Electronic Supplementary Material (ESI) for Analyst.

Supplementary Information

Ultrasensitive Enrichment of Phosphopeptides by Ti^{4+} Immobilized SiO_2 Graphene-like Multilayers Nanosheets

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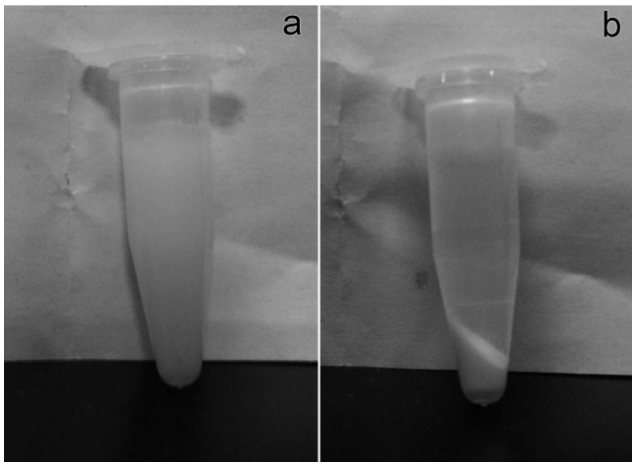
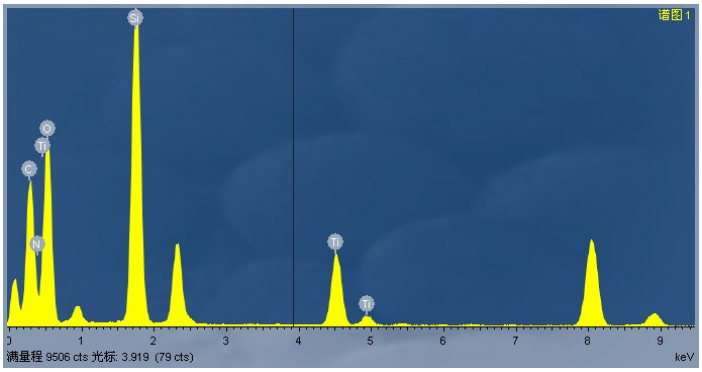


Figure S1. The Ti^{4+} immobilized SiO_2 graphene-like multilayers nanosheets solution was (a) before and (b) after centrifuged under 1000 r min^{-1} in less than 1 minute.



Element	Weight percentage	Atomic percentage
C K	24.56	35.06
N K	14.84	18.17
O K	25.75	27.59
Si K	26.52	16.19
Ti K	8.33	2.98
Tatol	100.00	

Figure S2. The energy dispersive X-ray (EDX) spectrum of the Ti^{4+} immobilized SiO_2 graphene-like multilayers nanosheets.

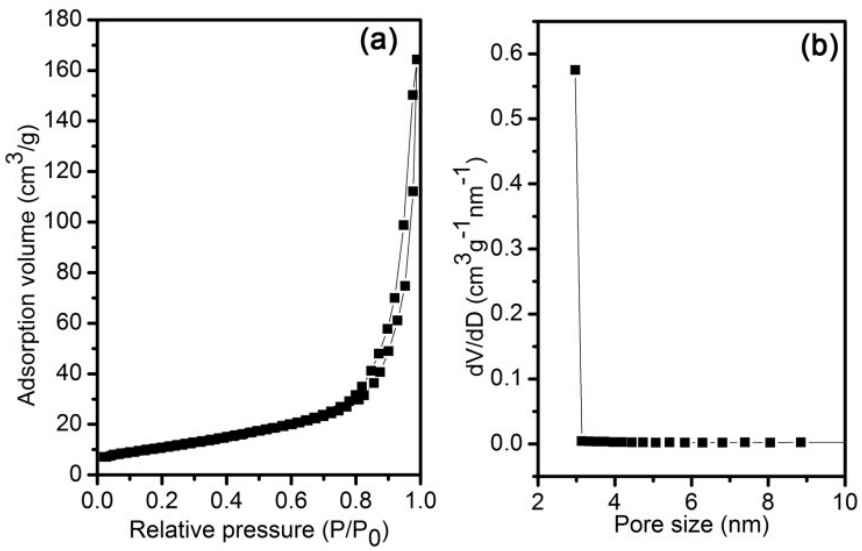


Figure S3. (a) N_2 isotherms and (b) pore-size distribution of the Ti^{4+} immobilized SiO_2 graphene-like multilayers nanosheets.

