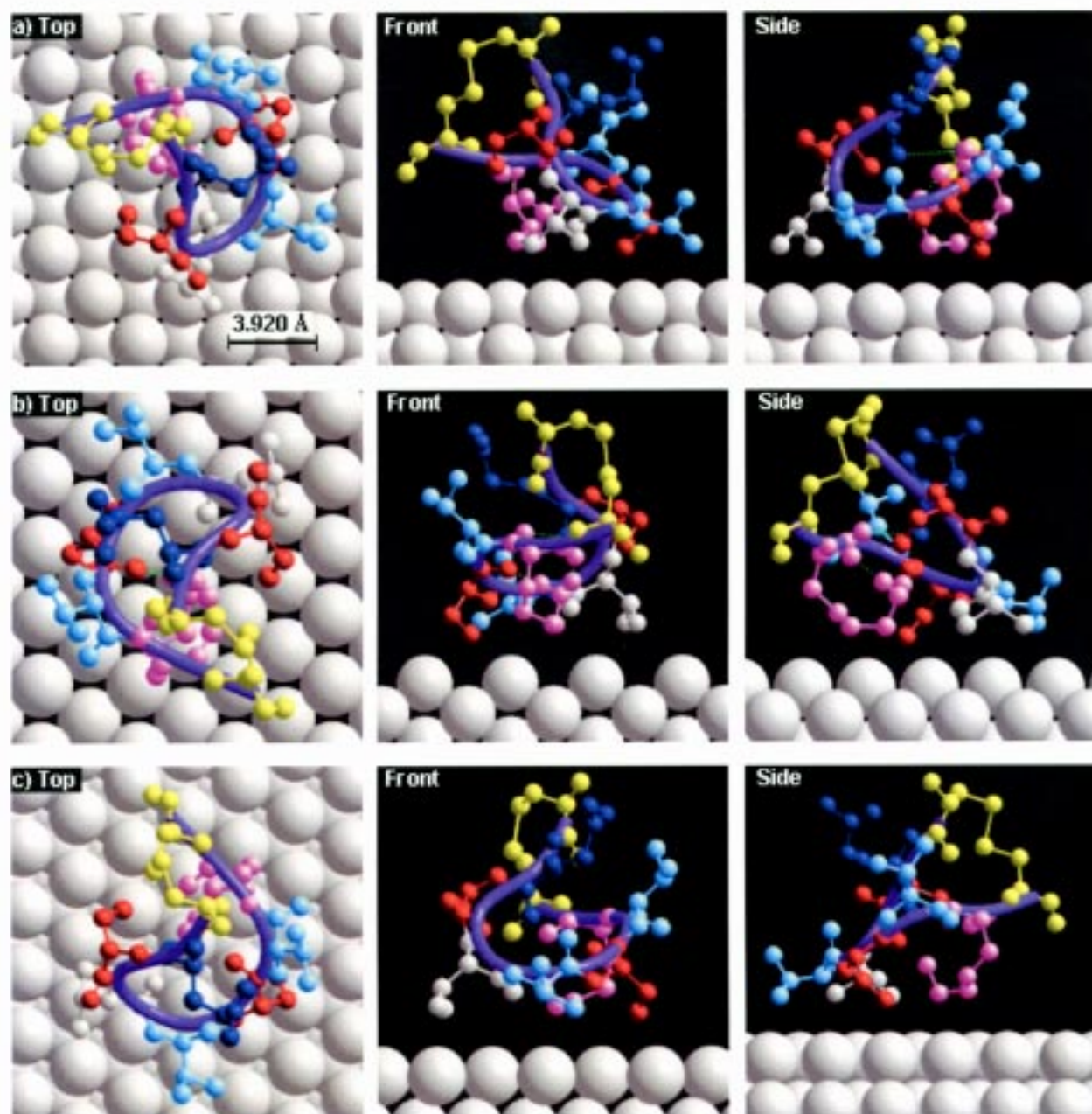(1)   Top, front and side views of SD152, 60, 128, 