

Supporting Information

Experimental Details

Enrichment of glycopeptides/phosphopeptides from serum

For the enrichment of glycopeptides from serum, 1 mg of CH-Dha@Ti⁴⁺ was ultrasonically dispersed in 100 µL of loading buffer (ACN/H₂O/TFA = 90/9/1, v/v/v), 500 µg of biological sample digest were added, and the solution was shaken at 37°C for 30 min. The supernatant was removed by centrifugation and washed with loading buffer several times. Then 10 µL of eluting buffer (ACN/H₂O/TFA = 30/69.9/0.1, v/v/v) was added and incubated at 37°C for 30 min and repeat it again. The eluate was collected, desalted, and lyophilized for further nano LC-MS/MS analysis.

For the enrichment of phosphopeptides from serum, 1 mg of CH-Dha@Ti⁴⁺ was ultrasonically dispersed in 100 µL of loading buffer (ACN/H₂O/TFA = 50/49/1, v/v/v), 500 µg of biological sample digest were added, and the solution was shaken at 37°C for 30 min. The supernatant was removed by centrifugation and washed with loading buffer several times. Then 10 µL of eluting buffer (0.4 M NH₃·H₂O) was added and incubated at 37°C for 30 min and repeat it again. The eluate was collected, desalted, and lyophilized for further analysis using nano LC-MS/MS.

MALDI-TOF MS analysis

All experiments of glycopeptides from standard protein tryptic digest by CH-Dha@Ti⁴⁺ were recorded by MALDI-TOF MS (Bruker, USA). The instrument was

worked by an advanced Nd:YAG laser (355 nm), with an acceleration voltage (20kV) of TOF and a detection frequency (1000 Hz). Within the detection range of mass-to-charge ratio (1000-5000 Da), DHB (20 mg/mL, ACN/H₂O = 30/70, v/v) was selected as the matrix.

Sample processing

Add 20 μ L of 0.1% FA to the sample to reconstitute, shake to dissolve, centrifuge at 14000 g, and take the supernatant for testing.

Nano LC-MS/MS analysis

Liquid phase A was a 0.1% formic acid aqueous solution, and B was a 0.1% formic acid acetonitrile solution (acetonitrile is 100%). Column Thermo Scientific analytical column (75 μ m \times 25 cm, 5 μ m, 100 \AA , C18) was equilibrated with 95% A liquid. The sample was loaded by the autosampler to the Thermo Scientific EASY trap column (100 μ m \times 2 cm, 5 μ m, 100 \AA , C18), and then separated by the chromatographic column. The relevant liquid gradient was as follows: from 0 min to 40 min, linear gradient of liquid B was from 5% to 28%; from 40 minutes to 42 minutes, the linear gradient of liquid B was from 28% to 90%; and from 42 minutes to 60 minutes, the liquid B was maintained at 90%. The enzymatic hydrolysis products were desalted and separated by capillary high performance liquid chromatography, and then analyzed by mass spectrometry using the Orbitrap Fusion Lumos mass spectrometer (Thermo Finnigan, San Jose, CA). Analysis time: 60min, detection method: positive ion, precursor ion scan range: 375-1800 m/z, primary mass

spectrometry resolution: 120,000 at m/z 200, scan mode: Top-Speed, AGC target: $4e^5$, first-level Maximum IT: 50 ms, Number of scan ranges: 1, Dynamic exclusion: 40.0 s, Data Dependent Mode: Cycle Time, Time between Master Scan: 3s. The mass-to-charge ratios of peptides and peptide fragments were collected according to the following method: the secondary spectrum scan (MS2 scan) was performed at the same time as each primary scan (Master scan), the scanning cycle was 3s, MS2 Activation Type: HCD, secondary mass spectrometry Resolution: 50,000 at m/z 200, Microscans: 1, Level 2 Maximum IT: 105 ms, AGC target: $1e^5$.

Data analysis

The original data for mass spectrometry analysis was a RAW file, and the built-in software Proteome Discoverer 2.4 (Thermo Scientific) was used for library identification and quantitative analysis. The uniprot database is used this time: uniprot_human_20210621_202249.fasta. When searching the library, submitting the RAW file to SequestHT through Proteome Discoverer, selecting the established database, and then searching the database. The search parameters were as follows: monoisotopic mass, trypsin digestion, maximum 2 missing cut sites, peptides charged number: 2⁺, 3⁺ and 4⁺, fixed modification to carbamidomethylation (C), dynamic modification to oxidation (M), Acethyl (protein N-term) and Deamidated [N]. The maximum error of the precursor ion was 10 ppm, and the maximum error of the fragment ion was 0.05 Da. Proteome Discoverer 2.4 performs peptide high confidence screening based on the peptide identification results and outputs the results.

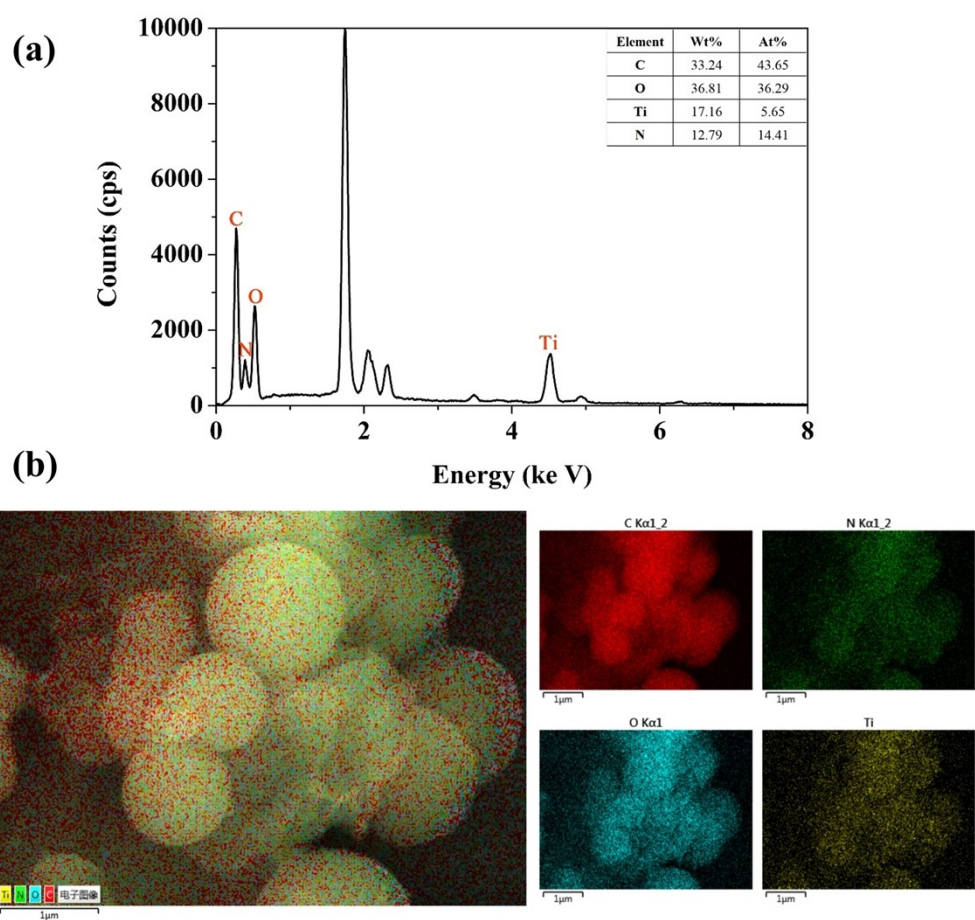


Fig. S1. (a) EDX spectrum of CH-Dha@Ti⁴⁺; (b) elemental mapping spectra of CH-Dha@Ti⁴⁺.

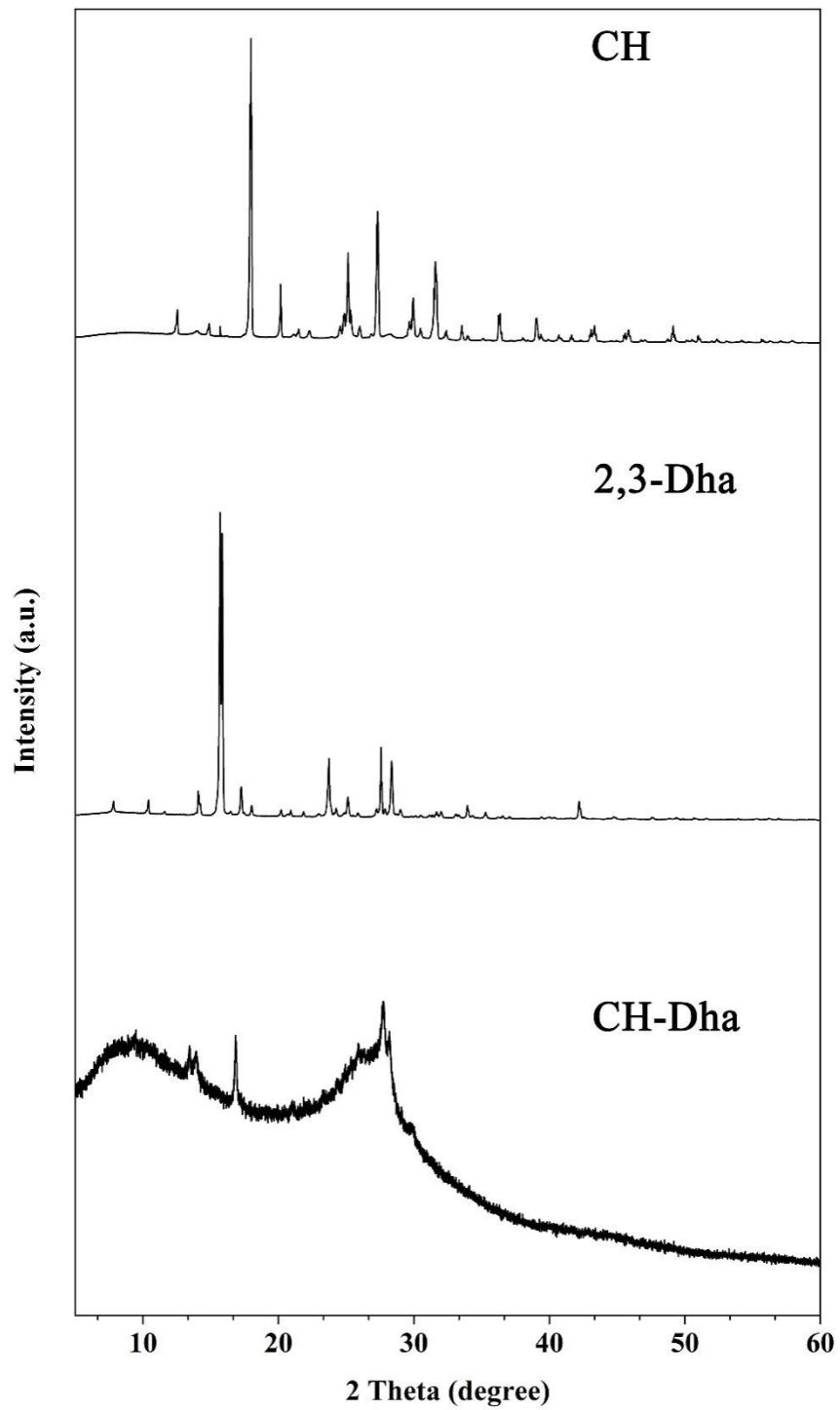


Fig. S2. The XRD patterns of CH, Dha, and CH-Dha.

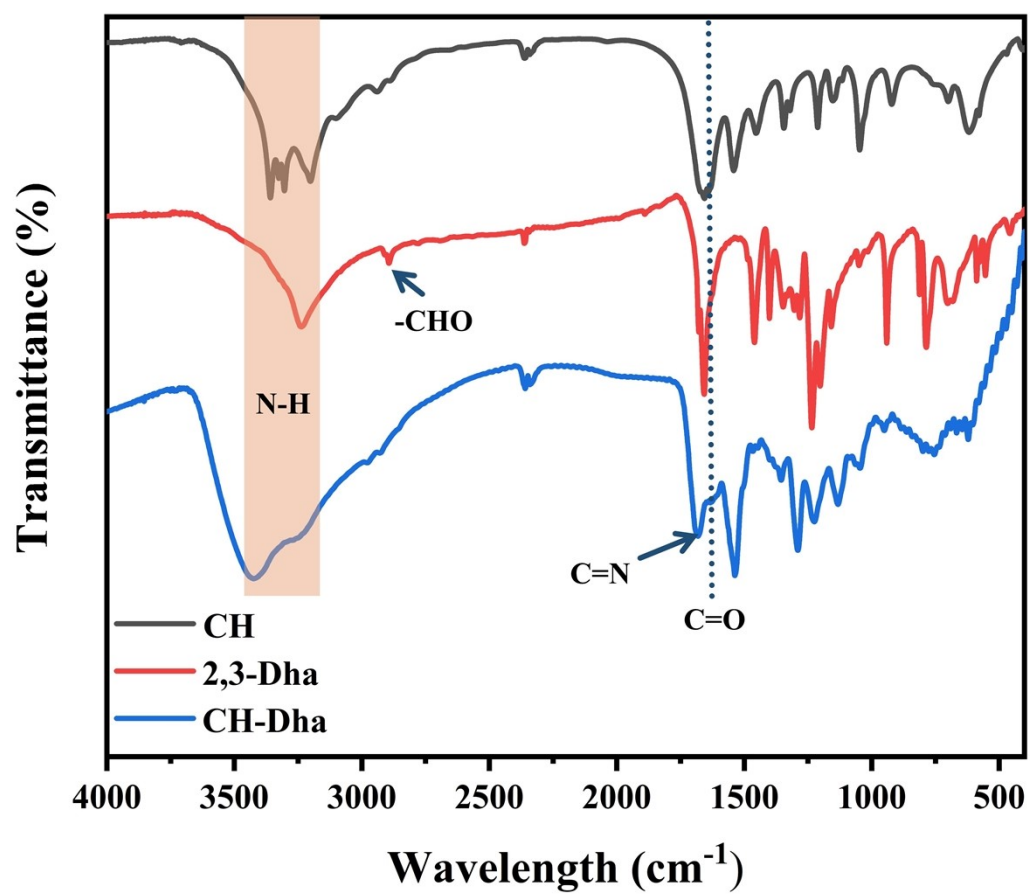


Fig. S3. The FT-IR spectra of CH-Dha@Ti⁴⁺.