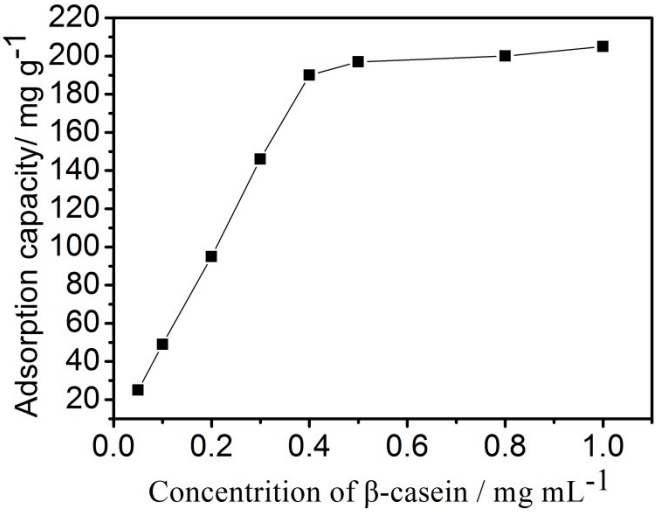
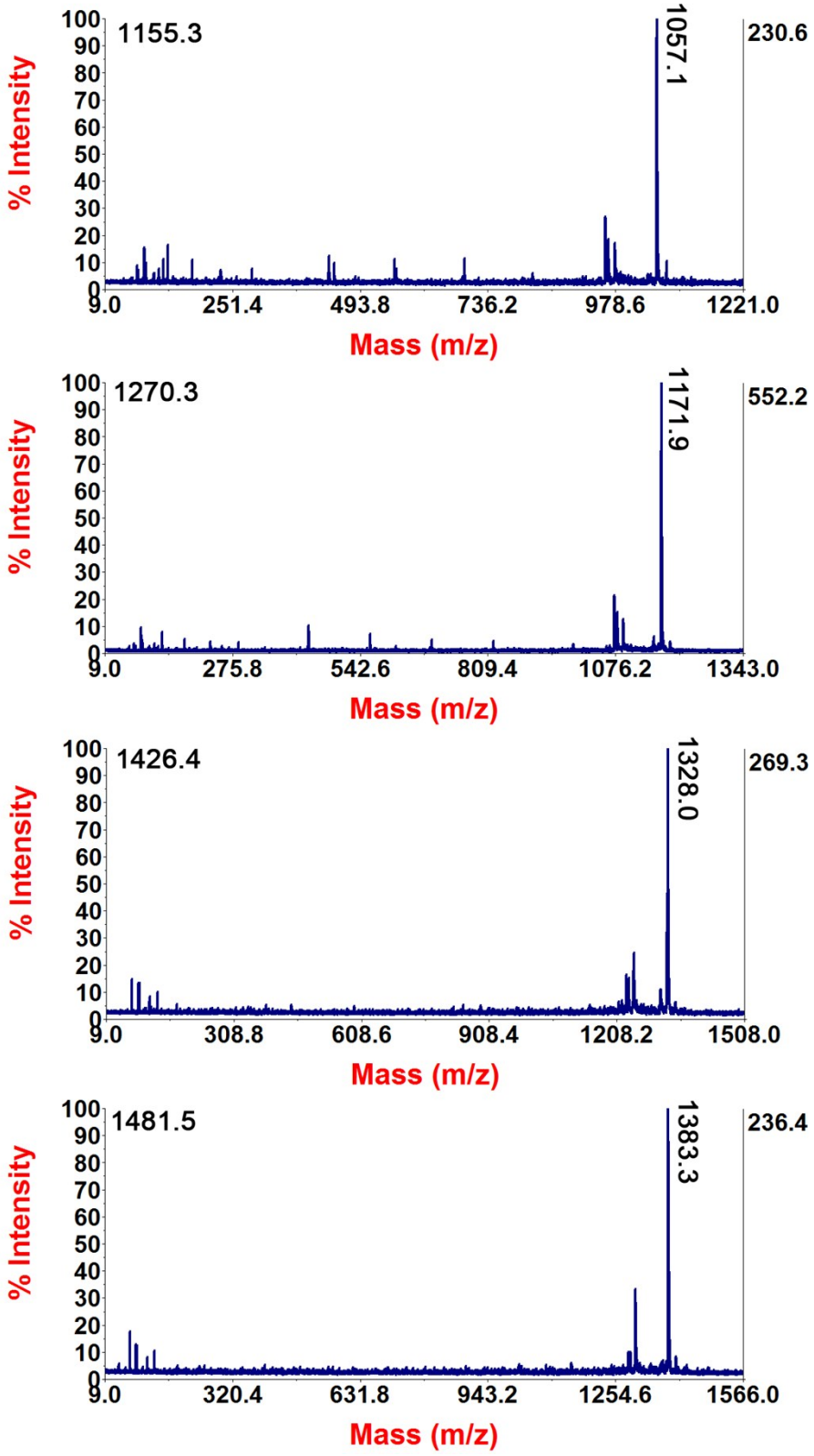
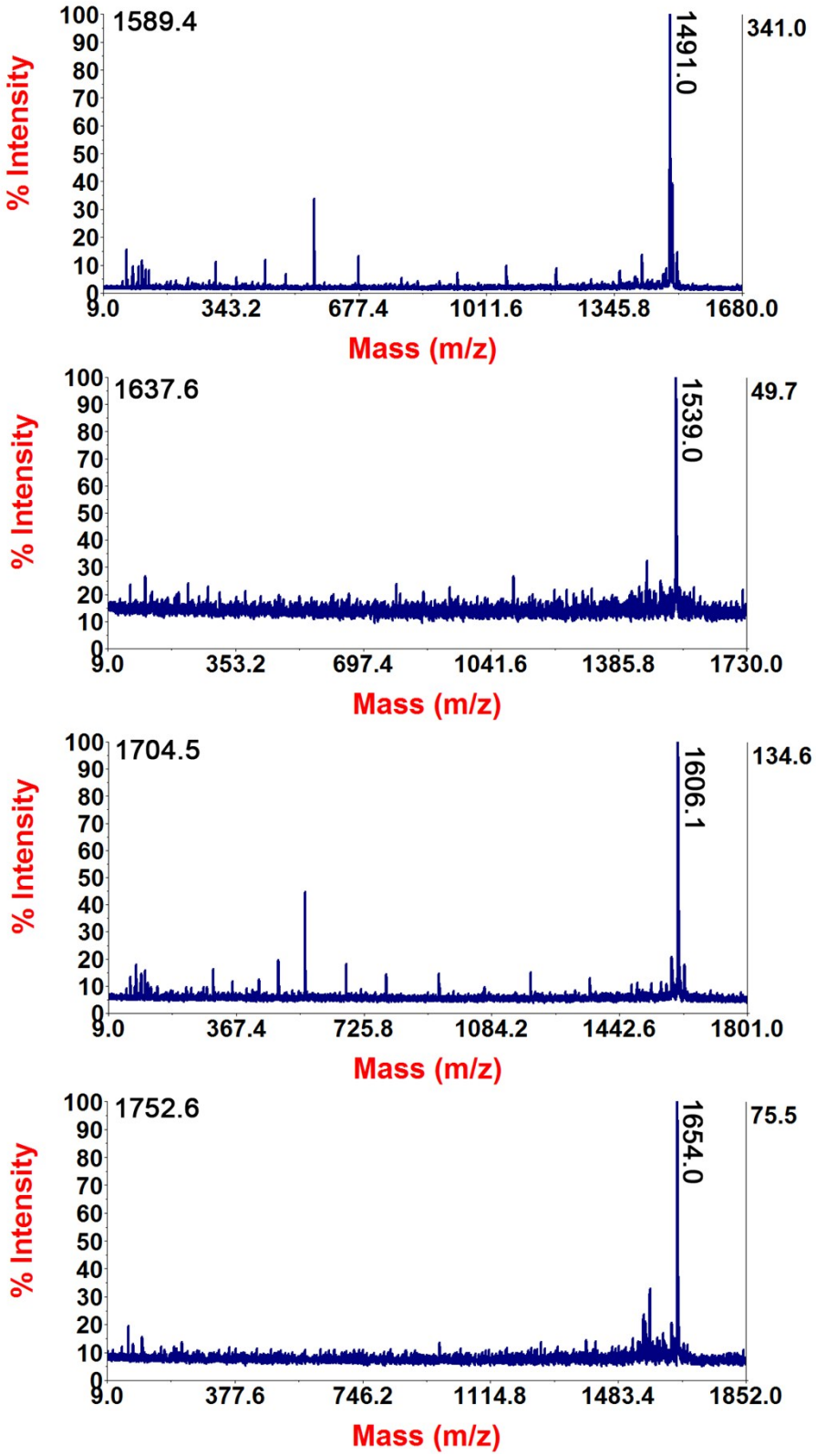
