

Electronic Supplementary Information

Preparation of tannic acid and L-cysteine functionalized magnetic composites for synergistic enrichment of N-glycopeptides followed by mass spectrometric analysis

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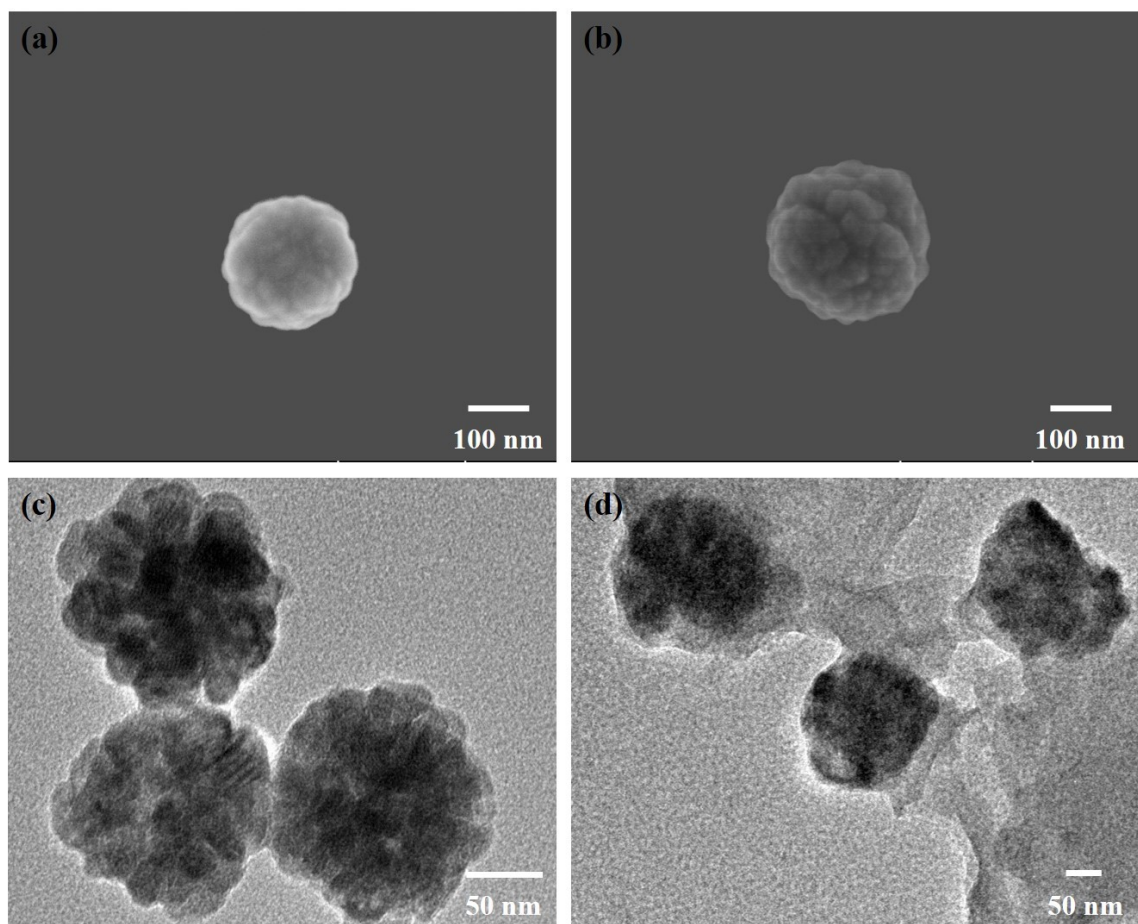


Fig. S1 SEM images of (a) Fe₃O₄ NPs and (b) MTC; TEM images of (c) Fe₃O₄@TA and (d) MTC