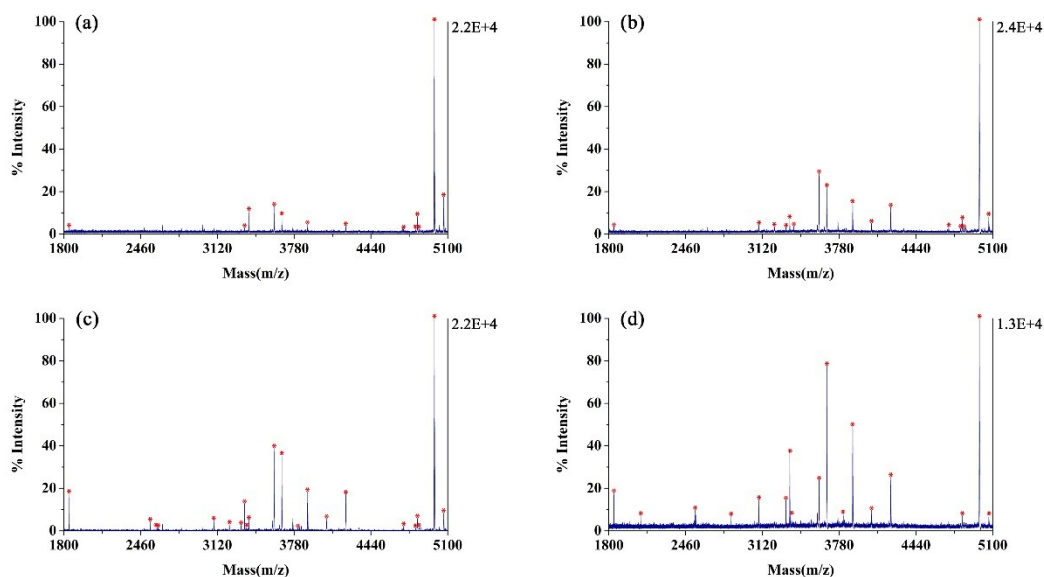


Fig. S4. MALDI-TOF MS spectra of glycopeptides enriched by CH-Dha@Ti⁴⁺ with loading buffers of different ACN contents: (a) ACN/H₂O/TFA=80/19/1; (b) ACN/H₂O/TFA=85/14/1; (c) ACN/H₂O/TFA=90/9/1; and (d) ACN/H₂O/TFA=95/4/1. Glycopeptides peaks are signed as “*”.

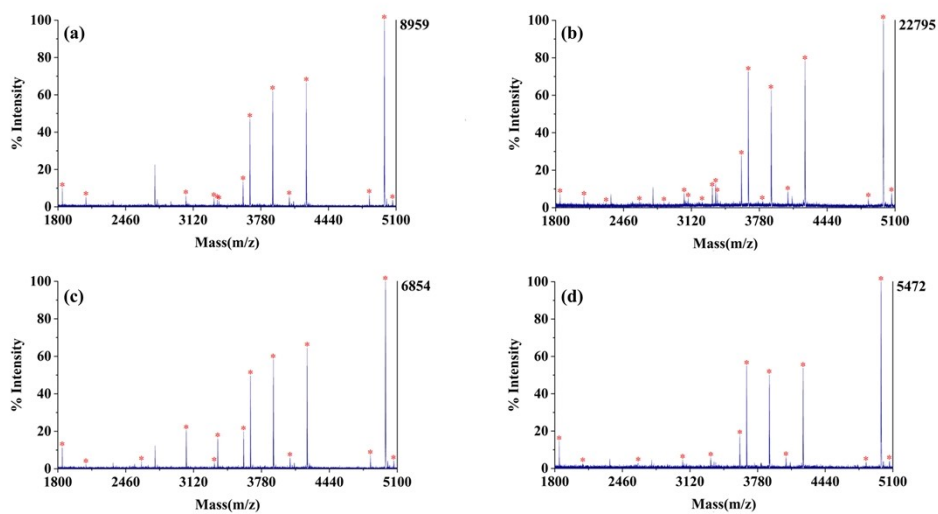


Fig. S5. MALDI-TOF MS spectra of glycopeptides enriched by CH-Dha@Ti⁴⁺ with eluting buffers of different ACN contents: (a) ACN/H₂O/TFA=15/84.9/0.1; (b) ACN/H₂O/TFA=30/69.9/0.1; (c) ACN/H₂O/TFA=45/54.9/0.1; and (d) ACN/H₂O/TFA=60/39.9/0.1. Glycopeptides peaks are signed as “*”.

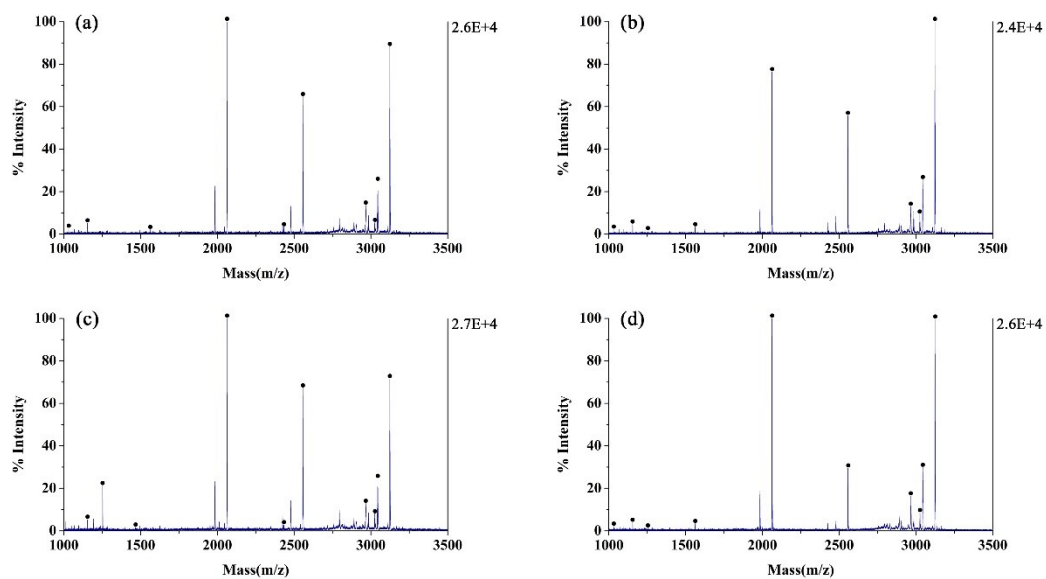


Fig. S6. MALDI-TOF MS spectra of phosphopeptides enriched by CH-Dha@Ti⁴⁺ with loading buffers of different ACN contents: (a) ACN/H₂O/TFA=50/49/1; (b) ACN/H₂O/TFA=65/34/1; (c) ACN/H₂O/TFA=80/19/1; and (d) ACN/H₂O/TFA=95/4/1. Phosphopeptides peaks are signed as “●”.

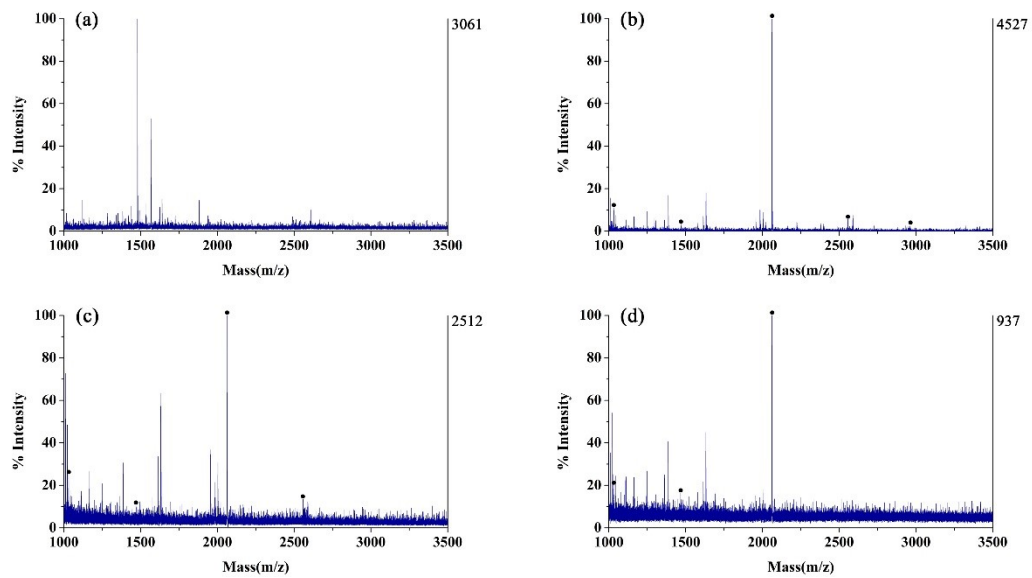


Fig. S7. MALDI-TOF MS spectra of the mixture of β -casein tryptic digest and BSA tryptic digest with a mass ratio of (a) 1:100 before the enrichment, (b) 1:100, (c) 1:500, and (d) 1:1000 after the enrichment by CH-Dha@Ti⁴⁺. Phosphopeptides peaks are signed as “●”.

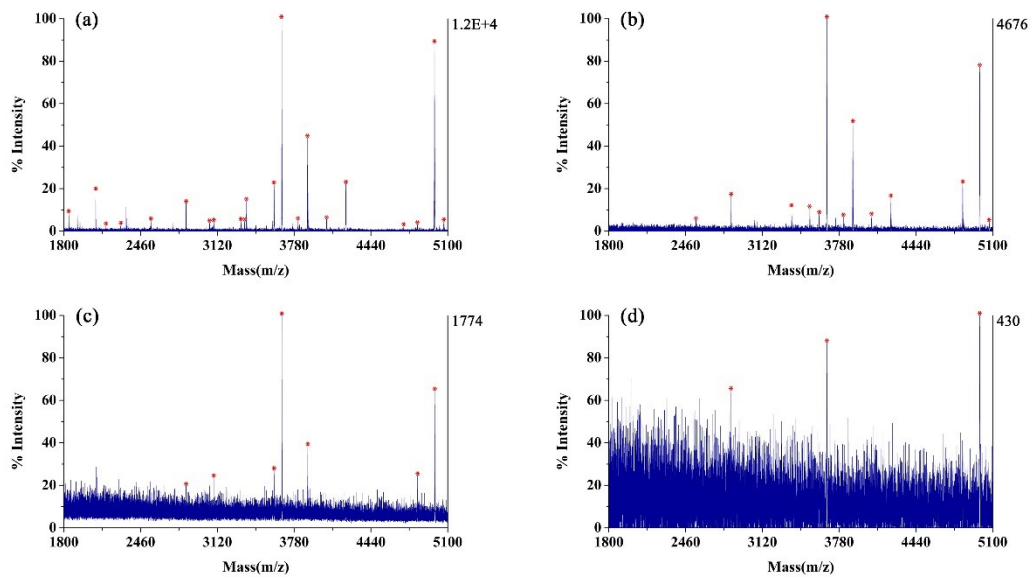


Fig. S8. MALDI-TOF MS spectra of HRP tryptic digest with different concentrations after the enrichment by CH-Dha@Ti⁴⁺: (a) 100 fmol/ μ L, (b) 10 fmol/ μ L, (c) 1 fmol/ μ L and (d) 0.05 fmol/ μ L. Glycopeptides peaks are signed as “**”.

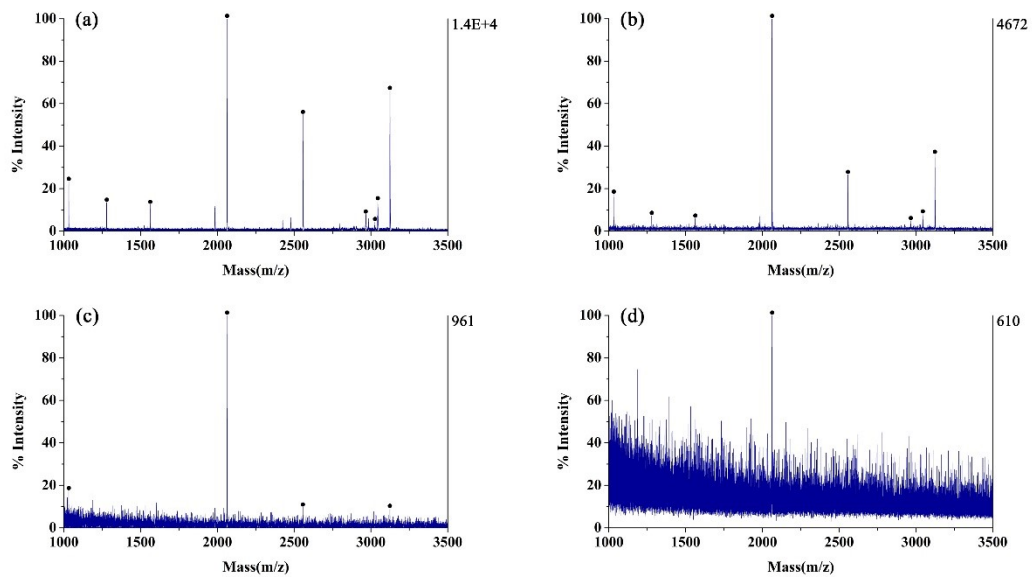


Fig. S9. MALDI-TOF MS spectra of β -casein tryptic digest with different concentrations after the enrichment by CH-Dha@Ti⁴⁺: (a) 200 fmol, (b) 20 fmol, (c) 2 fmol and (d) 0.2 fmol. Phosphopeptides peaks are signed as “●”.

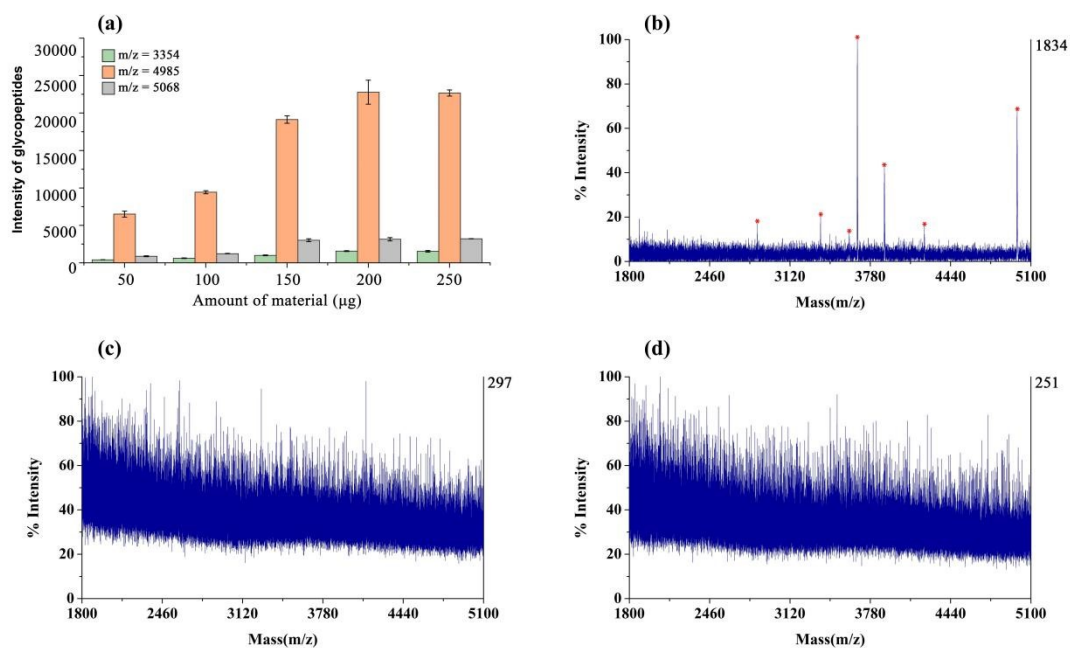


Fig. S10. (a) The loading capacity of CH-Dha@Ti⁴⁺ on glycopeptides. MALDI-TOF MS spectra of the supernatant from the loading capacity experiment after the enrichment by CH-Dha@Ti⁴⁺: (b) 150 µg, (c) 200 µg, (d) 250 µg. Glycopeptides peaks are signed as “*”.

