Electronic Supplementary Material (ESI) for Analyst.

Electronic Supplementary Information

for

Ti^{4+}-immobilized Phosphate Polymer-patterned Silicon Substrate for On-plate Selective Enrichment and Self-desalting of Phosphopeptides

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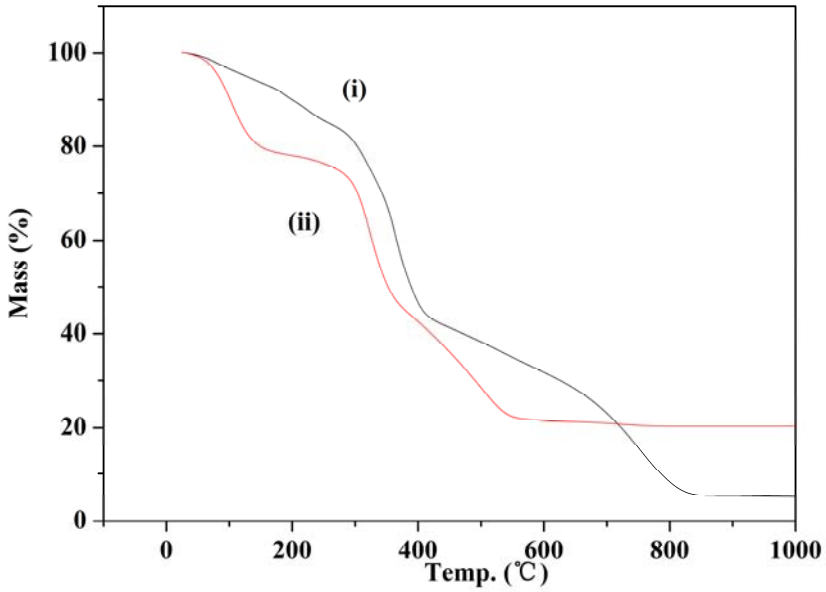


Fig. S1. TGA curves of: (i) poly(MAA-HEMAP); (ii) poly(MAA-HEMAP)-Ti^{4+}.

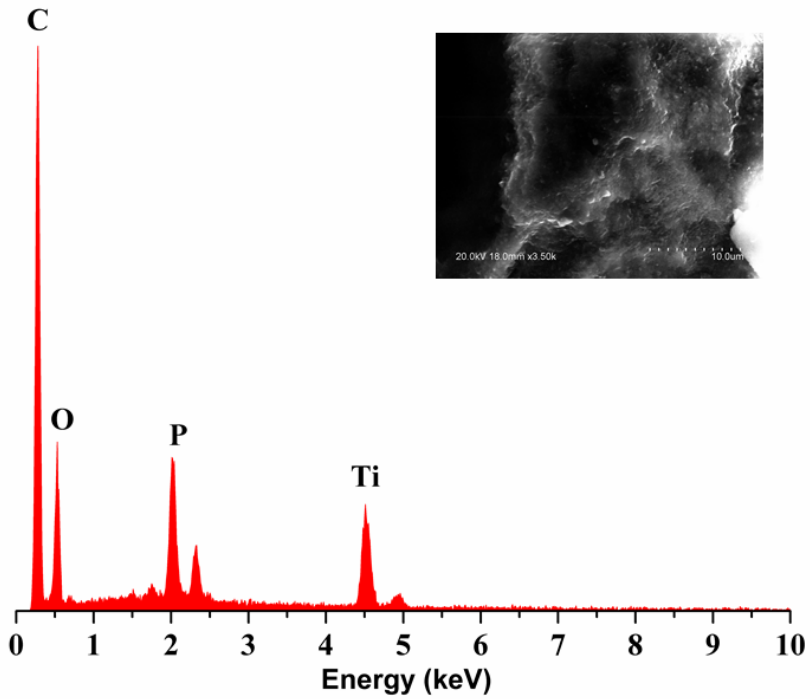
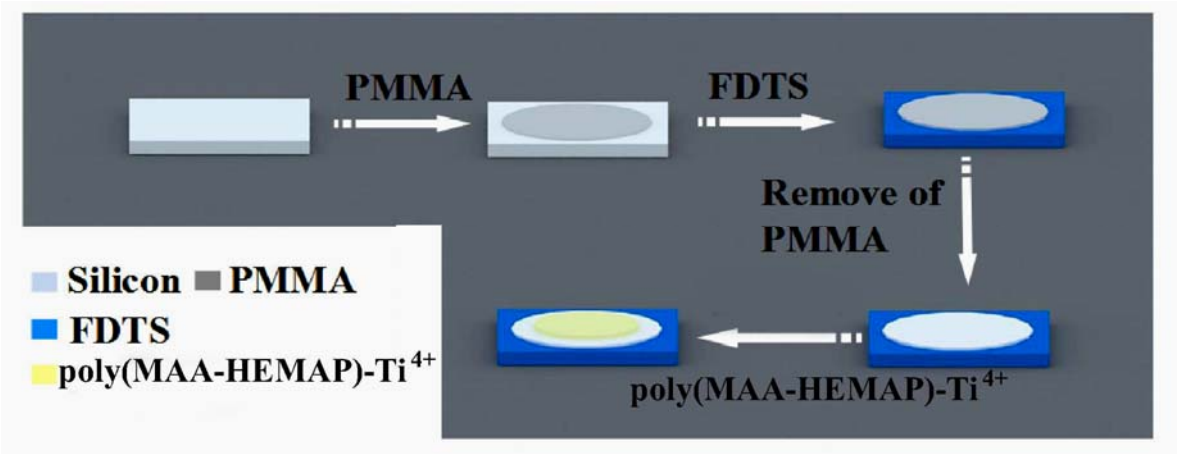