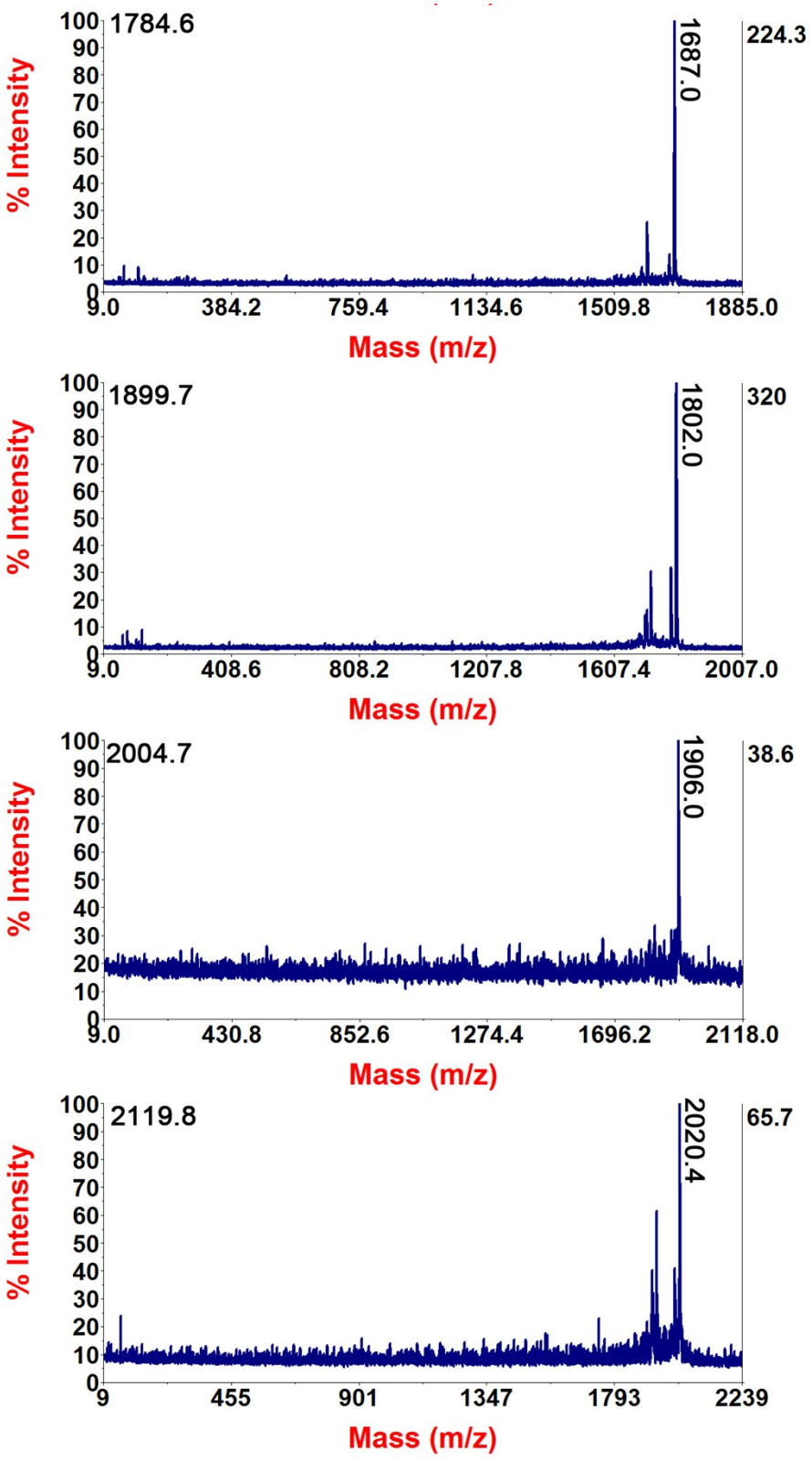