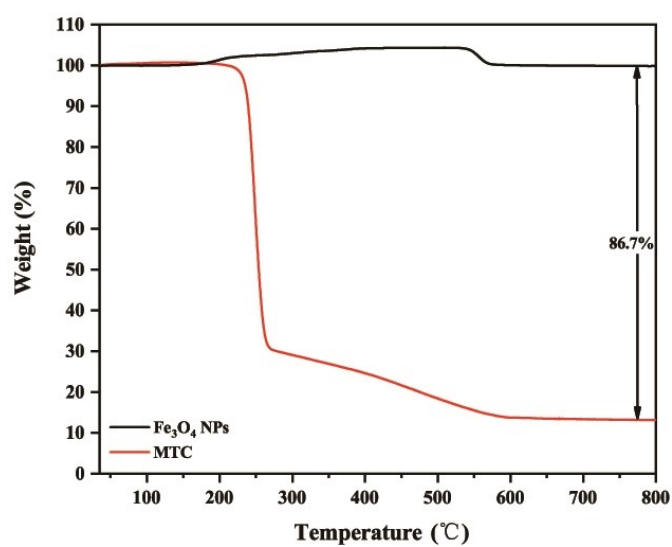


Fig. S2 TGA analysis of Fe₃O₄ NPs and MTC

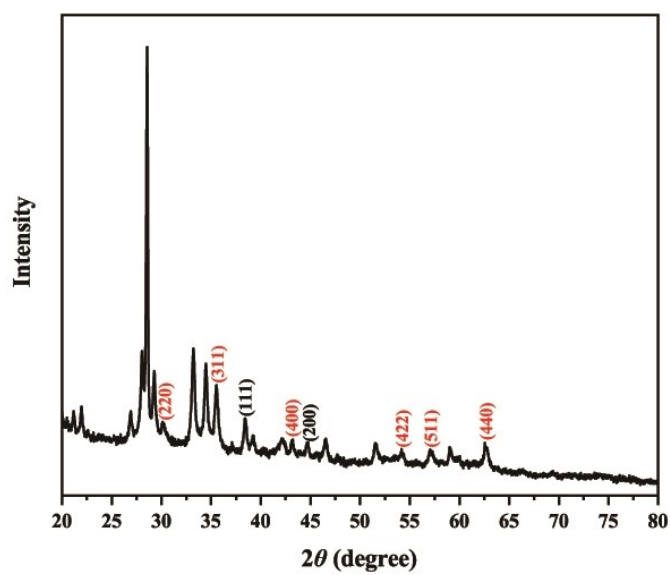


Fig. S3 XRD curve of MTC

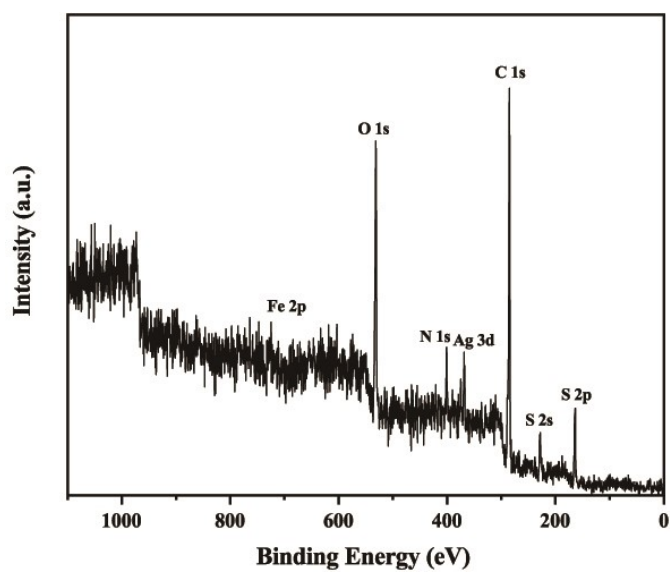


Fig. S4 XPS spectrum of MTC

Table S1 Detailed information of the observed N-glycopeptides derived from HRP tryptic digest enriched with Fe₃O₄@TA. “N#”: N-glycosylation site