Fig. S2. The energy dispersive X-ray (EDX) spectrum data of poly(MAA-HEMAP)-Ti^{4+}

Table S1. The energy dispersive X-ray (EDX) spectrum data of poly(MAA-HEMAP)-Ti^{4+}

Element	Wt%	At%
C K	65.69	76.10
O K	22.76	19.79
P K	4.75	2.14
Ti K	6.79	1.97



Scheme S1. Schematic illustration for the preparation of the patterned sample support.

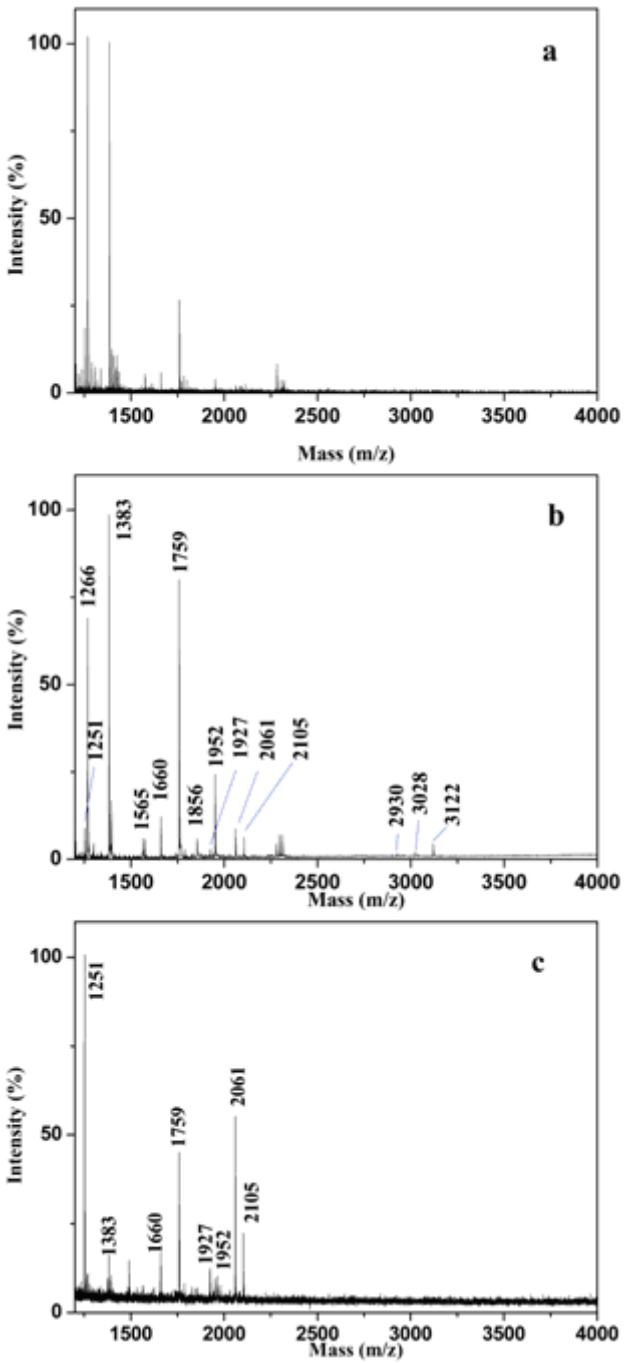


Fig. S3. Mass spectra of the peptides: casein (1.5×10^3 fmol μL^{-1}) obtained with (a) the traditional MALDI plate and the patterned sample support: the concentration of casein are (b) 15 fmol μL^{-1}; (c) 5 fmol μL^{-1}, respectively.