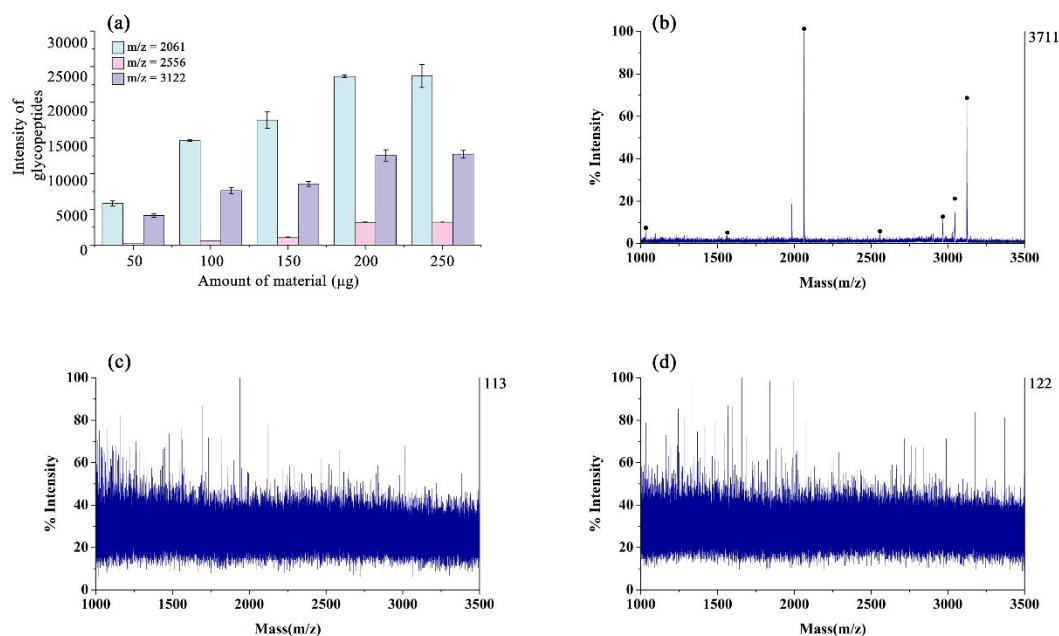


Fig. S11. (a) The loading capacity of CH-Dha@Ti⁴⁺ on phosphopeptides. MALDI-TOF MS spectra of the supernatant from the loading capacity experiment after the enrichment by CH-Dha@Ti⁴⁺: (b) 150 µg, (c) 200 µg, (d) 250 µg. Phosphopeptides peaks are signed as “●”.

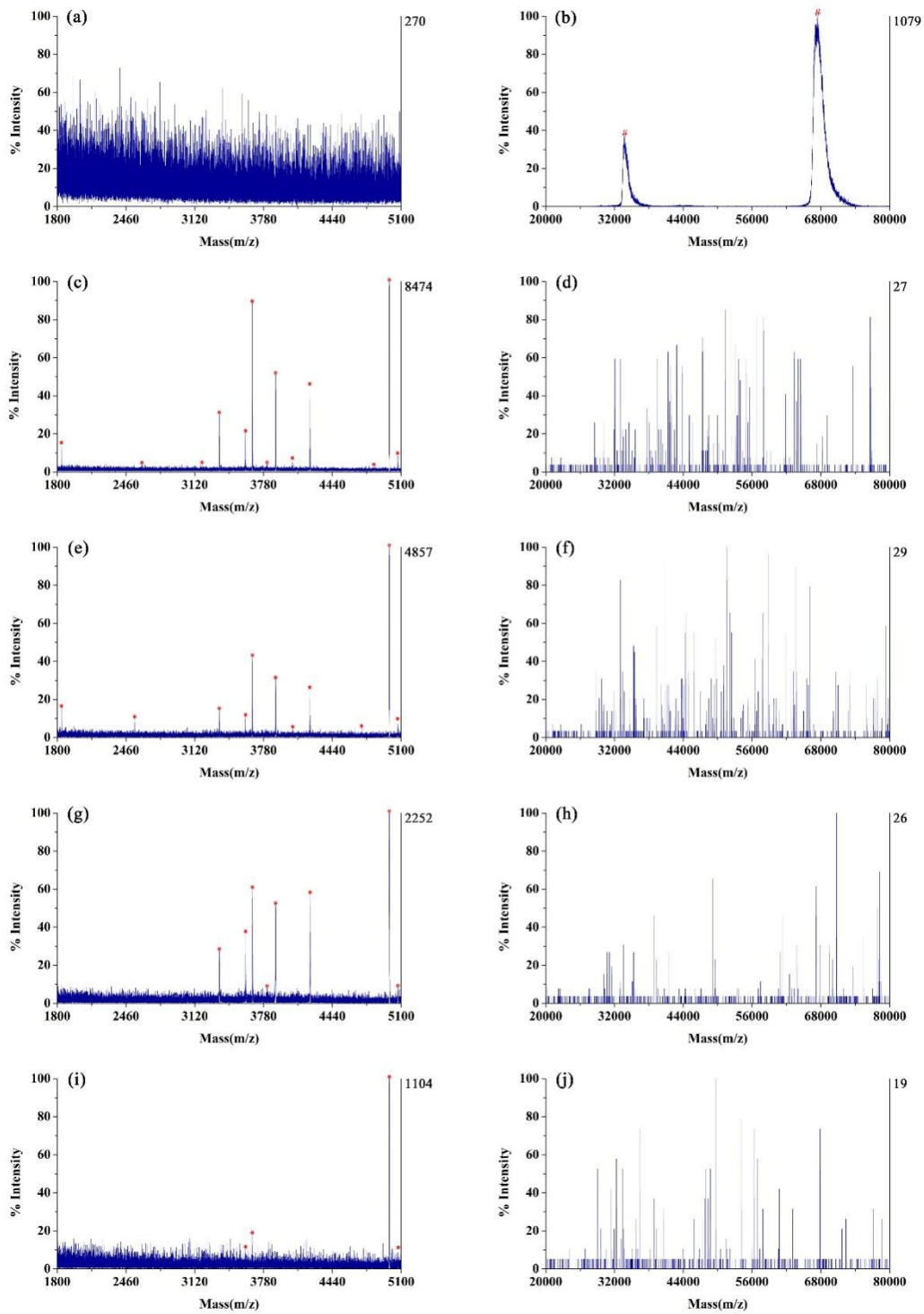


Fig. S12. MALDI-TOF MS spectra of the mixture of HRP tryptic digest and BSA protein with a mass ratio of (a, b) 1:100 before the enrichment, (c, d) 1:100, (e, f) 1:500, (g, h) 1:2000, and (i, j) 1:10000 after the enrichment by CH-Dha@Ti⁴⁺. Asterisk (*) indicates peaks associated with glycopeptides.

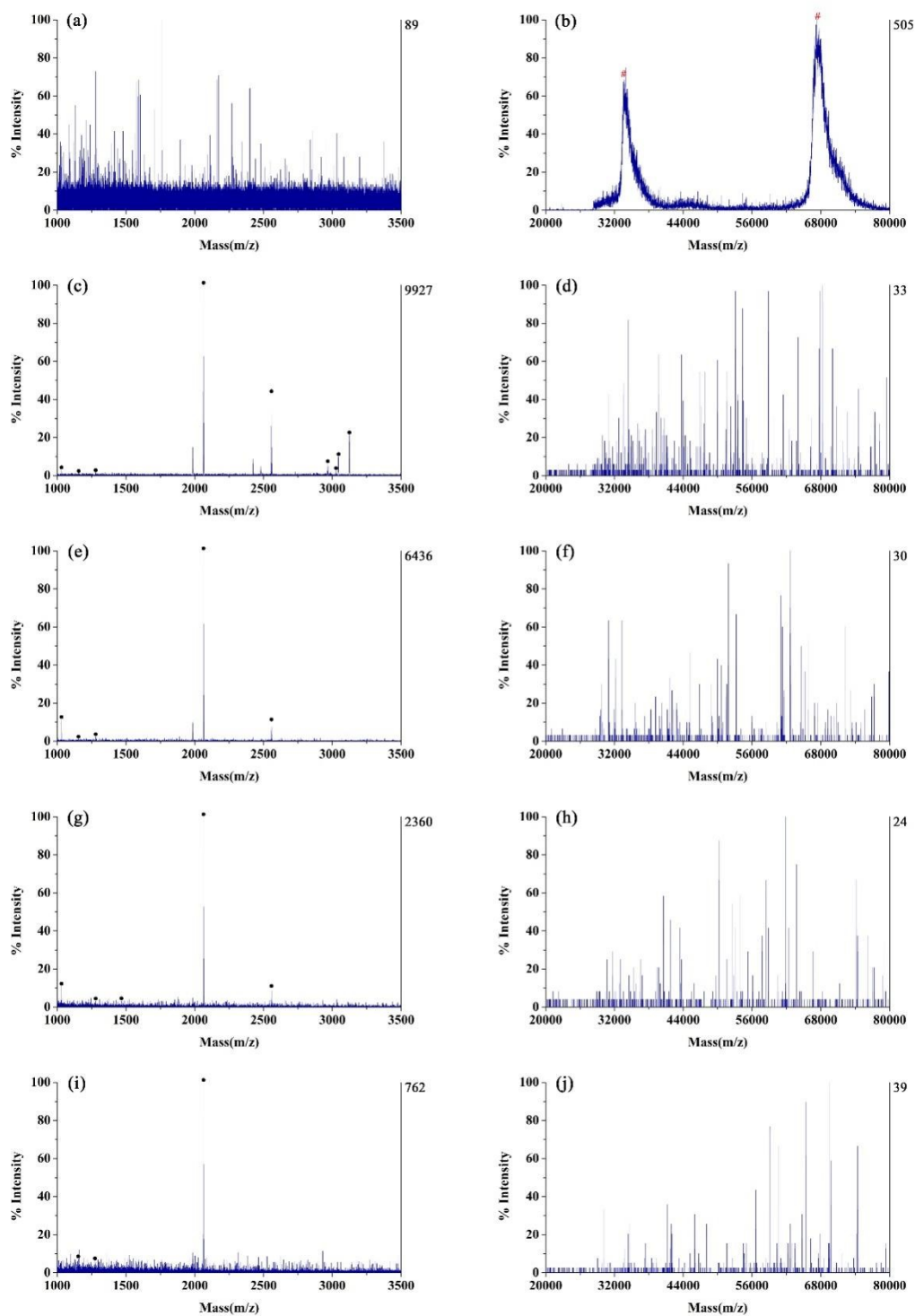


Fig. S13. MALDI-TOF MS spectra of the mixture of β -casein tryptic digest and BSA protein with a mass ratio of (a, b) 1:100 before the enrichment, (c, d) 1:100, (e, f) 1:500, (g, h) 1:2000, and (i, j) 1:10000 after the enrichment by CH-Dha@Ti⁴⁺. Phosphopeptides peaks are signed as “●”.

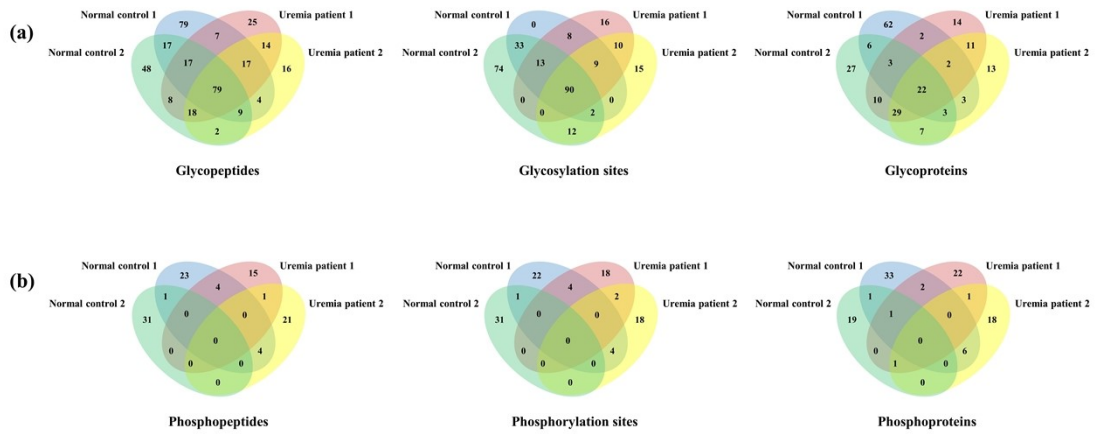


Fig. S14. Venn diagram of (a) glycopeptides, glycosylation sites, and proteins and (b) phosphopeptides, phosphorylation sites, and phosphoproteins identified in each isolated serum sample of uremia patients and normal controls.

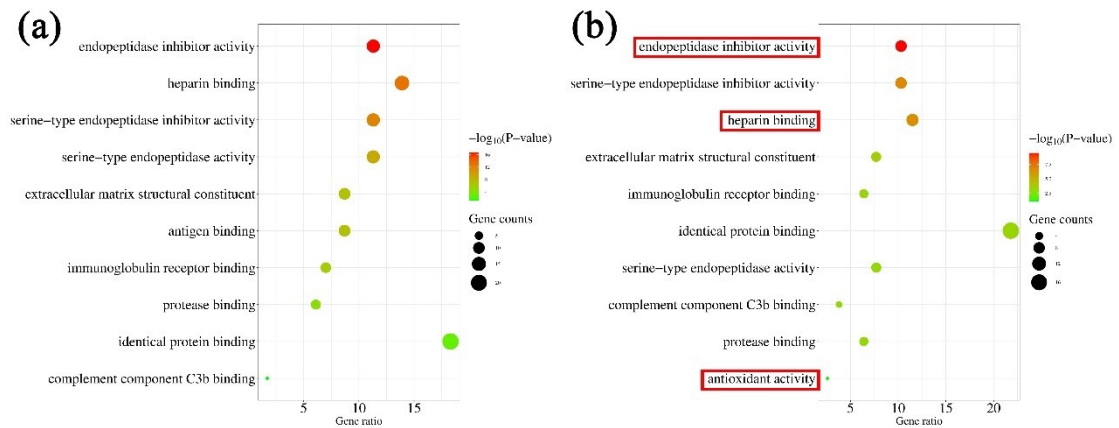


Fig. S15. The GO analysis of the molecular function based on the identified glycoproteins from the serum of (a) normal controls and (b) uremia patients.

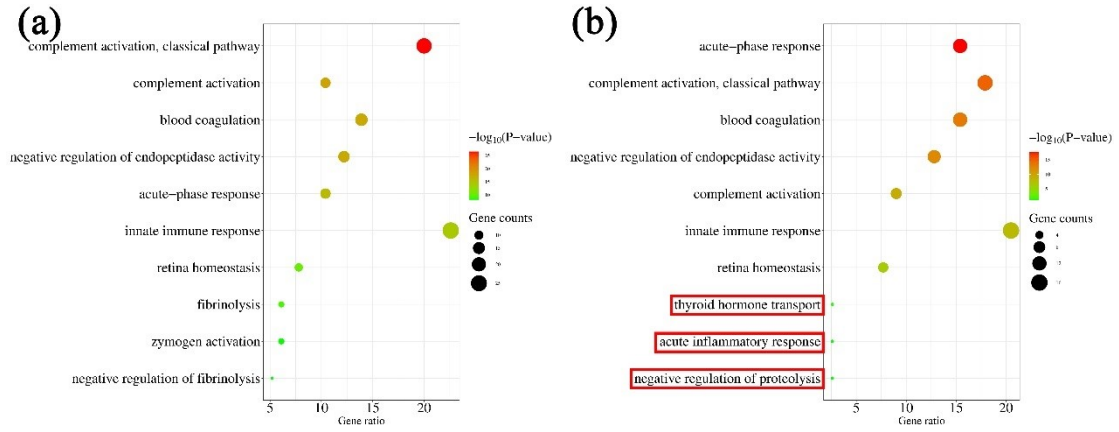


Fig. S16. The GO analysis of the biological process based on the identified glycoproteins from the serum of (a) normal controls and (b) uremia patients.