1 and 6 on (100), (110) and (111) Pt surfaces.
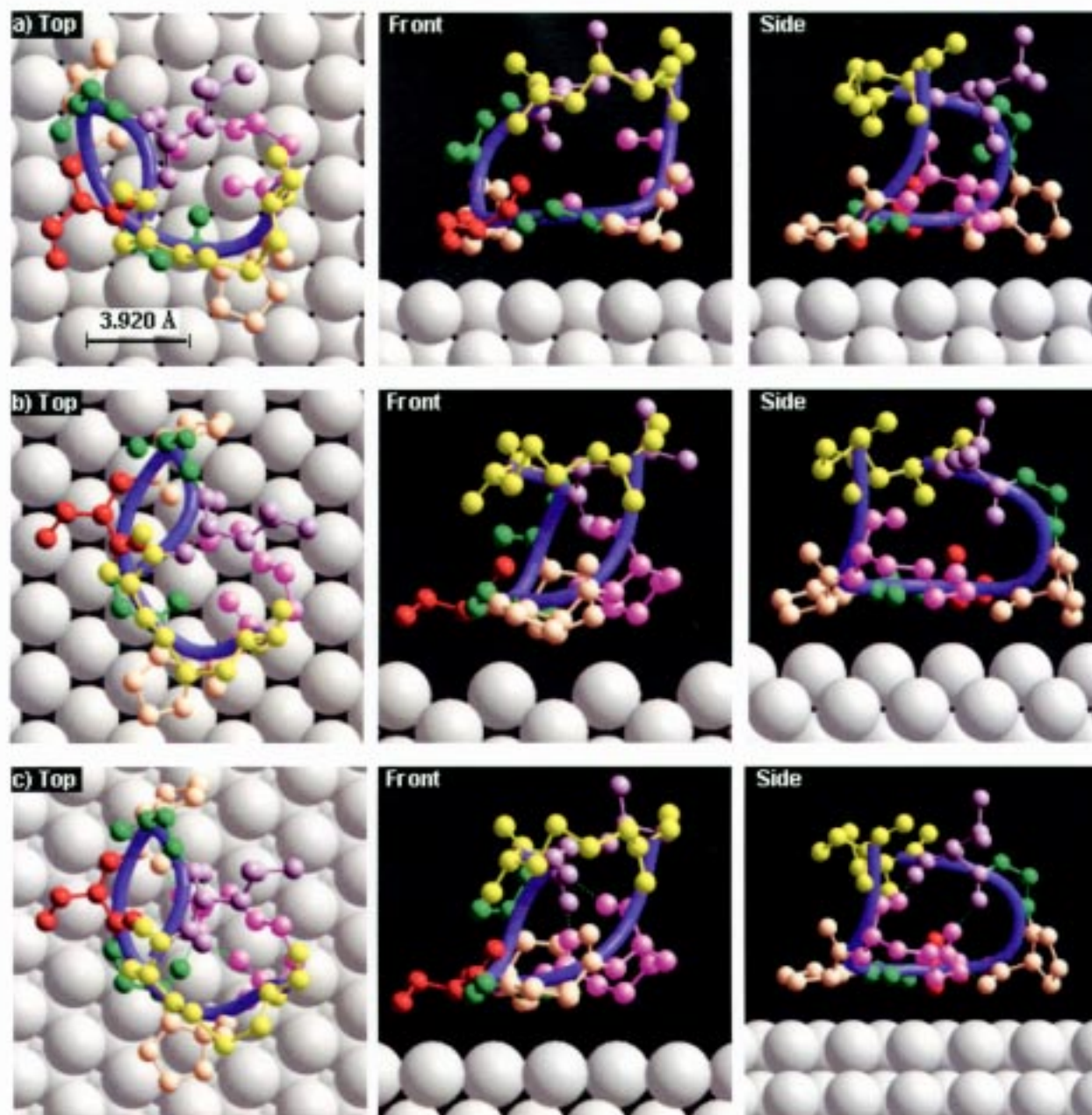


