

**Table S1.** FTIR vibrational modes arising from PTA, PMA, AuNPs<sup>Tyr</sup>, AuNPs<sup>Tyr@PTA</sup>, AuNPs<sup>Tyr@PTA-Lys</sup>, AuNPs<sup>Tyr@PMA</sup> and AuNPs<sup>Tyr@PMA-Lys</sup>.

Sample Name	FTIR Signatures (cm <sup>-1</sup> )		
	P-O	Mo-O	Mo-O-Mo
<b>PMA</b>	1058	951	864
<b>AuNPs<sup>Tyr@PMA</sup></b>	1078	944	849
<b>AuNPs<sup>Tyr@PMA-Lys</sup></b>	1062	938	850
	P-O	W-O	W-O-W
<b>PTA</b>	1075	972	874
<b>AuNPs<sup>Tyr@PTA</sup></b>	1097	966	861
<b>AuNPs<sup>Tyr@PTA-Lys</sup></b>	1093	954	855