No.	m/z	Glycan composition	Peptide sequence
1	1842.3	XylMan3FucGlcNAc2	NVGLN#R
2	2175.4	Man3GlcNAc2Fuc	LYN#FSN#TGLP
3	2321.2	Man2GlcNAc2	MGN#ITPLTGTQGQIR
4	2542.6	XylMan3FucGlcNAc2	SSPN#ATDTIPLVR
5	2612.1	XylMan3GlcNAc2	MGN#ITPLTGTQGQIR
6	3048.3	XylMan2GlcNAc2	SFAN#STQTFFNAFVEAMDR
7	3089.2	Hex3HexNAc2Fuc1Xyl1	GLCPLNGN#LSALVDFDLR
8	3223.4	Man3FucGlcNAc2	SFAN#STQTFFNAFVEAMDR
9	3323.1	XylMan3FucGlcNAc2	QLTPTFYDN SCPN#VSNIVR
10	3369.4	XylMan3FucGlcNAc2	LYN#FSNTGLPDPTLN#TTYLQTLR
11	3384.9	Hex6HexNAc4Fuc2XyL1	DSFRNVGLN#R
12	3606.2	XylMan3FucGlcNAc2	NQCRGLCPLNGN#LSALVDFDLR
13	3672.4	XylMan3FucGlcNAc2	GLIQSDQELFSSPN#ATDTIPLVR
14	3812.5	Hex2HexNAc2	LHFHDCFVNGCDASILLDN#TTSFRTEK
15	3894.7	XylMan3FucGlcNAc2	LHFHDCFVNGCDASILLDN#TTSFR
16	4057.6	XylMan3GlcNAc2	QLTPTFYDN SC(AAVESACPR)PN#VSNIVR- H2O
17	4223.4	XylMan3FucGlcNAc2	QLTPTFYDN SCPN#VSNIVR
18	4984.7	XylMan3FucGlcNAc2	LYN#FSNTGLPDPTLN#TTYLQTLR

Table S2 Detailed information of the observed N-glycopeptides derived from HRP tryptic digest enriched with MTC. “N#”: N-glycosylation site

No.	m/z	Glycan composition	Peptide sequence
1	1842.1	XylMan3FucGlcNAc2	NVGLN#R
2	2175.4	Man3GlcNAc2Fuc	LYN#FSN#TGLP
3	2288.3	XylMan2GlcNAc2	SILLDN#TTSFR
4	2320.4	Man2GlcNAc2	MGN#ITPLTGTQGQIR
5	2542.2	XylMan3FucGlcNAc2	SSPN#ATDTIPLVR
6	2590.9	XylMan3FucGlcNAc2	PTLN#TTYLQTLR
7	2611.9	XylMan3GlcNAc2	MGN#ITPLTGTQGQIR
8	3089.9	Hex3HexNAc2Fuc1Xyl1	GLCPLNGN#LSALVDFDLR
9	3223.4	Man3FucGlcNAc2	SFAN#STQTFNFAFVEAMDR
10	3257.9	XylMan3FucGlcNAc2	SFAN#STQTFNFAFVEAMDR
11	3322.9	XylMan3FucGlcNAc2	QLTPTFYDN SCPN#VSNIVR
12	3369.2	XylMan3FucGlcNAc2	LYN#FSNTGLPDPTLN#TTYLQTLR
13	3384.1	Hex6HexNAc4Fuc2Xyl1	DSFRNVGLN#R
14	3527.4	XylMan3GlcNAc2	GLIQSDQELFSSPN#ATDTIPLVR
15	3606.5	XylMan3FucGlcNAc2	NQCRGLCPLNGN#LSALVDFDLR
16	3672.4	XylMan3FucGlcNAc2	GLIQSDQELFSSPN#ATDTIPLVR
17	3812.7	Hex2HexNAc2	LHFHDCFVNGCDASILLDN#TTSFRTEK
18	3895.5	XylMan3FucGlcNAc2	LHFHDCFVNGCDASILLDN#TTSFR
19	4057.8	XylMan3GlcNAc2	QLTPTFYDN SC(AAVESACPR)PN#VSNIVR- H2O
20	4224.1	XylMan3FucGlcNAc2	QLTPTFYDN SCPN#VSNIVR
21	4720.1	Man3FucGlcNAc2	LYN#FSNTGLPDPTLN#TTYLQTLR
22	4822.4	XylMan2FucGlcNAc2, XylMan2GlcNAc2	LYN#FSNTGLPDPTLN#TTYLQTLR
23	4839.7	XylMan3FucGlcNAc2	LYN#FSNTGLPDPTLN#TTYLQTLR
24	4853.2	Man3FucGlcNAc2, XylMan3FucGlcNAc2	LYN#FSNTGLPDPTLN#TTYLQTLR
25	4984.1	XylMan3FucGlcNAc2	LYN#FSNTGLPDPTLN#TTYLQTLR