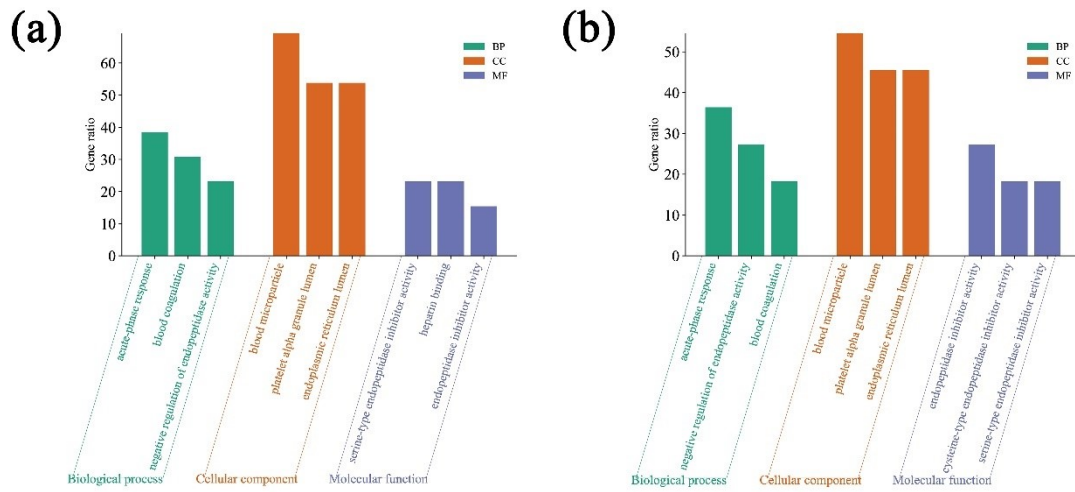


Fig. S17. GO analysis for the identified phosphoproteins from serum of normal controls and uremia patients.

Table S1. Detailed information of the observed glycopeptides derived from HRP tryptic digest after the enrichment by CH-Dha@Ti⁴⁺. N# denotes the N-glycosylation site.

No.	Observed m/z	Sequence composition	Glycan	Amino acid sequence
1	1843.0	XylMan3FucGlcNAc2		NVGLN#R
2	2544.5	XylMan3FucGlcNAc2		SSPN#ATDTIPLVR
3	2591.5	XylMan3FucGlcNAc2		PTLN#TTYLQTLR
4	2612.5	XylMan3GlcNAc2		MGN#ITPLTGTQGQIR
5	3048.9	XylMan2GlcNAc2		SFAN#STQTFNFAFVEAMDR
6	3088.8	XylMan3FucGlcNAc2		GLCPLNGN#LSALVDFDLR
7	3190.9	XylMan2FucGlcNAc2		SFAN#STQTFNFAFVEAMDR
8	3223.8	Man3FucGlcNAc2		SFAN#STQTFNFAFVEAMDR
9	3323.9	XylMan3FucGlcNAc2		QLTPTFYDNSCPN#VSNIVR
10	3354.9	XylMan3FucGlcNAc2		SFAN#STQTFNFAFVEAMDR
11	3369.8	XylMan3FucGlcNAc2		SFAN#STQTFNFAFVEAM*DR
12	3390.9	XylMan6Fuc2GlcNAc4		DSFRNVGLN#R
13	3606.1	XylMan3FucGlcNAc2		NQCRGLCPLNGN#LSALVDFDLR
14	3672.2	XylMan3FucGlcNAc2		GLIQSDQELFSSPN#ATDTIPLVR
15	3813.3	XylMan3FucGlcNAc2		LHFHDCFVNGCDASILLDN#TTSFR
16	3895.3	XylMan3FucGlcNAc2		LHFHDCFVNGCDASILLDN#TTSFR
17	4057.3	XylMan3GlcNAc2		QLTPTFYDNSC(AAVESACPR)PN#VSNIVR-H ₂ O
18	4223.6	XylMan3FucGlcNAc2		QLTPTFYDNSC(AAVESACPR)PN#VSNIVR
19	4720.9	Man3FucGlcNAc2, Man3FucGlcNAc2		LYN#FSNTGLPDPTLN#TTYLQTLR
20	4824.1	XylMan2FucGlcNAc2, XylMan2GlcNAc2		LYN#FSNTGLPDPTLN#TTYLQTLR
21	4838.1	XylMan3FucGlcNAc2, XylMan3GlcNAc2		LYN#FSNTGLPDPTLN#TTYLQTLR
22	4854.1	Man3FucGlcNAc2, XylMan3FucGlcNAc2		LYN#FSNTGLPDPTLN#TTYLQTLR
23	4985.2	XylMan3FucGlcNAc2, XylMan3FucGlcNAc2		LYN#FSNTGLPDPTLN#TTYLQTLR
24	5068.1	Xyl Man3GlcNAc2		QLTPTFYDNSC(AAVESACPR)PN#VSNIVR

Table S2. The detailed information of phosphopeptides derived from β -casein tryptic digest after enrichment by CH-Dha@Ti⁴⁺. pS: Phosphorylation site.

No.	Observed m/z	Amnio acid Sequence	Numbers of Phosphorylation site
1	1031.5	FQ[pS]EEQQQTEDELQDK	1
2	1154.8	[pS] [pS]EEKFLR	1
3	1252.7	TVD[Mo]ME[pS]TEVF	1
4	1279.1	FQ[pS]EEQQQTEDELQDKIHFP	1
5	1466.7	TVDME[pS]TEVFTK	1
6	1964.0	FQ[pS]EEQQQTEDELQDK	1
7	2062.0	FQ[pS]EEQQQTEDELQDK	1
8	2556.3	FQ[pS]EEQQQTEDELQDKIHFP	1
9	2966.3	ELEELNVPGEIVE[pS]L[pS][pS][pS]EESITR	4
10	3024.6	FPQYLQ[pY]L[pY]QGPIVLNPWDQVQR	2
11	3042.6	RELEELNVPGEIVE[pS]L[pS][pS][pS]EESITR	4
12	3122.6	RELEELNVPGEIVE[pS]L[pS][pS][pS]EESITR	4

Table S3. The RSDs of three parallel trials on the load capacity of CH-Dha@Ti⁴⁺ on glycopeptides.

Amount of material	m/z = 3354		m/z = 4985		m/z = 5068	
	Average ± S. D.	RSD (%)	Average ± S. D.	RSD (%)	Average ± S. D.	RSD (%)
50 µg	405.3 ± 7.4	1.8	6507.3 ± 405.0	6.2	887.3 ± 60.6	6.8
100 µg	616.0 ± 44.3	7.2	9427.3 ± 205.1	2.2	1233.7 ± 26.6	2.2
150 µg	998.0 ± 56.6	5.7	19123.3 ± 491.3	2.6	3014.0 ± 194.1	6.4
200 µg	1570.7 ± 60.5	3.9	22781.3 ± 1597.8	7.0	3146.3 ± 220.6	7.0
250 µg	1538.3 ± 104.6	6.8	22669.7 ± 407.0	1.8	3219.3 ± 20.5	0.6

Table S4. The RSDs of three parallel trials on the load capacity of CH-Dha@Ti⁴⁺ on phosphopeptides.

Amount of material	m/z = 2061.9		m/z = 2556.8		m/z = 3122.5	
	Average ± S. D.	RSD (%)	Average ± S. D.	RSD (%)	Average ± S. D.	RSD (%)
50 µg	5841.0 ± 325.1	5.6	183.0 ± 4.4	2.4	4127.7 ± 228.9	5.5
100 µg	14642.0 ± 106.1	0.7	621.3 ± 30.7	4.9	7646.0 ± 434.7	5.7
150 µg	17523.3 ± 1131.0	6.5	1118.0 ± 53.0	4.7	8574.3 ± 343.6	4.0
200 µg	23631.7 ± 177.5	0.8	3195.7 ± 96.6	3.0	12551.7 ± 782.0	6.2
250 µg	23689.3 ± 1625.1	6.9	3211.7 ± 95.6	3.0	12749.0 ± 517.2	4.1

Table S5. Enrichment efficiency comparison with previously reported materials. G: for glycopeptides. P: for phosphopeptides.

Materials	LOD (fmol)	Selectivity (G:HRP:BSA/ P:β-casein:BSA)	Number of peptides from serum	
MnZnS@G6P	G: 5	G: 1:1000	G: 139	[1]
mMOF@Au@GSH	G: 5000	G: 1:100	G: 273	[2]
Fe ₃ O ₄ @CS@Au-l-Cys	G: 5000	G: 1:1000	G: 63	[3]
Hollow TiO ₂ Spheres	P: 0.2	P: 1:1500	P: 25	[4]
CTs@DHA@Ti ⁴⁺	P: 2	P: 1:2000	P: 14	[5]
β-CD-COF@Ti ⁴⁺	P: 0.5	P: 1:1000	P: 29	[6]
mTiO ₂ @AuCG	G: 0.1 P: 0.2	G: 1:5000 P: 1:1000	G: 167 P: 14	[7]
hydrazide-POPs-Ti ⁴⁺	G: 10 P: 0.5	G: 1:1000 P: 1:2000	G: 201 P: 26	[8]
mGO/CS	G: 100 P: 50	G: 1:100 P: 1:200	G: 83 P: /	[9]
CH-Dha@Ti ⁴⁺	G: 5 P: 0.2	G/P: 1:10000	G: 294 P: 63	This work

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Table S6. Details information of the identified glycopeptides enriched by CH-Dha@Ti⁴⁺ from serum trypsin digests. n: N-glycosylation site.

No.	Protein Group Accessions	Sequence	MH ⁺ [Da]
Normal control 1			
1	P00738	QLVEIEKVVLPnYSQVDIGLIK	2635.471
2	P19652	QNQcFYnSSYLNvQR	1921.850
3	P01009	QLAHQSnSTNIFFSPVSIATAFAMLSLGTK	3198.614
4	P01009	QLAHQSnSTNIFFSPVSIATAFAMLSLGTK	3182.619
5	P19652	QnQcFYnSSYLNvQR	1922.834
6	P04114	QVFPGLnYcTSGAYSnASSTDSASYPLTGDTR	3552.538
7	P04114	QVFPGLnYcTSGAYSnASSTDSASYPLTGDTR	3551.554
8	P04114	QTVnLQLQPYSLVTTLNSDLK	2376.266
9	P02787	QQHLFGSnVTDcSGnFcLFR	2517.092
10	P02787	QQHLFGSnVTDcSGnFcLFR	2516.108
11	P06681	QSVPAHFVALnGSK	1455.759
12	P11597	nVSEDLPLPTFSPTLLGDSR	2159.087
13	P0C0L4; P0C0L5	nTTcQDLQIEVTVK	1649.805
14	P01011	NVIFSPLSISTALAFSLGAHnTTLTEILK	3172.750
15	P02768	QEPERnEcFLQHK	1715.781
16	P02763	QDQcIYnTTYLnVQREnGTISR	2676.221
17	P02763	QDQcIYnTTYLnVQREnGTISR	2675.237
18	P02763	QDQcIYnTTYLnVQR	1917.865
19	P02763	QDQcIYnTTYLNvQR	1916.881
20	Q96IY4	QVHFFVnASDvDNVK	1719.834
21	P04114	QVLFLDTVYgncSTHFTVK	2230.085

22	P01023	SLGnVnFTVSAEAELESQELcGTEVPSVPEHGRK	3543.691
23	P01023	SLGnVnFTVSAEAELESQELcGTEVPSVPEHGR	3415.596
24	P01023	SLGNVnFTVSAEAELESQELcGTEVPSVPEHGR	3414.612
25	Q02080	RSDLPGGLAGPRGGLnTSR	1881.989
26	P01042	ITYSIVQTncSK	1414.688
27	P22792	LYLGSNnLTALHPALFQnLSK	2316.223
28	P04003	LSVDKDQYVEPEEnVTIQcDSGYGVVGPQSITcSGnR	3973.807
29	Q03591	LQNNEnnIScVER	1591.702
30	Q03591	LQNNENnIScVER	1590.718
31	Q13201	LQnLTLPTnASIK	1414.779
32	P03952	LQAPLnYTEFQKPIcLPSK	2248.168
33	Q14624	LPTQnITFQTESSVAEQEAEFQSPK	2810.337
34	P05156	LSDLSInSTEcLHVHcR	2041.943
35	O75882	ISnSSDTVEcEcSEnWK	2045.806
36	P01833	LSLLEEPGnGTFTVILNQLTSR	2403.277
37	P01876; P0DOX2	LSLHRPALEDLLLGSSEAnLTcTLTGLR	2964.582
38	P51884	LSHNELADSGIPGnSFnVSSLVELDLSYNK	3221.548
39	P22792	LYLGSnnLTALHPALFQnLSK	2317.207
40	P03952	IYPGVDFGGEELnVTFVK	1984.990
41	Q9Y6R7	NPNnDQVFPnGTLAPSIPIWGGSWR	2739.316
42	Q9Y6R7	NPNNDQVFPnGTLAPSIPIWGGSWR	2738.332
43	P04004	nnATVHEQVGGPSLTSDLQAQSK	2383.137
44	P04004	NnATVHEQVGGPSLTSDLQAQSK	2382.153
45	P00739; P00738	nLFLnHSEnATAK	1461.686
46	P00739; P00738	NLFLnHSEnATAK	1460.702
47	P00739; P00738	NLFLnHSEnATAK	1459.718
48	P02671	nPSSAGSWnSGSSGPGSTGnR	1966.801
49	P02751-1	NSITLTnLTPGTEYVVSIVALnGR	2534.335
50	P43251	NPVGLIGAEEnATGETDPShSK	2094.994
51	O75882	nHScSEGQISIFR	1535.691
52	P00739; P00738	mVSHHnLTTGATLINEQWLLTTAK	2696.371
53	P00739; P00738	MVSHHnLTTGATLINEQWLLTTAK	2680.376
54	P08603	MDGASnVTcINSR	1425.610
55	P55058	IYSnHSALESLALIPLQAPLK	2279.265
56	P03952	IYSGILnLSDITK	1437.784
57	Q06033	NAHGEEKEEnLTAR	1469.698
58	Q92954	nGTLVAFR	878.473
59	P01854	nGTLTVTSTLPVGTR	1517.817
60	O00391	nGSGAVFPVAGADVQTLR	1759.897
61	P00734	nFTENDLLVR	1221.611
62	P02768	nEcFLQHK	1076.483