Figure S4. Adsorption capacity isotherm of phosphopeptides from β-casein by the Ti^{4+} immobilized SiO_2 graphene-like multilayers nanosheets.


1155.3
1057.1
230.6
% Intensity
Mass (m/z)
9.0
251.4
493.8
736.2
978.6
1221.0
1270.3
1171.9
552.2
275.8
542.6
809.4
1076.2
1343.0
1426.4
1328.0
269.3
308.8
608.6
908.4
1208.2
1508.0
1481.5
1383.3
236.4
320.4
631.8
943.2
1254.6
1566.0


1589.4
1491.0
341.0
% Intensity
Mass (m/z)
1637.6
1539.0
49.7
% Intensity
Mass (m/z)
1704.5
1606.1
134.6
% Intensity
Mass (m/z)
1752.6
1654.0
75.5
% Intensity
Mass (m/z)


1784.6
1687.0
224.3
% Intensity
Mass (m/z)
9.0
384.2
759.4
1134.6
1509.8
1885.0
1899.7
1802.0
320
408.6
808.2
1207.8
1607.4
2007.0
2004.7
1906.0
38.6
430.8
852.6
1274.4
1696.2
2118.0
2119.8
2020.4
65.7
455
901
1347
1793
2239

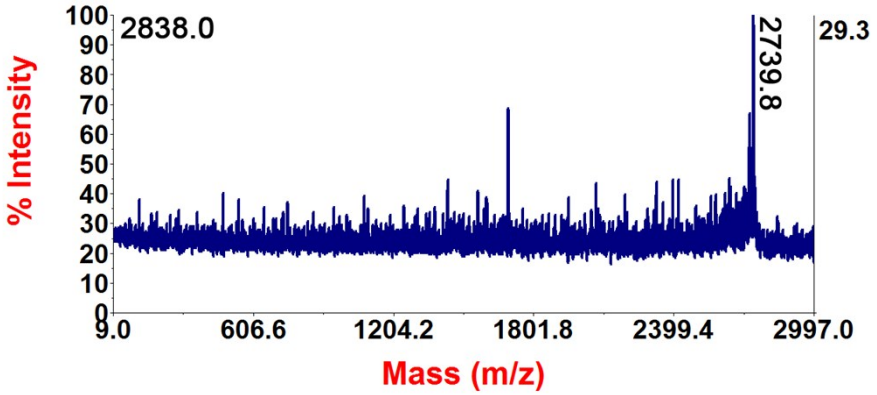


Figure S5. MALDI-TOF/TOF MS/MS spectra of thirteen endogenous phosphopeptides from healthy human salica with enrichment by using the Ti^{4+} immobilized SiO_2 graphene-like multilayers nanosheets.