Table S2. Peptides detected in the sample by using the patterned sample support

peak number	observed m/z	aa	amino acid sequence	References
1	1251	α-S2(213–222)	TKVIPYVRYL	1
2	1266	α-S1(91–100)	YLGYLEQLLR	1, 2, 5
3	1337	α-S1/52–73	VNELpSKDIGpSEpSTEDQAMEDIK	1, 2, 4, 5
4	1383	α-S1(38–49)	FFVAPFPEVFGK	1, 2, 5
5	1466	α-S2(153–164)	TVDMESTEVFTK	2, 4
6	1565	beta-casein(1-25)	RELEELNVPGEIVESLSSSEESITR	3, 5
7	1637	α-S1(106–118)	YLGYLEQLLRLKK	1, 6
8	1641	α-S1(38–51)	FFVAPFPEVFGKEK	1
9	1660	α-S1(121–134)	VPQLEIVPNSAEER	2, 4, 5, 6
10	1759	α-S1(23–37)	HQGLPQEVLNENLLR	1, 2, 5
11	1832	α-S1(106-120)	YLGEYLIVPNSAEER	4, 6
12	1848	α-S1(58–73)	DIGpSETEDQAMEDIK	1, 2
13	1856	α-S1(119-134)	DIGpSEpSTEDQAMEDIK	5
14	1927	α-S1(43–58)	DIGpSEpSTEDQAMEDIK	2, 4, 1
15	1952	α-S1(119–134)	YKVPQLEIVPNSAEER	2, 3, 4, 5,6
16	2029		KEESEESDDDMGFGLFD	2
17	2061	beta-casein (33–48)	FQ-pS-EEQQQTEDELQDK	3, 6
18	2105	α-S1(189–208)	TDAPSFSDIPNPIGSENSEK	1
19	2559	beta-casein(33–52)	FQSEEQQQTEDELQDKIHPF	3, 6
20	2736	α-S1(74-94)	Q-oxM-EAESISSSEEIVPNSVEQK	6
21	2930	α-S1(49-74)	KEKVNELpSKDIGpSEpSTEDQAMEDIKQ	2, 4
22	3028	beta-casein(/1-25)	RELEELNVPGEIVESLSSSEESITR	2, 3, 6
23	3122	beta-casein(/1-25)	RELEELNVPGEIVESLSSSEESITR	2, 3, 6