**Figure S1.** Top, front and side views of *SD152* on (a) Pt(100), (b) Pt(110), and (c) Pt(111) surface. The side chains are colored according to CPTSTGQAC. The Pt atoms were rendered by overlapping spheres whereas the protein atoms were rendered by balls and cylinders model with the coil representation of the secondary structure of the protein.

**Figure S2.** Top, front and side views of *SD60* on (a) Pt(100), (b) Pt(110), and (c) Pt(111) surface. The side chains are colored according to CQSVTSTKC. The Pt atoms were rendered by overlapping spheres whereas the protein atoms were rendered by balls and cylinders model with the coil representation of the secondary structure of the protein.
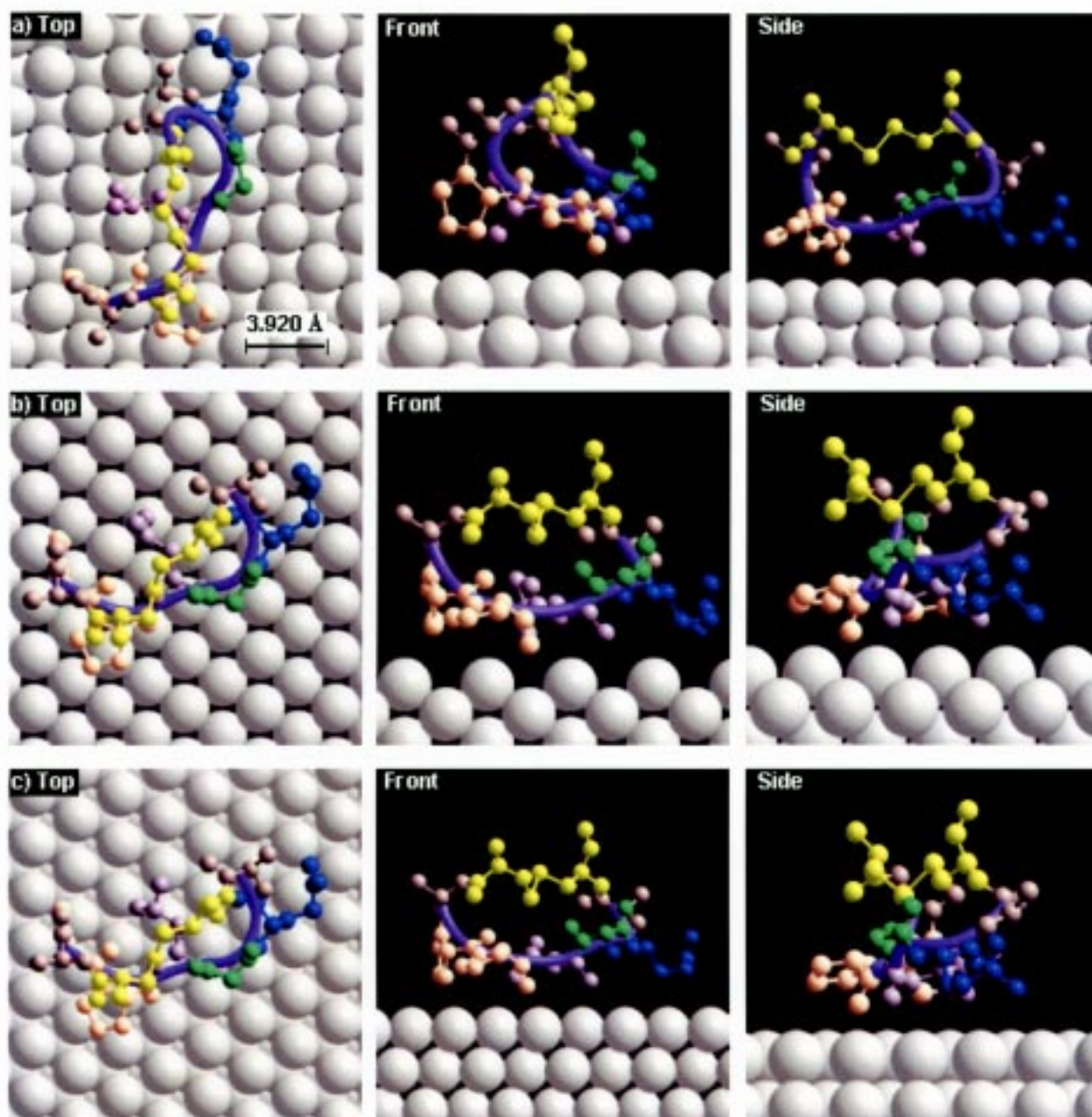
**Figure S3.** Top, front and side views of *SD128* on (a) Pt(100), (b) Pt(110), and (c) Pt(111) surface. The side chains are colored according to CLGPSGPKC. The Pt atoms were rendered by overlapping spheres whereas the protein atoms were rendered by balls and cylinders model with the coil representation of the secondary structure of the protein.