Table S3 Detailed information of the observed N-glycopeptides derived from human serum tryptic digest. “N#”: N-glycosylation site

No.	m/z	Amino acid sequence	Number of N-glycosylation site
1	928.48	EWLPLN#R	1
2	941.44	TLFCN#ASK	1
3	961.54	FQN#ALLVR	1
4	1022.77	IPSQPPQIEHGTI N#SSR	1
5	1142.67	WEYC N#LTR	1
6	1190.79	EEQY N#STYR	1
7	1229.43	E N#ISDPTSPLR	1
8	1241.07	N#TAIWEAFK	1
9	1312.55	FLN N#GTCTAEGK	1
10	1367.96	IS N#SSDTVECECSENWK	1
11	1387.72	EV N#DTLLVNELK	1
12	1439.71	D N#YTKAEEILSR	1
13	1469.70	VYKPSAG N#NSLYR	1
14	1522.53	EDAL N#ETRESETK	1
15	1540.03	KQNNGAF N#ETLFR	1
16	1550.23	EDAAV N#CTDISVQK	1
17	1578.67	MEACML N#GTVIGPGK	1
18	1624.61	YEEQQLEIQ N#SSR	1
19	1640.21	TKPREEQF N#STFR	1
20	1658.87	QNCELFEQLGEYK	1
21	1674.18	SLEAI N#GSGLQMGLQR	1
22	1690.79	ERSWPAVG N#CSSALR	1
23	1724.81	IVSPEPGGAVGP N#LTCR	1
24	1744.13	NNALDFVTKSY N#ETK	1
25	1796.04	VVLHPN#YSQVDIGLIK	1
26	1820.21	VFHIHN#ESWVLLTPK	1
27	1826.56	N#HScSEGQISIFR	1

28	1841.87	YLPV N#SSLLTSDCSER	1
29	1853.54	N#GTGHG N#STHHGPEYMR	2
30	1875.41	YNSQ N#QSNNQFVLYR	1
31	1915.01	LGYN#A N#TSILSFQAVCR	2
32	1997.92	N#ECFLQHKDDNP NLPR	1
33	2046.02	IS N#SSDTVECECSENWK	1
34	2205.69	DVQIIVFPEDGIHGF N#FTR	1
35	2236.12	LNAAKALPQPQ N#VTSLLGCTH	1
36	2315.78	GIC N#SSDVR	1
37	2363.91	KTLFC N#ASKEWD N#TTTECR	2
38	2401.82	F N#LTETSEAEIHQSFQHLLR	1
39	2431.71	IIISPEE N#VTLTCTAENQLER	1
40	2488.01	HSGEEN#FYAYGFSVTYSCDPR	1
41	2562.22	KCPLPE N#ITHILVHGDDFSVNR	1
42	2608.31	ALGISPFHEHAEVVFTA N#DSGPRR	1
43	2619.08	HCDG N#VSSCGDHPSEGCF CPPDK	1
44	2635.86	QLVEIEKVVLHP N#YSQVDIGLIK	1
45	2747.41	KTTCNPCPLGYKEE N#NTGECCGR	1
46	2780.95	ITYSIVQTN#cSKEnFLFLTPDcK	1
47	2795.53	HGIQYFN N#NTQHSSLFMLNEVKR	1
48	2810.84	LPTQ N#ITFQTESSVAEQEAEFQSPK	1
49	2930.41	ICDLLVANNHFAHFFAPQN#LTNMNK	1
50	2841.97	FVEGSHN#STVSLTTK	1
51	2956.38	SRYPHKPEIN#STTHPGADLQEN#FcR	1
52	3052.09	N#LSSLESVQLDHNQLETLP GDVFGALPR	1
53	3130.91	NPPMGGNVVIFDTVITNQEEP YQ N#HSGR	1
54	3157.97	DFHSEYIVSAS N#FTSQLSSQVEQFLHR	1
55	3173.20	DKICDLLVANNHFAHFFAPQ N#LTNMNK	1
56	3217.06	RNPPMGGNVVIFDTVITNQEEP YQ N#HSGR	1