63	P09871	ncGVncSGDVFTALIGEIASPnYPKYPENSR	3529.589
64	P09871	ncGVncSGDVFTALIGEIASPNYPKPYPENSR	3528.605
65	P43652	nccNTENPPGcYR	1642.604
66	Q6UXB8	SLPNFPnTSATAnATGGR	1777.835
67	P55058	VSnVScQASVSR	1294.606
68	P01023	VSnQTLSLFFTlQDVPVR	2164.165
69	P36955	VTQnLTLIEESLTSEFIHDIDR	2574.293
70	P07996	VVnSTTGPEHLR	1367.691
71	P27169	VTQVYAE nGTVLQGSTVASVYK	2315.177
72	P00738	VVLHPnYSQVDIGLIK	1795.995
73	P05155	VLSnNSDANLELINTWVAK	2102.076
74	P04196	VIDFncTTSSVSSALAnTK	2016.943
75	P04196	VIDFncTTSSVSSALANTK	2015.959
76	P05155	VLSnnSDANLELINTWVAK	2103.060
77	P04114	VHnGSEILFSYFQDLVITLPFELR	2838.471
78	P05155	VGQLQLSHnLSLVILVPQnLK	2315.333
79	Q6UX71	VnLSFDFPFYGHFLR	1859.912
80	P01833	VPGnVTAVLGETLK	1398.784
81	P04114	VNQNLVYESGSLnFSK	1799.881
82	P05155	VGQLQLSHnLSLVILVPQNLK	2314.349
83	Q9Y6R7	YLPVnSLLTSDcSER	1841.859
84	P01009	YLGnATAIFFLPDEGKLQHLENELTHDIITK	3541.821
85	P01009	YLGnATAIFFLPDEGK	1756.879
86	P01871	YKnnSDISSTR	1286.586
87	P01871	YKnNSDISSTR	1285.602
88	P00734	YPHKPEInSTTHPGADLQENFcR	2712.247
89	P01042	YNSQnQSNNQFVLYR	1875.862
90	P01011	YTGnASALFILPDQDK	1753.864
91	P02763; P19652	WFYIASAFRnEEYnK	1939.886
92	P02763; P19652	WFYIASAFRN EEEYnK	1938.902
93	P41222	WFSAGLASnSSWLR	1582.765
94	Q16609	WEYcnLTR	1142.494
95	P02749	VYKPSAGnNSLYR	1470.722
96	P02749	VYKPSAGnNSLYR	1469.738
97	P04114	YDFnSSMLYSTAK	1527.667
98	P43652	YAEDKF nETTEK	1475.654
99	P01008	WVSnKTEGR	1077.532
100	P06276	WSDIWnATK	1121.526
101	Q9Y6R7	VVTVAALGTnISIHKDEIGK	2066.149
102	P02788	TAGWnVPIGTLRPFLnWTGPPEPIEAAVAR	3232.679
103	P01859	TKPREEQFnSTFR	1640.803
104	P01871	THTnISESHPnATFSAVGEASl cEDDWnSGER	3521.467
105	P01871	THTnISESHPnATFSAVGEASl cEDDWNSGER	3520.483

106	P0DOX6	THTnISESHPhnATFSAVGEASlcEDDDWSGER	3521.467
107	P01023	TEVSSNHVLIYLDKVSnnQTLSLFFTVLQDVPVR	3762.995
108	P29622	SQILEGLGFnLTELSESDVHR	2345.162
109	P00751	SPYYnVSDEISFHcYDGYTLR	2587.108
110	P08603	SPDVInGSPISQK	1342.685
111	P01008	SLTFnETYQDISELVYGAK	2179.044
112	P80188	SYnVTSVLFR	1186.610
113	P02790	SWPAVGncSSALR	1405.653
114	P41222	SVVAPATDGGLnLTSTFLR	1920.007
115	P02763; P19652	SVQEIQATFFYFTPhnKTEDTIFLR	2896.440
116	P0DOX6; P01871	STGKPTLYnVSLVMSDTAGTcY	2366.089
117	P0DOX5	TKPREEQYnSTYR	1672.793
118	P02679	VDKDLQSLEDILHQVEnKTSEVK	2668.368
119	P02679	VDKDLQSLEDILHQVEnK	2124.082
120	P02765	VcQDcPLLAPLnDTR	1772.831
121	P12259	TWnQSIALR	1089.569
122	P01024	TVLTPATNHMGnVTFTIPANR	2256.144
123	O75636	VELEDFnGnR	1194.527
124	O75636	VELEDFNGnR	1193.543
125	O75044	TnATSPGVNSSTSPQSTDKScTV	2327.030
126	P0DOX2	TPLTAnITK	959.541
127	P04275	TTcnPcPLGYKEEnNTGEccGR	2619.021
128	P05155	DTFVnASR	910.426
129	Q04756	DSVSVVLGQHFFnR	1605.802
130	P01861	EEQFnSTYR	1174.501
131	P01859	EEQFnSTFR	1158.506
132	P10909	EDALnETR	948.427
133	P25311	DIVEYYnDSnGSHVLQGR	2067.925
134	P25311	DIVEYYNDSnGSHVLQGR	2066.941
135	P02679	DLQSLEDILHQVEnK	1781.892
136	P43652	DIENFnSTQK	1196.543
137	P02751-1	DQcIVDDITYNVnDTFHK	2197.971
138	P14151	DnYTDLVAIQNK	1394.680
139	P06276	DnNSIITR	933.464
140	P01860	EEQYnSTFR	1174.501
141	P0DOX5	EEQYnSTYR	1190.496
142	P02743	ESVTDHVnLITPLEKPLQnFTLcFR	2973.503
143	P02743	ESVTDHVnLITPLEKPLQnFTLcFR	2972.519
144	P20851	EWDnTTTEcR	1312.511
145	P00450	EHEGAIYPDnTTDFQR	1893.825
146	P49908	EGYSnISYIVVNHQGISSR	2124.036
147	P00450	ELHHLQEQnVSNAFLDK	2022.988
148	P00450	EnLTAPGSDSAVFFEQGTTR	2127.983

149	P01591	EnISDPTSPLR	1229.601
150	P06276	EnETEIIK	976.483
151	P00450	ELHHLQEQnVSNAFLDKGEFYIGSK	2904.416
152	P00450	AGLQAFFQVQEcnK	1640.774
153	Q9HDC9	AGPnGTLFVADAYK	1424.706
154	P22792	AFGSNPnLTK	1049.526
155	P51884	AFEnVTDLQWLILDHNLENSK	2613.320
156	P02766	ALGISPFHEHAEVVFTAnDSGPRR	2608.290
157	P02766	ALGISPFHEHAEVVFTAnDSGPR	2452.189
158	O75882	AATcINPLnGSVcERPAnHSAK	2369.097
159	Q08380	AAIPSALDTnSSK	1275.643
160	P02765	AALAAFNAQnNnGSNFQLEEISR	2366.137
161	P01009	ADTHDEILEGLNFnLTEIPEAQIHEGFQELLR	3692.808
162	P05090	ADGTVnQIEGEATPVnLTEPAKLEVK	2725.378
163	P05090	ADGTVnQIEGEATPVnLTEPAKLEVK	2724.394
164	P05090	ADGTVnQIEGEATPVnLTEPAK	2256.088
165	P05090	ADGTVnQIEGEATPVnLTEPAK	2255.104
166	P49908	cGncSLTTLK	1154.518
167	P02787	cGLVPVLAENYnK	1477.736
168	Q04756	cFLGnGTGYR	1145.504
169	P23142	cATPHGDnASLEATFVK	1818.833
170	O75882	cInQSIcEK	1152.502
171	Q08380	DAGVVcTnETR	1222.537
172	P00736	cnYSIR	813.356
173	P02748	AVnITSENLIDDVVSLIR	1972.060
174	Q86VB7	APGWAnSSAGSGR	1218.550
175	Q9Y5Y7	ANQQLnFTEAK	1264.617
176	P02790	ALPQPQnVTSLLGcTH	1736.864
177	P05164	ALLPFDNLHDDPcLLTnR	2125.038
178	P08185	AVLQLNEEGVDTAGSTGVTLnLTSKPIILR	3110.694
179	P10909	LAnLTQGEDQYYLR	1684.818
180	P01876	LAGKPTHVnVSVVMAEVDGTcY	2348.126
181	P04114	LATALSLSNKFVEGSHnSTVSLTTK	2606.367
182	P04278	LDVDQALnR	1044.532
183	O75882	IDSTGnVTNELR	1319.644
184	P02751-1	LDAPTNLQFVnETDSTVLVR	2233.135
185	Q9Y5Y7	KANQQLnFTEAK	1392.712
186	P0DOX2	HYTnSSQDVTVPcR	1664.733
187	P01011	KLINDYVKnGTR	1421.775
188	P02750	KLPPGLLAnFTLLR	1553.941
189	P02765	KVcQDcPLLAPLnDTR	1900.926
190	P08603	IPcSQPPQIEHGTInSSR	2021.971
191	P01042	LNAEnnATFYFK	1433.658
192	P01042	LNAENnATFYFK	1432.674

193	P02749	LGnWSAMPScK	1251.550
194	P20851	LGHCPDPVLVnGEFSSSGPVnVSDK	2613.214
195	P20851	LGHcPDPVLVNGEFSSSGPVnVSDK	2612.230
196	P02749	LGnWSAMPScK	1267.545
197	P01008	LGAcnDTLQQLMEVFKFDTISEK	2688.290
198	P01008	LGAcnDTLQQLMEVFK	1867.893
199	P04275	IGEADFnR	922.426
200	P51884	LGSFEGLVnLTFIHLQHNR	2196.156
201	P04114	FVEGSHnSTVSLTTK	1607.791
202	P0DOX5	FTISRnDSK	1068.532
203	P01033	FVGTPEVnQTTLYQR	1753.876
204	P04003	FSLLGHASIScTVEnETIGVWRPSPPTcEK	3373.619
205	P07357	GGSSGWSGGLAQnR	1334.608
206	Q96PD5	GFGVAIVGnYTAALPTEAALR	2092.107
207	P01023	GcVLLSYLnETVTVSASLESVR	2398.217
208	P19823	GAFISnFSMTVDGK	1474.688
209	P0C0L4; P0C0L5	FSDGLESnSSTQFEVK	1775.797
210	P05156	FLnnGTCTAEGK	1313.568
211	P05156	FLNnGTcTAEGK	1312.584
212	P25311	FGCEIEnnR	1140.463
213	P25311	FGcEIENnR	1139.479
214	P04114	FEVDSPVYnATWSASLK	1914.912
215	Q9BTA9-3	FLTAGPSAFnITSLISQAAQLSTQDIPLHEGIQMER	3885.969
216	P43251	FnDTEVLQR	1122.543
217	P04114	FnSSYLQGTnQITGR	1687.792
218	P04114	FnSSYLQGTNQITGR	1686.808
219	Q13201	FNPGAESVVLsnSTLK	1663.854
220	P01011	FnLTETSEAEIHQSFQHLLR	2401.178
221	P55083	FnGSVSFFR	1061.505
222	P27169	HAnWTLTPLK	1181.631
223	P05155	GVTSVSQIFHSPDLAIRDTFVnASR	2718.385
224	Q86VB7	GnESALWDcK	1180.494
225	P0DOX6; P01871	GLTFQQnASSMcVPDQDTAIR	2340.059
226	P04275	GLQPTLTNPGEcRPhFTcAcR	2450.101
227	P0C0L4; P0C0L5	GLnVTLSSSTGRnGFK	1552.797
228	P0C0L4; P0C0L5	GLnVTLSSSTGR	1105.585
229	Q08380	GLnLTEDTYKPR	1407.711
230	P01011	GLKFnLTETSEAEIHQSFQHLLR	2699.379
231	P17936	GLcVnASAVSR	1134.557
232	P26927	GTAAnTTTAGVPcQR	1434.664
233	P02675	GTAGNALMDGASQLMGEEnR	1893.843
Normal control 2			

1	A0A140VJJ6	VDKDLSLEDILHQVEnKTSEVK	2668.368
2	Q9NPP6; A0A286YEY 5; Q6N092; Q8NCL6	LSLHRPALEDLLLGSEAnLTcTLTGLR	2964.582
3	A0A384MDQ 7; P01009	KLSSWVLLMKYLGnATAIFFLPDEGKLQHLENELTHDIIT K	4727.516
4	A0A384MDQ 7; P01009	YLGnATAIFFLPDEGKLQHLENELTHDIITK	3541.821
5	A0A384N669	LGSFEGLVnLTFIHLQHNR	2196.156
6	P22792	LYLGSNnLTALHPALFQnLSK	2316.223
7	P01871	THTnISESHPnATFSAVGEASiCEDDWNSGER	3520.483
8	Q96PD5	LEPVHLQLQcMSQEQLAQVAAnATK	2808.402
9	A5PL27	ELHHLQEQnVSNAFLDKGEFYIGSK	2904.416
10	D9IWP9	DTAVFEcLPQHAMFGnDTITcTTHGnWTK	3354.450
11	A0A024R6P0	GLKFnLTETSEAEIHQSFQHLLR	2699.379
12	B4E1Z4	SPYYnVSDEISFHcYDGYTLR	2587.108
13	A0A140VK00	AREDIFMETLKDIVEYYNDSnGSHVLQGR	3400.611
14	A0A024R6P0	FnLTETSEAEIHQSFQHLLR	2401.178
15	P00739; P00738	MVSHHnLTTGATLInEQWLLTTAK	2681.360
16	P20851	LGHcPDPVLVnGEFSSSGPVnVSDK	2613.214
17	A0A140VK00	AREDIFMETLKDIVEYYnDSnGSHVLQGR	3401.595
18	P29622	SQILEGLGFnLTELSESDVHR	2345.162
19	P00738	VVLHPnYSQVDIGLIK	1795.995
20	P01023	SLGNVnFTVSAEALESQELcGTEVPSVPEHGRK	3542.707
21	Q5UGI6	GVTSVSQIFHSPDLAIRDTFVnASR	2718.385
22	G3V387	ADTHDEILEGLNFnLTEIPEAQIH	2720.305
23	P09871	NcGVncSGDVFTALIGEIASPNYPKYPENSR	3527.621
24	X6RLJ0	RNPPMGGNVVIFDVTITNQEOPYQnHSGR	3270.560
25	P00739; P00738	mVSHHnLTTGATLINEQWLLTTAK	2696.371
26	C9JF17	ADGTVNQIEGEATPVnLTEPAKLEVK	2724.394
27	A0A140VJJ6	DLQSLEDILHQVEnKTSEVK	2326.177
28	A0A024R462	DQcIVDDITYNVnDTFHK	2197.971
29	D9ZGG2	nnATVHEQVGGPSLTSDLQAQSK	2383.137
30	A0A384MDQ 7; P01009	YLGnATAIFFLPDEGKLQHLEnELTHDIITK	3542.805
31	P01023	VSnQTLSLFFTVLQDVPVR	2164.165
32	P02743	ESVTDHVNLIITPLEKPLQnFTLcFR	2972.519
33	P00738	QLVEIEKVVLHPnYSQVDIGLIK	2635.471
34	B2RMS9	LPTQnITFQTESSVAEQEAQSPK	2810.337
35	P01023	SLGNVnFTVSAEALESQELcGTEVPSVPEHGR	3414.612
36	A0A384MDQ 7; P01009	ADTHDEILEGLNFnLTEIPEAQIHEGFQELLR	3692.808
37	C9JF17	ADGTVnQIEGEATPVnLTEPAKLEVK	2725.378
38	A0A087WT5 9	ALGISPFHEHAEVVFTAnDSGPRR	2608.290
39	P01008	LGAcnDTLQQLmEVFKFDTISEK	2704.284