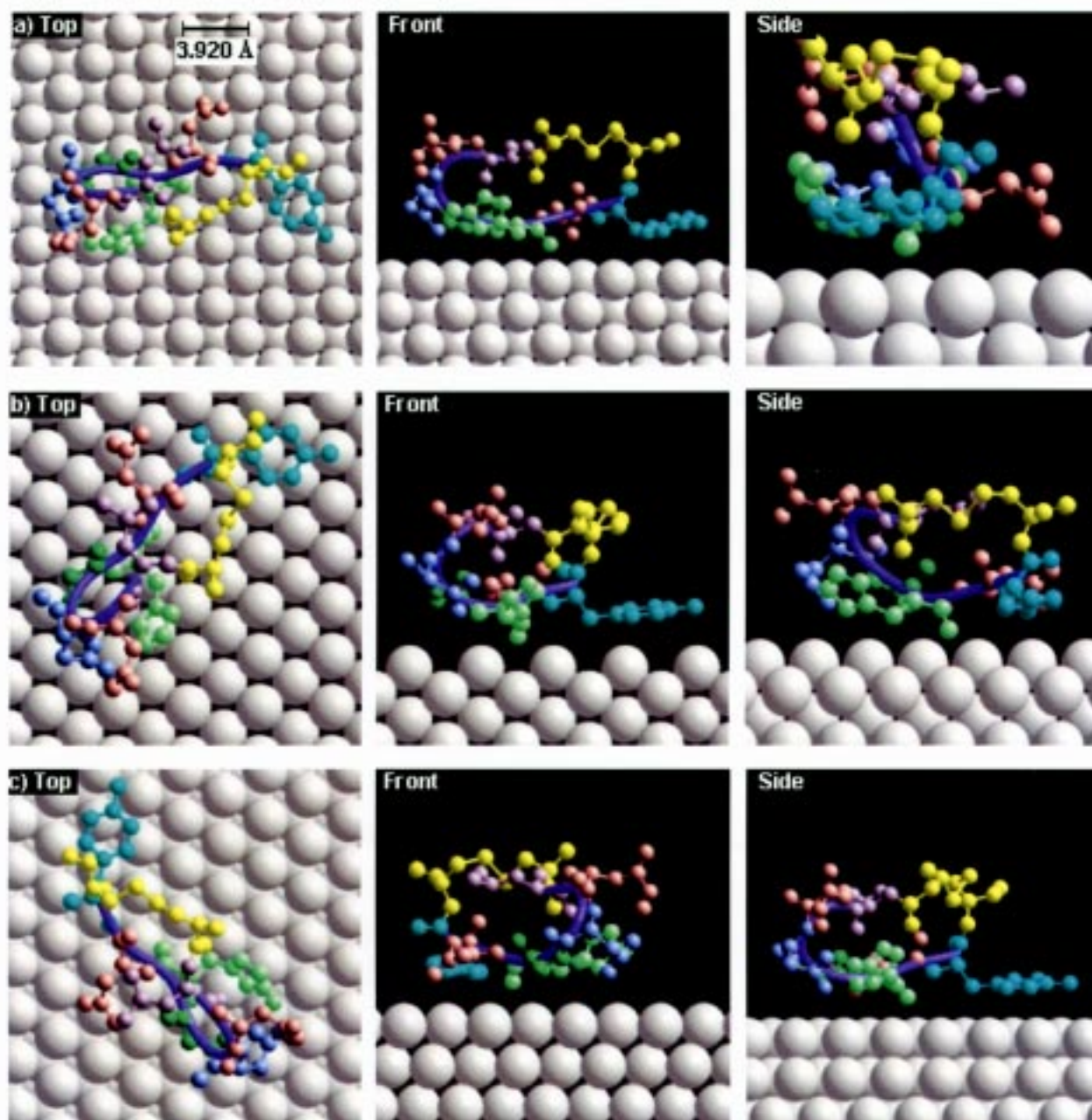
**Figure S4.** Top, front and side views of **SD1** on (a) Pt(100), (b) Pt(110), and (c) Pt(111) surface. The side chains are colored according to **CAPPLGQAC**. The Pt atoms were rendered by overlapping spheres whereas the protein atoms were rendered by balls and cylinders model with the coil representation of the secondary structure of the protein.
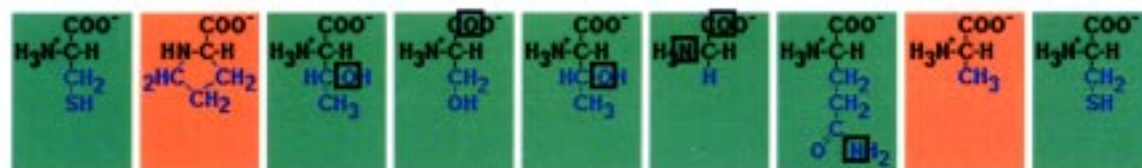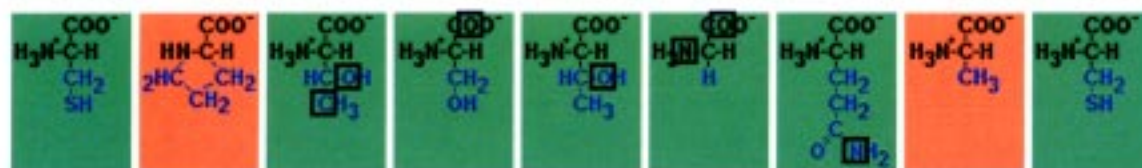
**Figure S5.** Top, front and side views of **SD6** on (a) Pt(100), (b) Pt(110), and (c) Pt(111) surface. The side chains are colored according to CLNDGHNYC. The Pt atoms were rendered by overlapping spheres whereas the protein atoms were rendered by balls and cylinders model with the coil representation of the secondary structure of the protein.