Table S4 Detailed information of the observed N-glycopeptides derived from human saliva.

“N#”: N-glycosylation site

No.	m/z	Amino acid sequence	Number of N-glycosylation site
1	1159.94	EEQFN#STFR	1
2	1174.75	EEQFN#STYR	1
3	1222.73	DAGVVcTN#ETR	1
4	1274.86	AAIPSALDTN#SSK	1
5	1460.28	NLFLN#HSEN#ATAK	2
6	1539.67	ADEGSLKN#ISITYK	1
7	1590.61	LQNNENN#IScVER	1
8	1607.79	FVEGSHN#STVSLTTK	1
9	1640.81	TKPREEQFN#STFR	1
10	1719.75	QVHFFVN#ASDVDNVK	1
11	1753.32	YTGN#ASALFILPDQDK	1
12	1867.25	LGAcN#DTLQQLMEVFK	1
13	1984.52	IYPGVDFGGEELN#VTFVK	1
14	2084.66	AYLLPAPPAPGN#ASESEEDR	1
15	2111.45	KPEGQPPQGGN#QSQGPPPRPG	1
16	2123.76	TLYETEVFSTDFSN#ISAAK	1
17	2164.63	VSN#QTLSLFFTVLQDVPVR	1
18	2178.85	SLTFN#ETYQDISELVYGAK	1
19	2183.59	GPPPPGKPQGPPQGDN#KSRSS	1
20	2205.31	DVQIIVFPEDGIHGFN#FTR	1
21	2315.11	VTQVYAEN#GTVLQGSTVASVYK	1
22	2339.85	GLTFQQN#ASSMcVPDQDTAIR	1
23	2366.05	AALAAFNAQNN#GSNFQLEEISR	1
24	2424.11	VPGN#VTAVLGETLKVPCHPcK	1
25	2496.37	PPGKPQGPPQGGN#QSQGPPPPPGKP	1
26	2587.60	N#VVDGQPFTNWYDN#GSNQVAFGR	1
27	2627.45	YWcKWN#NTGcQALPSQDEGPSK	1

28	2688.29	LGAcN#DTLQQLMEVFKFDTISEK	1
29	2724.39	ADGTVNQIEGEATPVN#LTEPAKLEVK	1
30	2739.85	LFGDKSLTFN#ETYQDISELVYGAK	1
31	2815.38	GPPPQGGN#KSQGPPPPGKPQGPPQGGSKS	1
32	2875.48	PPPGKPQGPPQGGN#KSQGPPPPGKPQGPP	1
33	2964.58	LSLHRPALEDLLLSEAN#LTcTLTGLR	1
34	3039.56	GPPPQGGN#KPQGPPPPGKPQGPPQGDN#KSQ	2
35	3198.61	QLAHQSN#STNIFFSPVSIATAFamLSLGTK	1
36	3239.82	GPPPQGGNKPQGPPPPGKPQGPPQGDN#KSRSS	1
37	3406.69	PGAPGVKGEPGAPGEN#GTPGQTGARGLPGERGRV GAP	1