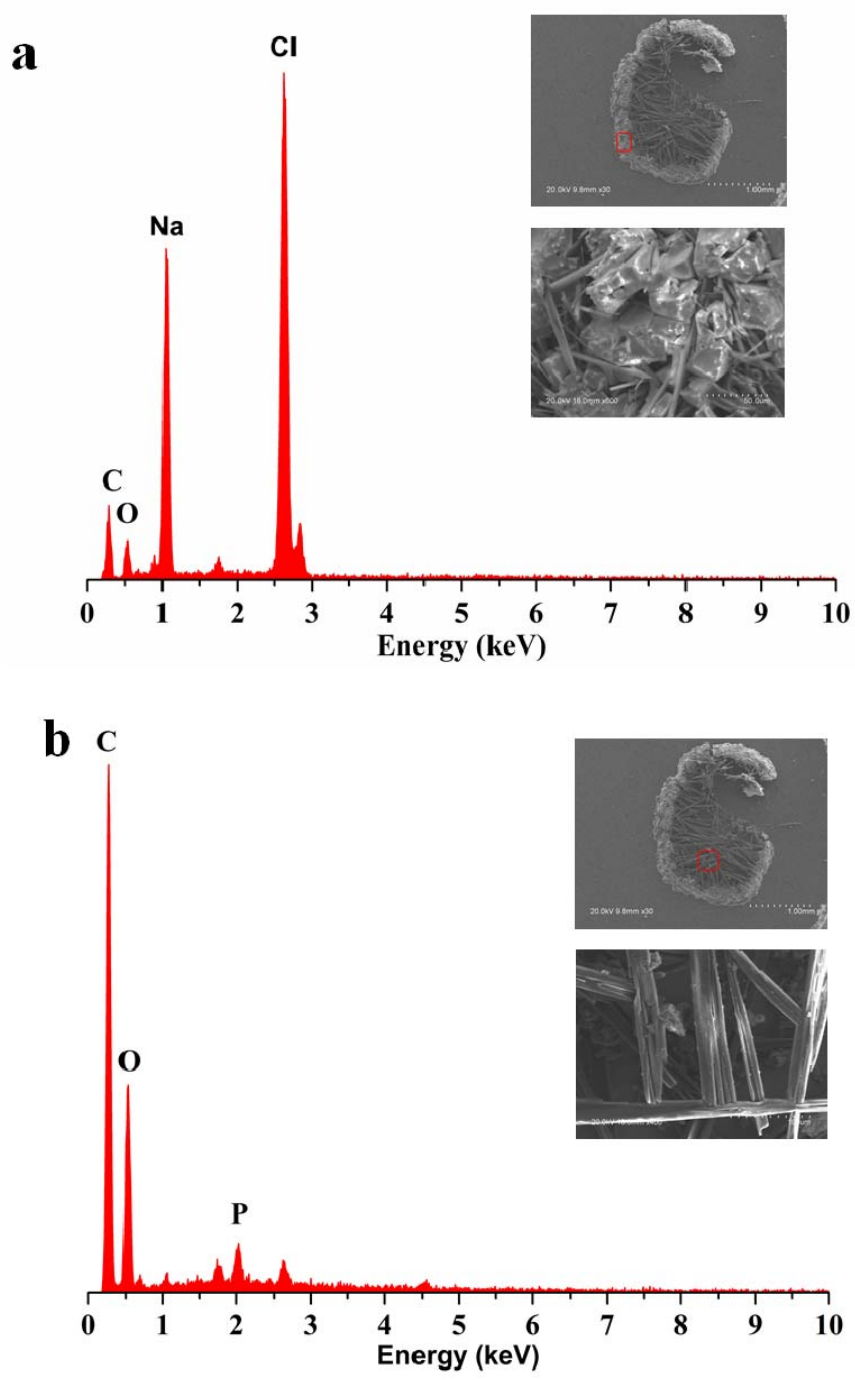


Fig. S4. EDX/SEM images of salt-containing sample preparation on the patterned sample support: (a) the salt contaminants are separated from the analytes. (b) the analyte-matrix co-crystallizations are distributed in the centre polymer surface.

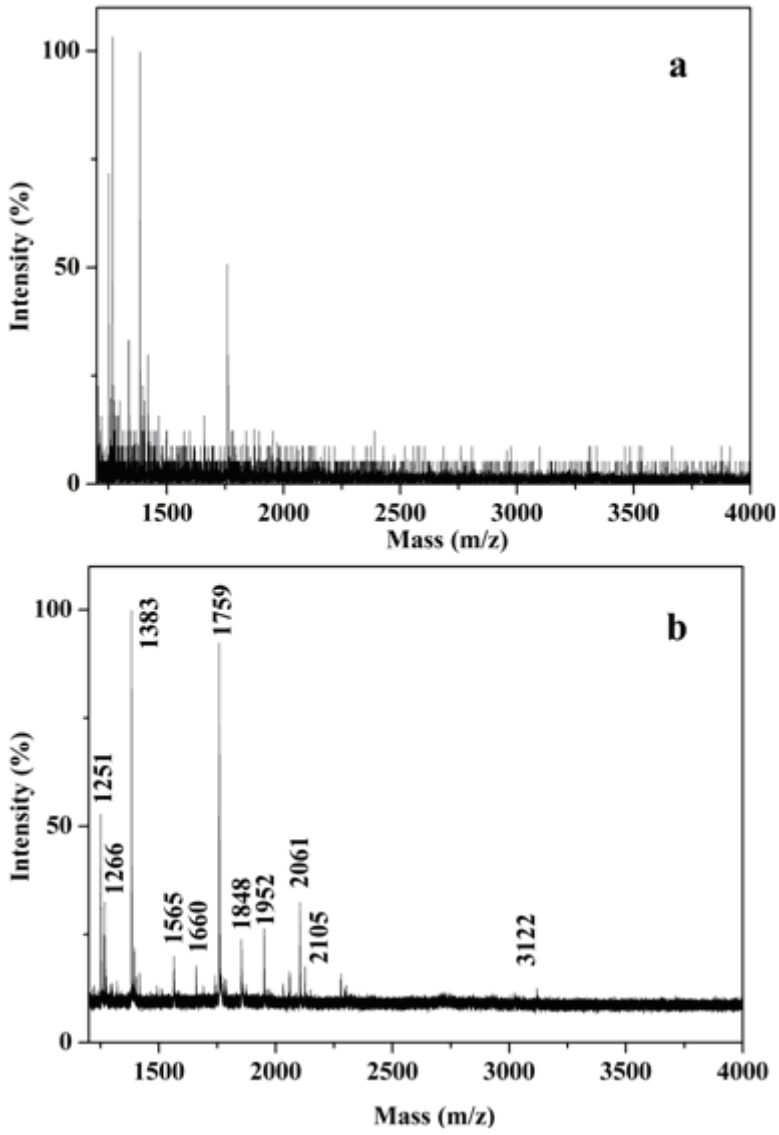


Fig. S5. Mass spectra of the peptides: human serum obtained with (a) the traditional MALDI plate and (b) the patterned sample support, respectively.

References

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