(2) Detailed list of binding amino acids, groups and atoms that form the polypod molecular architecture on top of (100), (110) and (111) Pt surfaces.
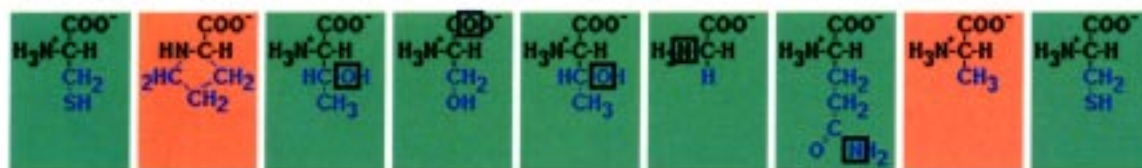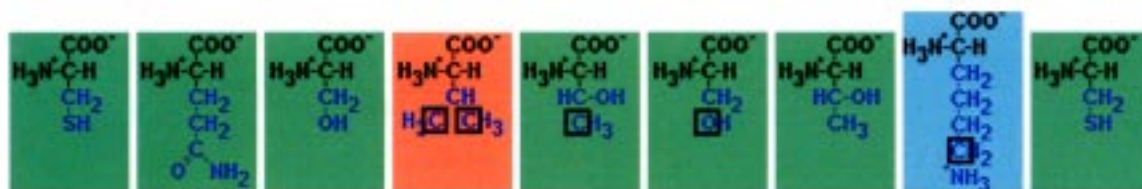
**SD152 CPTSTGQAC on Pt (100)**