40	P05156	LSDLSInSTEcLHVHcR	2041.943
41	A0A140VK00	DIVEYYnDSnGSHVLQGR	2067.925
42	A0A384MDQ7; G3V387; P01009	QLAHQSnStnIFFSPVSIATAFAmLSLGTK	3199.598
43	P49908	EGYSnISYIVVNHQGISSR	2124.036
44	P04003	FSLLGHASIScTVEEnETIGVWRPSPPTcEK	3373.619
45	A0A384N669	LSHNELADSGIPGNSFnVSSLVELDLSYNK	3220.564
46	P01023	SLGnVnFTVSAEALESQELcGTEVPSVPEHGR	3415.596
47	A5PL27	EHEGAIYPDnTTDFQR	1893.825
48	A0A024R6P0	YTGnASALFILPDQDKMEEVEAMLLPETLKR	3523.770
49	P02765	AALAAFNAQnnGSNFQLEEISR	2367.121
50	C0JYY2	FEVDSPVYnATWSASLK	1914.912
51	P02765	KVcQDcPLLAPLnDTR	1900.926
52	Q8NF20	EVnTSGFAPARPPPQPGSTTFWAWSVLR	3057.522
53	A0A024R6P0	TLnQSSDELQLSMGNAMFVKEQLSLLDRFTEDAKR	4015.974
54	P02790	ALPQPQnVTSLLGcTH	1736.864
55	A5PL27	ELHHLQEQnVSnAFLDKGEFYIGSK	2905.400
56	Q9Y6R7	NPNNDQVFPnGTLAPSIPIWGGSWR	2738.332
57	A0A024R035	AVnITSENLIDDVVSLIR	1972.060
58	P02765	AALAAFNAQNnGSNFQLEEISR	2366.137
59	P02763; P19652	SVQEIQATFFYFTPnKTEDTIFLR	2896.440
60	G3V387	ADTHDEILEGLnFnLTEIPEAQIH	2721.289
61	Q5UGI6	AKVGQLQLSHnLSLVILVPQNLK	2513.481
62	D9ZGG2	NnATVHEQVGGPSLTSDLQAQSK	2382.153
63	A0A5C2FVK9	FSGSGSGTDFnLTISR	1646.766
64	B4E1B2; P02787	QQQHLLFGSnVTDcSGNFcLFR	2516.108
65	P04003	SRPAnHcVYFYGDEISFScHETSR	2920.241
66	A0A140VK00	DIVEYYnDSNGSHVLQGR	2066.941
67	P05160	KEHETcLAPELYnGnYSTTQK	2485.119
68	A0A384N669	LSHNELADSGIPGnSFnVSSLVELDLSYNK	3221.548
69	A0A087WT59	ALGISPFHEHAEVVFTAnDSGPR	2452.189
70	P04217	FQSPAGTEALFELHnISVADSAnYScVYVDLKPPFGGSAPSER	4630.172
71	P01024	TVLTPATNHMGnVTFTIPANR	2256.144
72	Q5SQ11	WFSAGLASnSSWLR	1582.765
73	C0JYY2	FnSSYLQGTNQTGR	1686.808
74	Q5UGI6	VGQLQLSHnLSLVILVPQNLK	2314.349
75	A0A024R462	LDAPTNLQFVnETDSTVLVR	2233.135
76	F2Z3N2; B4E1Z4	QSVPAHFVALnGSK	1455.759
77	P0DOX6	THThISESHPhATFSAVGEASIScEDDDWSGER	3521.467
78	G8DPX5	WVLYmVKNLPRMLIMLPLNNTQEIKncFFnITTELR	4612.384
79	P02765	VcQDcPLLAPLnDTR	1772.831

80	A0A384N669	LHINHnnLTESVGPLPK	1884.981
81	P00739; P00738	nLFLnHSEnATAK	1461.686
82	C9JF17	ADGTVNQIEGEATPVnLTEPAK	2255.104
83	F5GXS0; A0A140TA32	nTTcQDLQIEVTVK	1649.805
84	C0JYY2	QVLFLDTVYGncSTHFTVK	2230.085
85	P00739; P00738	NLFLnHSEnATAK	1460.702
86	B4E1B2; P02787	QQQHFLFGSnVTDeSGnFcLFR	2517.092
87	A0A384NKS 6	LAnLTQGEDQYYLR	1684.818
88	A0A384NKS 6	MLnTSSLLEQLNEQFNWVSR	2410.171
89	P01024	TVLTPATnHMGnVTFTIPANR	2257.128
90	A0A024R462	DQcIVDDITYnVnDTFHK	2198.955
91	F5GXS0; B7Z1F8; A0A140TA32	FSDGLESnSSTQFEVK	1775.797
92	P01008	SLTFnETYQDISELVYGAK	2179.044
93	V9HWI6	SDFASnccSInSPPLYcDSEIDAELK	2994.233
94	B1AKG0	LQNNENnIScVER	1590.718
95	A0A384N669	LHINHnNLTESVGPLPK	1883.997
96	D9IWP9	VYKPSAGnNSLYR	1469.738
97	D3DNU8	LNAEnnATFYFK	1433.658
98	F5GXS0; A0A140TA32	GLnVTLSSSTGRnGFK	1552.797
99	P55058	VSnVScQASVSR	1294.606
100	P02763	QDQcIYnTTYLnVQR	1917.865
101	A0A8Q3WK W7	ISEEnETTcYMGK	1562.635
102	A8K9A9	IYSGILnLSDITK	1437.784
103	Q08KA5	VIHTDnGTnFTSSAVKAAcWWAGIQQAFGIPYNPQSQGVV ESMNK	4911.314
104	A0A7S5C406	GLEWIGDIInHTGSTNYNPSLK	2317.110
105	P01833	LSLLEEPGnGTFTVILNQLTSR	2403.277
106	A7LKQ7	TVFnKTnATFASPSGGDLRNTmRR	2659.289
107	A0A5C2GS96	GLEWVGEVKHSGSTnYSPSLK	2276.119
108	A0A286YFY 5	HYTnSSQDVTVPcR	1664.733
109	A0A8Q3WK W7	MDGASnVTcINSR	1425.610
110	A0A384N669	LHInHnnLTESVGPLPK	1885.965
111	C0JYY2	FVEGSHnSTVSLTTK	1607.791
112	A0A384MDQ 7; P01009	YLGnATAIFFLPDEGK	1756.879
113	B1AKG0	LQNNEnnIScVER	1591.702
114	B2R8I2	VIDFncTTSSVSSALANTK	2015.959
115	C9JSN9	DVQIIVFPEDGIHGFnFTR	2205.097
116	C0JYY2	LATALSLSNKFVEGSHnSTVSLTTK	2606.367

117	P01024	TVLTPATnHMGnVTFTIPAnR	2258.112
118	P02763	QDQcIYnTTYLNvQR	1916.881
119	P01833	VPGnVTAVLGETLK	1398.784
120	P19652	QNQcFYnSSYLNVQR	1921.850
121	D3DNU8	LNAENnATFYFK	1432.674
122	K7EKQ5	ALGFEnATQALGR	1348.686
123	P00739; P00738	NLFLNHSEnATAK	1459.718
124	A0A140VKE 5	nGSGAVFPVAGADVQTLR	1759.897
125	A5PL27	EnLTAPGSDSAVFFEQGTTR	2127.983
126	P27169	HAnWTLTPLK	1181.631
127	D6RHJ6	EnISDPTSPLR	1229.601
128	B2R9F2	AQLLQGLGFnLTER	1560.838
129	Q9Y5Y7	ANQQLnFTEAK	1264.617
130	Q6MZU6	EEQFnSTFR	1158.506
131	A0A5C2GL9 1	FSGSGSGTDFTLnISR	1646.766
132	Q59EA3	EVYPWYnLTVEAK	1612.789
133	P01871	YKnnSDISSTR	1286.586
134	C0JYY2	FnSSYLQGTnQITGR	1687.792
135	Q13201	FNPGAESVVLsnSTLK	1663.854
136	C0JYY2	YDFnSSMLYSTAK	1527.667
137	P03951	VYSGILnQSEIK	1351.710
138	A0A5C2FZC 1	FnGSGSGTDFTLTISR	1660.781
139	B4DZ36	ISnSSDTVEcEcSENWK	2045.806
140	P05546	nLSMPLLPADPHK	1483.761
141	F5GXS0; A0A140TA32	GLnVTLSSSTGR	1105.585
142	D9IWP9	LGnWSAMPScK	1251.550
143	X5D8W0	FQLLnFSSSELK	1413.726
144	H0Y512	AGPnGTLFVADAYK	1424.706
145	P43652	YAEDKFnETTEK	1475.654
146	P19823	GAFISnFSMTVDGK	1474.688
147	D3DNU8	ITYSIVQTncSK	1414.688
148	P02790	SWPAVGncSSALR	1405.653
149	Q2EQH9	LFNTTSTRESnK	1398.686
150	B4DZ36	IDSTGnVTnELR	1320.628
151	A0A8Q3WK W7	SPDVInGSPISQK	1342.685
152	P19652	QNQcFYnSSYLnVQR	1922.834
153	P80108	nLTTSLTESVDR	1336.659
154	P00734	nFTENDLLVR	1221.611
155	A0A140VJJ6	DnccILDER	1195.472
156	A0A384NKS 6	EDALnETR	948.427
157	A0A5C2GUH	KPGASVnLScK	1161.593

	3		
158	D6RAR4	cFLGnGTGYR	1145.504
159	A0A4W9A91 7	EEQYnSTFR	1174.501
160	D9IWP9	LGnWSAmPScK	1267.545
161	C9JF17	cIQAnYSLMEnGK	1529.661
162	A0A5C2GZB 1	FnGSGSGTDFTLK	1331.611
163	C9JSN9	FnDTEVLQR	1122.543
164	P03951	GINYnSSVAK	1053.521
165	P20851	EWDnTTTEcR	1312.511
166	P23142	cATPHGDnASLEATFVK	1818.833
167	B4DZ36	IDSTGnVTNELR	1319.644
168	Q13201	LQnLTLPTnASIK	1414.779
169	P05156	FLNnGTcTAEGK	1312.584
170	P01871	nNSDISSTR	994.444
171	Q07954	FnSTEYQVVTR	1344.643
172	A0A024R6P0	KLInDYVKnGTR	1422.759
173	Q6MZU6	TKPREEQFnSTFR	1640.803
174	P43652	DIENFnSTQK	1196.543
175	J3QQX6	GnETLHYETFGK	1396.638
176	K7EKQ5	DAGVVcTnETR	1222.537
177	B7Z539	AnLSSQALR	960.511
178	V9GYL7	IGYSNnGSDWK	1241.543
179	Q9Y5Y7	KANQQLnFTEAK	1392.712
180	P43652	DIENFnSTQK	1197.527
181	A0A5C2GHF 1	LIIYnASNR	1064.573
182	A0A286YFJ8	EEQFnSTYR	1174.501
183	P29622	DFYVDEnTTVR	1359.606
184	P02768	nEcFLQHK	1076.483
185	P22792	AFGSNPnLTK	1049.526
186	B4DZ36	GlcNnSSDVR	1008.441
187	Q9BV40	nKTEDLEATSEHFK	1649.765
188	P01871	YKnNSDISSTR	1285.602
189	Q92954	nGTLVAFR	878.473
190	A0A0U4DF9 4	GPSSAGANTnSTPnR	1432.630
191	Q9J0Z8	KDWnDTLQnVTEK	1592.744
Uremia patient 1			
1	A0A384MDQ 7; G3V387; P01009	QLAHQSnSTNIFFSPVSIATAFAMLSLGTK	3182.619
2	A0A384MDQ 7; P01009	YLGnATAIFFLPDEGKLQHLENELTHDIITK	3541.821
3	P01008	LGAcnDTLQQLMEVFKFDTISEK	2688.290
4	P36955	VTQnLTLIEESLTSEFIHDIDR	2574.293
5	E9PFZ2	ELHHLQEQnVSNAFLDKGEFYIGSK	2904.416

6	B2RMS9	LPTQnITFQTESSVAEQEAEFQSPK	2810.337
7	A0A384MDQ 7; P01009	ADTHDEILEGLNF _n LTEIPEAQIHEGFQELLR	3692.808
8	A0A384N669	AFEnVTDLQWLILDHNLLENSK	2613.320
9	P01871	THTnISESHPnATFSAVGEASiCEDDWNSGER	3520.483
10	A0A140VK00	DIVEYYnDSNGSHVLQGR	2066.941
11	Q9NPP6; Q96K68; A0A286YEY 5	LSLHRPALEDLLLGSEAnLTcTLTGLR	2964.582
12	A8K9A9	LQAPLnYTEFQKPIcLPSK	2248.168
13	A0A140VK00	AREDIFMETLKDIVEYYnDSnGSHVLQGR	3401.595
14	P02765	AALAAFNAQnGsnFQLEEISR	2366.137
15	A0A024R462	LDAPTNLQFVnETDSTVLR	2233.135
16	Q06AH7	QQQHLFGSnVTDeSGnFcLFR	2517.092
17	A0A024R462	DQcIVDDITYNVnDTFHK	2197.971
18	A0A140VK00	DIVEYYnDSnGSHVLQGR	2067.925
19	P01023	VSnQTLSLFFTVLQDVPVR	2164.165
20	A0A024R035	AVnITSENLIDDVVSLIR	1972.060
21	P01023	SLGNVnFTVSAEALESQELcGTEVPSVPEHGR	3414.612
22	P20851	LGHcPDPVLVNGEFSSSGPVnVSDK	2612.230
23	P02763; P19652	SVQEIQATFFYFTPnKTEDTIFLR	2896.440
24	P20851	LGHcPDPVLVnGEFSSSGPVnVSDK	2613.214
25	Q06AH7	QQQHLFGSnVTDeSGnFcLFR	2516.108
26	P02766	ALGISPFHEHAEVVFTAnDSGPR	2452.189
27	P29622	SQILEGLGF _n LTELSESDVHR	2345.162
28	P02765	AALAAFNAQnnGsnFQLEEISR	2367.121
29	E9PFZ2	ELHHLQEQnVSnAFLDKGEFYIGSK	2905.400
30	Q5UGI6	GVTSVSQIFHSPDLAIRDTFVnASR	2718.385
31	A0A286YEY 5	HYTnSSQDVTVPcR	1664.733
32	Q5UGI6	VGQLQLSHnLSLVILVPQNLIK	2314.349
33	E9PFZ2	EHEGAIYPDnTTDFQR	1893.825
34	P02765	KVcQDcPLLAPLnDTR	1900.926
35	E9PFZ2	ELHHLQEQnVSNAFLDK	2022.988
36	P43652	nccNTENPPGcYR	1642.604
37	A0A5C2GL9 1	FSGSGSGTDFTLnISR	1646.766
38	A0A140VK00	AREDIFMETLKDIVEYYNDSnGSHVLQGR	3400.611
39	P02765	AALAAFNAQnnGsnFQLEEISR	2368.105
40	P01023	SLGnVnFTVSAEALESQELcGTEVPSVPEHGR	3415.596
41	P02790	nGTGHGnSTHHGPEYMR	1853.762
42	P02765	VcQDcPLLAPLnDTR	1772.831
43	Q6PEJ8	VVLHPnYSQVDIGLIK	1795.995
44	D9ZGG2	nnATVHEQVGGPSLTSDLQAQSK	2383.137
45	P02743	ESVTDHVNLIITPLEKPLQnFTLcFR	2972.519

46	A0A384MDQ 7; G3V387; P01009	QLAHQSnStnIFFSPVSIATAFAMLSLGTK	3183.603
47	A0A0G2JPR0 ; A0A140TA29	nTTcQDLQIEVTVK	1649.805
48	C9JF17	ADGTVNQIEGEATPVnLTEPAK	2255.104
49	H2FE99	VLnKTVRATImTGDTPlnIFGRNVLTALGmSLNLPVAK	4073.214
50	A0A384NKS 6	mLnTSSLLEQLNEQFNWVSR	2426.166
51	E9PFZ2	EnLTAPGSDSAVFFEQGTTR	2127.983
52	A0A1U9X7H 4	SPYYnVSDEISFHcYDGYTLR	2587.108
53	C0JYY2	FEVDSPVYnATWSASLK	1914.912
54	P02763	QDQcIYnTTYLNVQR	1916.881
55	B1AKG0	LQNNEnnIscVER	1591.702
56	P43251	DVQIIVFPEDGIHGFnFTR	2205.097
57	B4DPC7	VVGVPYQGnATALFILPSEGK	2161.154
58	E9PFZ2	DVDKEFYLFPTVFDEnESLLEDNIR	3161.520
59	P01008	LFGDKSLTFnETYQDISELVYGAK	2739.340
60	P00734	YPHKPEInSTTHPGADLQENFcR	2712.247
61	P19652	QnQcFYNSSYLVNQR	1921.850
62	C0JYY2	FnSSYLQGTNQTGR	1686.808
63	Q96PD5	LEPVHLQLQcMSQEQLAQVAAnATK	2808.402
64	P04003	DQYVEPEnVTIQcDSGYGVVGPQSITcSGnR	3431.500
65	Q6PEJ8; P00739	NLFLnHSEnATAK	1460.702
66	A0A024R462	LDAPTnLQFVnETDSTVLVR	2234.119
67	A0A0G2JPR0 ; A0A140TA29	FSDGLESnSSTQFEVK	1775.797
68	Q5SQ11	WFSAGLASnSSWLR	1582.765
69	P55058	VSnVScQASVSR	1294.606
70	P01833	VPGnVTAVLGETLK	1398.784
71	D9IWP9	VYKPSAGnNSLYR	1469.738
72	H0Y512	AGPnGTLFVADAYK	1424.706
73	A0A8Q3WK W7	ISEEnETTcYMGK	1562.635
74	C0JYY2	QVFPGLnYcTSGAYSNASSTDSASYYP LTGDTR	3551.554
75	P27169	VTQVYAE nGTVLQGSTVASVYK	2315.177
76	B2R8I2	VIDFncTTSSVSSALANTK	2015.959
77	A0A384MDQ 7; P01009	YLGnATAIFFLPDEGK	1756.879
78	Q9Y6L6	KYQEKDINASEnGSVMDEAnLESLnK	2929.326
79	A0A384N669	LSHNELADSGIPGNSFnVSSLVELDLSYNK	3220.564
80	A0A024R462	DQcIVDDITYnVnDTFHK	2198.955
81	C0JYY2	YDFnSSMLYSTAK	1527.667
82	P01008	SLTFnETYQDISELVYGAK	2179.044
83	V9HWI6	SDFASnccSINSPPLYcDSEIDAELK	2993.249

84	C0JYY2	QVFPGLnYcTSGAYSnASSTDSASYPLTGDTR	3552.538
85	A0A384NKS 6	LAnLTQGEDQYYLR	1684.818
86	P13473	VASVININPnTTHSTGScR	2028.977
87	B1AKG0	LQNNENnIScVER	1590.718
88	C0JYY2	FnSSYLQGTnQITGR	1687.792
89	Q6PEJ8; P00739	nLFLnHSEnATAK	1461.686
90	B4DZ36	IDSTGnVTNELR	1319.644
91	I1TC98	NVNVSKnSTGSSnGTARYnETYREmK	2926.312
92	P27169	HAnWTLTPLK	1181.631
93	P19652	QNQcFYnSSYLnVQR	1922.834
94	T2CJQ1	NAANTNnATTAATTTVAnTNISSGImMEK	2930.335
95	D9IWP9	VYKPSAGmnSLYR	1470.722
96	D3DNU8	LNAENnATFYFK	1432.674
97	A0A5C2GF63	KPGASVnVScK	1147.578
98	A0A8Q3WK W7	SPDVInGSPISQK	1342.685
99	P29622	FLnDTMAVYEAK	1402.656
100	P80108	nLTTSLTESVDR	1336.659
101	P55058	EGHFYYnISEVK	1486.685
102	B4DZ36	nHScSEGQISIFR	1535.691
103	D3DNU8	ITYSIVQTncSK	1414.688
104	P43652	YAEDKFnETTEK	1475.654
105	B4DZ36	ISnSSDTVEcEcSENWK	2045.806
106	D9IWP9	LGnWSAMPScK	1251.550
107	Q6N093	TKPREEQFnSTFR	1640.803
108	P02790	SWPAVGncSSALR	1405.653
109	Q6N093	EEQFnSTFR	1158.506
110	K7EKQ5	ALGFEnATQALGR	1348.686
111	P20851	EWDnTTTEcR	1312.511
112	D6RHJ6	EnISDPTSPLR	1229.601
113	A0A384NKS 6	EDALnETR	948.427
114	P22792	AFGSNPnLTK	1049.526
115	B4DZ36	IDSTGnVTnELR	1320.628
116	A0A286YFJ8	EEQFnSTYR	1174.501
117	Q13201	LQnLTLPTnASIK	1414.779
118	P01871	YKnnSDISSTR	1286.586
119	C0JYY2	FVEGSHnSTVSLTTK	1607.791
120	A0A140VKE 5	nGSGAVFPVAGADVQTLR	1759.897
121	P01871	nNSDISSTR	994.444
122	A0A4W9A91 7	EEQYnSTFR	1174.501
123	P00734	nFTENDLLVR	1221.611
124	P05156	FLNnGTcTAEGK	1312.584

125	P02790	ALPQPQnVTSLLGcTH	1736.864
126	A8K9A9	IYSGILnLSDITK	1437.784
127	A0A5C2GHF1	LIIYnASNR	1064.573
128	A6XND1	GLcVnASAVSR	1134.557
129	D6RAR4	cFLGnGTGYR	1145.504
130	A0A7S5C1Q2	GRFnISR	850.453
131	O75144	LFnVTPQDEQK	1319.648
132	P02768	nEcFLQHK	1076.483
133	Q5NKV8	AnLTVVLLR	999.620
134	D3DNU8	LnAEnnATFYFK	1434.642
135	A0A024R6P0	YTGnASALFILPDQDK	1753.864
136	P01008	WVSnKTEGR	1077.532
137	H6X2Q3	TnSSNGTTPPTSSGK	1594.719
138	D9IWP9	LGnWSAmPScK	1267.545
139	B2R8I2	YWnDcEPPDSR	1439.553
140	A0A8S0MAG0	cATPHGDnASLEATFVK	1818.833
141	P29622	DFYVDEnTTVR	1359.606
142	K7EKQ5	DAGVVcTnETR	1222.537
143	A0A5C2GUH3	KPGASVnLScK	1161.593
144	A8K9A9	GVnVcQETcTK	1296.556
145	F8WF14	WSDIWnATK	1121.526
146	Q92954	nGTLVAFR	878.473
147	B7Z2N4	VInETWAWK	1147.578
148	P12259	TWnQSIALR	1089.569
149	X5D8W0	VSLTnVSISDEGR	1377.686
150	A0A0G2JPR0 ; A0A140TA29	GLnVTLSSSTGR	1105.585
151	B4DZ36	cInQSIcEK	1152.502
152	P80188	SYnVTSVLFR	1186.610
153	A0A087WTF6	DGQLLPSSnYSNIK	1536.754
154	F8WF14	EnETEIIK	976.483
155	A0A8Q3WKW7	mDGASnVTcINSR	1441.605
156	Q9Y5Y7	ANQQLnFTEAK	1264.617
Uremia patient 2			
1	G3V387; P01009	QLAHQSnSTNIFFSPVSIATAFAMLSLGTK	3182.619
2	P01008	LGAcnDTLQQLMEVFKFDTISEK	2688.290
3	E9PFZ2	ELHHLQEQnVSNAFLDKGEFYIGSK	2904.416
4	E9PFZ2	ELHHLQEQnVSnaFLDKGEFYIGSK	2905.400
5	P20851	LGHCpDPVLVNGEFSSSGPvNVSDK	2612.230
6	A0A140VK00	AREDIFMETLKDIVEYYnDSnGSHVLQGR	3401.595
7	P00734	YPHKPEInSTTHPGADLQENFcR	2712.247

8	P01871	THTnISESHPhATFSAVGEASiCEDDWNSGER	3520.483
9	D9ZGG2	nnATVHEQVGGPSLTSDLQAQSK	2383.137
10	P36955	VTQnLTLIEESLTSEFIHDIDR	2574.293
11	A0A384N669	LGSFEGLVnLTFIHLQHNR	2196.156
12	D9ZGG2	NnATVHEQVGGPSLTSDLQAQSK	2382.153
13	A0A286Y5EY5; Q8NCL6	LSLHRPALEDLLLGSSEAnLTcTLTGLR	2964.582
14	P01009	ADTHDEILEGLNFnLTEIPEAQIHEGFQELLR	3692.808
15	A0A024R462	DQcIVDDITYNVnDTFHK	2197.971
16	P01009	YLGnATAIFFLPDEGKQLHLENELTHDIITK	3541.821
17	P05160	KEHETcLAPELYnGnYSTTQK	2485.119
18	C9JF17	ADGTVNQIEGEATPVnLTEPAKLEVK	2724.394
19	A0A140VK00	AREDIFMETLKDIVEYYNDSnGSHVLQGR	3400.611
20	P20851	LGHcPDPVLVnGEFSSSGPVnVSDK	2613.214
21	B4E1Z4	SPYYnVSDEISFHcYDGYTLR	2587.108
22	P49908	EGYSnISYIVVNHQGISSR	2124.036
23	A0A140VK00	DIVEYYnDSNGSHVLQGR	2066.941
24	Q5UGI6	GVTSVSQIFHSPDLAIRDTFVnASR	2718.385
25	A0A024R462	LDAPTNLQFVnETDSTVLVR	2233.135
26	A0A140VK00	DIVEYYnDSnGSHVLQGR	2067.925
27	P02765	AALAAFNAQNnGSNFQLEEISR	2366.137
28	E9PFZ2	ELHHLQEQnVSNAFLDK	2022.988
29	P02765	KVcQDcPLLAPLnDTR	1900.926
30	P01009	YLGnATAIFFLPDEGKQLHLEnELTHDIITK	3542.805
31	P04003	FSLLGHASIScTVEEnETIGVWRPSPPTcEK	3373.619
32	A0A096LPE2	SRVYLQGLIDcYLFGnSSTVLEDSK	2865.398
33	P01023	VSnQTLSLFFTVLQDVPVR	2164.165
34	P02763; P19652	NEEYnKSVQEIQATFFYFTPnKTEDTIFLR	3674.754
35	P01023	SLGNVnFTVSAEALLESQELcGTEVPSVPEHGR	3414.612
36	A0A024R035	AVnITSENLIDDVVSLIR	1972.060
37	P02765	VcQDcPLLAPLnDTR	1772.831
38	A0A384N669	AFEnVTDLQWLILDHNLLENSK	2613.320
39	C9JF17	ADGTVNQIEGEATPVnLTEPAK	2255.104
40	P02787	QQQHFLFGSnVTDcSGnFcLFR	2517.092
41	A0A5F9ZH15	NPVGLIGAEnATGETDP SHSK	2094.994
42	E9PFZ2	EHEGAIYPDnTTDFQR	1893.825
43	A8K9A9	LQAPLnYTEFQKPIcLPSK	2248.168
44	P04003	SRPAnHcVYFYGDEISFScHETSR	2920.241
45	G3V387	ADTHDEILEGLNFnLTEIPEAQIH	2720.305
46	Q6PEJ8	VVLHPnYSQVDIGLIK	1795.995
47	A0A384NKS6	LAnLTQGEDQYYLR	1684.818
48	B2RMS9	LPTQnITFQTESSVAEQEAEFQSPK	2810.337
49	A0A024R462	LDAPTnLQFVnETDSTVLVR	2234.119
50	A0A0G2JPR0	nTTcQDLQIEVTVK	1649.805

	; P0C0L5		
51	P27169	VTQVYAE _n GTVLQGSTVASVYK	2315.177
52	A0A5C2GL9 1	FSGSGSGTDFTL _n ISR	1646.766
53	C0JYY2	F _n SSYLQGTNQTGR	1686.808
54	Q6PEJ8; P00739	nLFL _n HSE _n ATAK	1461.686
55	P19652	QNQcFY _n SSYLN _V QR	1921.850
56	P43652	nccNTENPPGcYR	1642.604
57	P01023	SLG _n V _n FTVSAEALESQELcGTEVPSVPEHGR	3415.596
58	P02790	ALPQPQ _n VTSLLGcTH	1736.864
59	P02765	AALAAFNAQ _{nn} GSNFQLEEISR	2367.121
60	P02763	QDQcIY _n TTYLN _V QR	1916.881
61	C0JYY2	FVEGSH _n STVSLT _{TK}	1607.791
62	Q5UGI6	VGQLQLSH _n LSLVILVPQNLK	2314.349
63	A0A087WT5 9	ALGISPFHEHA _{EV} VFTAnDSGPR	2452.189
64	C9JF17	ADGTV _n QIEGEATPV _n LTEPAK	2256.088
65	A0A286Y _{EY} 5	HYT _n SSQDVTVPcR	1664.733
66	A0A024R6P0	TL _n QSSDELQLSMGNAMFVK	2214.042
67	A0A5F9ZH15	DVQII _V FPEDGIHGFnFTR	2205.097
68	X6RLJ0	NPPMGGNVVIFD _V ITNQEEPYQ _n HSGR	3114.459
69	P04275	HcDG _n VSScGDHPSEGcFcPPDK	2619.959
70	C0JYY2	FEVDSPVY _n ATWSASLK	1914.912
71	P29622	SQILEGLGFnLTELSESDVHR	2345.162
72	B2R8I2	VIDFncTTSSVSSALANTK	2015.959
73	P19652	Q _n QcFY _n SSYLN _V QR	1922.834
74	Q8NCL6	LAGKPTHV _n VSVVMAEVDGTcY	2348.126
75	E9PFZ2	EFYLFPTVFDE _n ESLLEDNIR	2704.303
76	P13473	VASVINInP _n TTHSTGScR	2029.961
77	C0JYY2	LATALSLS _n KFVEGSH _n STVSLT _{TK}	2607.351
78	P13473	VASVININP _n TTHSTGScR	2028.977
79	P04003	LSVDKDQYVEPE _n VTIQcDSGYGVVGPQSITcSG _n R	3973.807
80	Q6PEJ8; P00739	NLFL _n HSE _n ATAK	1460.702
81	Q5SQ11	WFSAGLAS _n SSWLR	1582.765
82	P01833	VPG _n VTAVLGETLK	1398.784
83	P02763	QDQcIY _n TTYL _n VQR	1917.865
84	P55058	EGHFY _n ISEVK	1486.685
85	P36980	LQNNEN _n IScVER	1590.718
86	P02763; P19652	SVQEIQATFFYFTP _n KTEDTIFLR	2896.440
87	P01009	ADTHDEILEGL _n FnLTEIPEAQIHEGFQELLR	3693.792
88	P04003	DQYVEPE _n VTIQcDSGYGVVGPQSITcSG _n R	3431.500
89	Q9Y5Y7	ANQQL _n FTEAK	1264.617
90	D9IWP9	VYKPSAG _n NSLYR	1469.738