**SD152 CPTSTGQAC on Pt (110)**



**SD152 CPTSTGQAC on Pt (111)**



**SD60 CQS\TSTKC on Pt (100)**



**SD60 CQS\TSTKC on Pt (110)**



**SD60 CQS\TSTKC on Pt (111)**
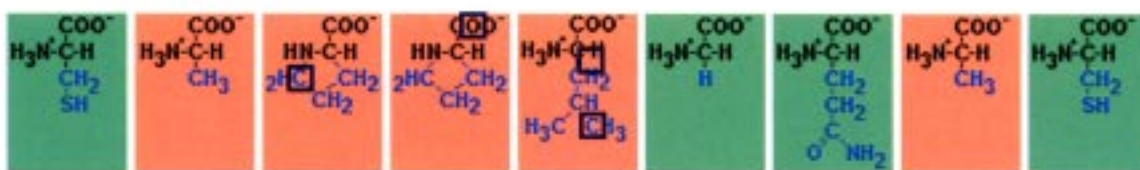


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## SD128 CLGPSGPKC on Pt (100)
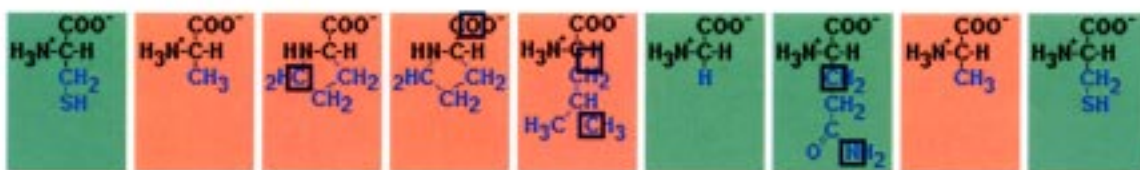


## SD128 CLGPSGPKC on Pt (110)
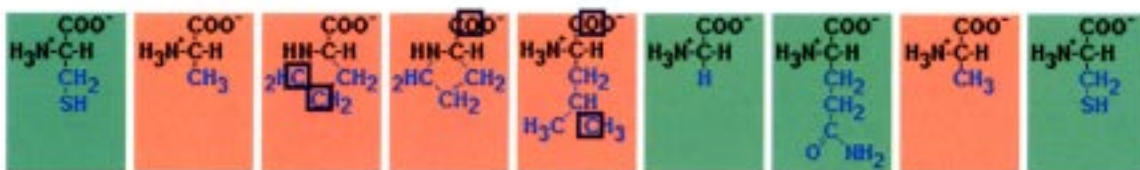


## SD128 CLGPSGPKC on Pt (111)



## SD1 CAPPLGQAC on Pt (100)



## SD1 CAPPLGQAC on Pt (110)



## SD1 CAPPLGQAC on Pt (111)



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**SD6   CLNDGHNYC on Pt (100)**



**SD6   CLNDGHNYC on Pt (110)**



**SD6   CLNDGHNYC on Pt (111)**