91	E9PFZ2	EnLTAPGSDSAVFFEQGTTR	2127.983
92	C0JYY2	LATALSLSNKFVEGSHnSTVSLTTK	2606.367
93	P36980	LQNNEnnIScVER	1591.702
94	C0JYY2	FnSSYLQGTnQITGR	1687.792
95	C0JYY2	YDFnSSMLYSTAK	1527.667
96	P02765	AALAAFnAQnnGSNFQLEEISR	2368.105
97	V9HWI6	SDFASnccSINSPLYcDSEIDAELK	2993.249
98	P0DOX6	THTnISESHFnATFSAVGEASICEDDDWSGER	3521.467
99	P55058	VSnVScQASVSR	1294.606
100	D9IWP9	LGnWSAMPScK	1251.550
101	D3DNU8	LNAENnATFYFK	1432.674
102	C0JYY2	VNQNLVYESGSLnFSK	1799.881
103	P02787	QQQHLFGSnVTDeSGNFcLFR	2516.108
104	B4DVE1	GLnLTEDTYKPR	1407.711
105	A0A384N669	LSHNELADSGIPGNSFnVSSLVELDLSYNK	3220.564
106	P03951	LETTVnYTDSQRPIcLPSK	2223.096
107	A0A0G2JPR0 ; P0C0L5	GLnVTLSSSTGRnGFK	1552.797
108	D3DNU8	LNAEnnATFYFK	1433.658
109	B4DPC7	VVGVPYQGnATALFILPSEGK	2161.154
110	B4E1Z4	QSVPAHFVALnGSK	1455.759
111	B4DVE1	ALGFEnATQALGR	1348.686
112	A0A384N669	LSHNELADSGIPGnSFnVSSLVELDLSYNK	3221.548
113	P43652	nccnTENPPGcYR	1643.588
114	C0JYY2	QVFPGLnYcTSGAYSnASSTDSASYPLTGDTR	3552.538
115	B4DZ36	IDSTGnVTNELR	1319.644
116	A0A024R035	cnGDnDcGDFSEDDcESEPRPPcR	3005.020
117	A0A5J6A018	VLAEAmSHAnSSIMMQRGnFR	2368.084
118	A0A0G2JPR0 ; P0C0L5	FSDGLESnSSTQFEVK	1775.797
119	A0A384NKS 6	mLnTSSLLEQLNEQFNWVSR	2426.166
120	C0JYY2	VNQnLVYESGSLnFSK	1800.865
121	X5D8W0	VSLTnVSISDEGR	1377.686
122	P27169	HAnWTLTPLK	1181.631
123	A0A5F9ZH15	YQFNTNVVFSNnGTLVDR	2088.999
124	P01008	SLTFnETYQDISELVYGAK	2179.044
125	Q15063	EVnDTLLVNELK	1387.732
126	C9JF17	cIQAnYSLMEEnGK	1529.661
127	P02790	SWPAVGncSSALR	1405.653
128	P05156	FLNnGTcTAEGK	1312.584
129	A0A8S0MAG 0	cATPHGDnASLEATFVK	1818.833
130	Q13201	FNPGAESVVLSnSTLK	1663.854
131	Q59EA3	EVYPWYnLTVEAK	1612.789
132	A0A8Q3WK W7; A8K5T0	SPDVInGSPISQK	1342.685

133	P01009	YLGnATAIFFLPDEGK	1756.879
134	P80108	nLTTSLTESVDR	1336.659
135	D6RHJ6	EnISDPTSPLR	1229.601
136	A0A0G2JPR0 ; P0C0L5	GLnVTLSSSTGR	1105.585
137	P22792	AFGSNPnLTK	1049.526
138	A0A286YFJ8	EEQFnSTYR	1174.501
139	Q6N093; Q6MZU6	EEQFnSTFR	1158.506
140	P20851	EWDnTTTEcR	1312.511
141	H0Y512	AGPnGTLFVADAYK	1424.706
142	A0A5C2G563	DNSnNTLFLR	1194.575
143	P05156	FLnnGTcTAEGK	1313.568
144	A0A384NKS 6	EDALnETR	948.427
145	A0A8Q3WK W7	ISEEnETTeYMGK	1562.635
146	A0A4W9A91 7	EEQYnSTFR	1174.501
147	B4DVE1	DAGVVcTnETR	1222.537
148	A0A5C2GZB 1	FnGSGSGTDFTLK	1331.611
149	P00734	nFTENDLLVR	1221.611
150	P43652	YAEDKFnETTEK	1475.654
151	A0A5C2GHF 1	LIYnASNR	1064.573
152	P01871	nNSDISSTR	994.444
153	Q13201	LQnLTLPTnASIK	1414.779
154	P80188	SYnVTSVLFR	1186.610
155	A0A087WTF 6	DGQLLPSSnYSNIK	1536.754
156	B4DVE1	AAIPSALDTnSSK	1275.643
157	B4DZ36	nHScSEGQISIFR	1535.691
158	A6XND1	GLcVnASAVSR	1134.557
159	D9IWP9	LGnWSAmPScK	1267.545
160	Q5NKV8	AnLTVVLLR	999.620
161	P01008	WVSnKTEGR	1077.532
162	B3KX75	DGEAFEInGTEDGR	1510.629
163	P01871	YKnnSDISSTR	1286.586
164	Q6GMX6; Q7Z351	EEQYnSTYR	1190.496
165	B7Z2N4	VInETWAWK	1147.578
166	V9HWI6	LcDnLSTK	951.445
167	A0A5C2FVK 9	FSGSGSGTDFnLTISR	1646.766
168	A0A5F9ZH15	FnDTEVLQR	1122.543
169	A0A024R6P0	YTGnASALFILPDQDK	1753.864
170	H9DQG0	IEnYTGIIYnLIK	1555.825
171	Q92954	nGTLVAFR	878.473

172	P29622	DFYVDEnTTVR	1359.606
173	P01871	YKnNSDISSTR	1285.602
174	Q3LX85	NIIVQLNESVTIncTRPYnnTRQGTHIGPGQALYTTKITGDIR	4830.448
175	A0A1C3J7N4	ISGAARnSSSFITGSVARAVPHLGYAMAAGRFGWGLAHA PAAVAmSR	4715.383

Table S7. Details information of the identified phosphopeptides enriched by CH-Dha@Ti⁴⁺ from serum trypsin digests. s, t, y: Phosphorylation site.

No.	Protein Accessions	Group	Sequence	MH ⁺ [Da]
Normal control 1				
1	P02671		NPSsAGSWNSGSSGPGSTGNR	2043.815
2	P02671		GsESGIFTNTK	1220.519
3	P04114		VREsDEETQIK	1413.626
4	O14791		VTEPISAEsGEQVER	1710.758
5	P00747		QLGAGsIEEcAAK	1413.608
6	P02768		TcVADEsAENcDK	1578.545
7	P02671		EsSSHHPGIAEFPSR	1717.733
8	P01042		EsNEELTEScETK	1635.609
9	P01042		ETTcSKEsNEELTEScETK	2341.905
10	P01042		EtTcSKESNEELTEScETKK	2470.000
11	P01008		ATEDEGsEQKIPEATNR	1954.839
12	P02765		cDSSPDsAEDVR	1417.494
13	P02765		cDSSPDsAEDVRK	1545.589
14	P08833		AQETsGEEISK	1258.520
15	P19827		AAIsGENAGLVR	1237.594
16	P02748		AEQccEETAAsSISLHGK	1986.793
17	P02652		VKsPELQAEAK	1279.629
18	Q92954-6		VIEsEEITEVK	1355.634
19	P02652		sKEQLTPLIK	1236.660
20	P11464		sDPVtLNVLyGPDLP	1995.827
21	P49908		LPTDsELAPR	1178.545
22	P10645		GGKsGELEQEEER	1527.632
23	Q2MV58-3		FPsSLTSSLcTDNNPAGQAYWFtPVIPALWEAEAR	4056.792
24	P02671		GGSTSYGTGsETESPR	1652.644
25	Q14515		SSsQELGLK	1028.466
26	P02671		QFTsSTSYNR	1270.510
27	Q9BUN1		FIANsQEPEIR	1383.630
28	Q6P047		FtEELLR	987.455
29	Q92954-6		KVIEsEEITEVK	1483.729
30	Q92954-6		cFEsFER	1054.370
31	Q9Y680		sYQDAVLEDIFK	1507.672
32	P06727		ISAsAEELR	1055.477
Normal control 2				
1	P02679		QVRPEHPAETEDsLYPEDDL	2583.092
2	Q6PIL8; P0DOX7		VDNALQsGNSQESVTEQDSK	2215.935
3	A0A384MDQ7; P01009		YLGNAAtAIFFLPDEGK	1835.862
4	A0A5C2GFR0		EEQVVEsGGGLVQPGGSLR	1977.928
5	A0A5C2GEV4		EVQLAVsGGGLVQPGGSLR	1903.964
6	A0A5C2GH73		DIHVtQSPSSVSASVGDR	1921.865

7	A0A5C2FWT5	DsGVPDRmSGSGSGTDFTLKISR	2466.097
8	A0A5C2GS75	ASQSVRQsLAWYQQKPGQAPR	2466.204
9	A0A5C2G2K8	AIGIPDRFsGNESGTDFLTISR	2534.192
10	A0A384MDQ7; P01009	ADtHDEILEGLNFnLTeIPEAQIHEGFQELLR	3771.79
11	S5ZFI0	VAEDLNlGNPDVSIpWtHK	2185.033
12	A0A059XHM5	sTRLVIGFLSLIWDDLr	2084.094
13	A0A7S5BYK1	EVQLVAsGGGVVRPGGSLR	1917.991
14	B2RMS9	LPtQNITFQTESSVAEQEAEFQSPK	2889.319
15	A0A5C2GVB5	EVRLAEsGGGLVQPGGSLR	1961.98
16	A0A7S5C199	EEALVEsGGGLVQPGGSLR	1976.932
17	D3DNU8	ETTcSKEsNEELTEScETK	2341.905
18	A0A5C2GM92	AtGFSDRfSGSGSGTDFLTISR	2447.087
19	A0A5C2FY67	FsGSGSGTGFTLTISR	1654.747
20	P02679	FGsYcPTTcGIADFLSTYQTK	2497.045
21	P02763	QDQcIyNTTYLNVQR	1995.863
22	A0A5C2G5A9	EVQLVEsGGGLGKPGGSLR	1919.959
23	A0A5C2G6U1	DIQMTQsPPSLASVgDR	2010.884
24	A0A5C2GSD5; A0A7S5EX31; A0A7S5C2T1; A0A5C2GMJ1; A0A5C2GN12; A0A5C2GKB8; A0A5C2GKI6; A0A7S5C533; A0A7S5C4B7; A0A5C2GJY3; A0A7S5BYP3; A0A5C2GMK1; A0A7S5EYK0	EVQLVEsGGGIVQPGGSLR	1961.969
25	A0A5C2FVM5	AsQSLRGDLAWYQQKPGQAPR	2437.177
26	A2SZP6	LlyELLEVSQNQQDK	1899.91
27	A0A5C2GMJ1	mVyLQmNSLR	1366.589
28	A0A510CLA2	EyALFYKLDVVSINNTSYR	2375.132
29	A0A7S5BYP3	LscAASGITfSDFAMHWVR	2235.972
30	A0N7I9	ALQGLIHemDDWGKGtAVTVSSASTK	2798.307
31	P02768; F6KPG5	cctESLVNRRPcFSALEVDETYVPK	3110.378
32	P01008	SLtFNETYQDISELVYGAK	2258.026
Uremia patient 1			
1	A0A5C2G2U6	QSIssWLAWYQQKPGK	2066.914
2	A0A5C2GDW9	LScAASGFPLsK	1317.591
3	A0A5C2G966	EVHLAEsGGGFVQPGGSLR	1976.923
4	A0A5C2FVL3; A0A7T0PXY5	AtGIPDRIsGSGSGTDFLTISR	2469.106
5	A0A5C2FUX9	AtGIPDRfTGSGSGTDFSLTISR	2423.124
6	A0A5C2GTD7	AtDVPDRfSGSGSGTDFLTISR	2467.114
7	P02765	cDSSPDsAEDVR	1417.494
8	B2RMS9	LPtQNITFQTESSVAEQEAEFQSPK	2889.319

9	A0A5C2FW16	AsQSVSTNLIWYQQKPGQAPR	2439.182
10	P02768	sHcIAEVENDEmPADLPsLAADFVESK	3150.272
11	A0A5C2GJR6	EVQLLEsGGGLVKPGGSLR	1976.021
12	A0A7S5BYK7; A0A5C2GP27; A0A5C2GKN5; A0A5C2GN03; A0A5C2GRL5; A0A7S5BZS9; A0A7S5BZS1; A0A7S5C121	EVQLVEsGGGIVQPGGSLR	1961.969
13	Q9DHT6	INtESLVNR	1125.530
14	P02768	cctESLVNRRPcFSALEVDETYVPK	3110.378
15	B2RMS9	FSSHVGGtLGQFYQEVWLGSPAASDDGR	3048.352
16	P42684	TPSGDLAItEK	1211.556
17	A0A5C2GNZ6	EVQLVVsGGVVARPGGSLR	1917.991
18	A0A5C2GUU4	AAELLESsGGGvVQPGGSLR	1906.891
19	F1AXI9	AtVRPLAVAR	1133.619
20	A2NZ55	QVQLQEsGGGLVQPGGSLR	2031.986
21	A0A5C2GEV4	EVQLAVsGGGLVQPGGSLR	1903.964
Uremia patient 2			
1	A0A5C2GYW0	LsGVPDRFSGSGSTDFTLKISR	2464.187
2	A0A5C2GMV6	EVQLVEsGGGVAKPGGSLR	1919.959
3	A0A5C2GM92	AtGFSDRFSGSGSTDFTLTISR	2447.087
4	A0A5C2GEX6	DLQLVEsGGGLVKPGGSLR	1962.006
5	Q6MZW0	GGLFDVWGPgtTVTSSASPTSPK	2428.143
6	A0A5C2FYB1	GTDIPDRFsGSGSTDFTLTISR	2467.114
7	A0A5C2G2K8	AIGIPDRFsGNESGTDFTLTISR	2534.192
8	A0A7S5C1C0	VTISVDAsKNLLSLK	1667.898
9	P01009	YLGNAtAIFFLPDEGK	1835.862
10	Q6PIL8	VDNALQSGNsQESVTEQDSK	2215.935
11	A0A5C2FUR6	FsGVPDRFTGSGAGTDFTLTISR	2469.145
12	B4DTR2	mPsRtGTSTLTVAVcK	1884.800
13	U5LGW0	VTEPIsAESGEQVER	1710.758
14	A0A5C2GBE8	SLsAVVFGGGTK	1202.582
15	P02765	CDSSPDsAEDVR	1417.494
16	D3DNU8	ETtcSKESNEELTEScETK	2341.905
17	P19652	QNQcFyNSSYLNVQR	2000.832
18	P0DOX5	IRDtAmFFAHWGQgtLVTSSASTK	2887.289
19	A0A5C2GNZ6	EVQLVVsGGVVARPGGSLR	1917.991
20	A0A5C2GFR0	EEQVVEsGGGLVQPGGSLR	1977.928
21	A0A5C2GEA0	GLEWVsSISGSGAVKYYADSVK	2383.122
22	A0A5C2GUZ0	FsGVPDRFSGSGAATDFTLTISR	2469.145
23	A0A5C2FTR7	DIRLtQSPSSVSASVGDR	1996.934
24	A0A5C2G7L5	FSGsNSGKTATLTISR	1706.811
25	B2R8I2	VIDFNctTSSVSSALANTK	2094.941
26	A0A097GSS5	LDIVQLNDKsNNNTFSK	2029.959

