Electronic Supplementary Information (ESI) for Nanoscale

Facile synthesis of boronic acid-functionalized magnetic carbon nanotubes for highly specific enrichment of glycopeptides

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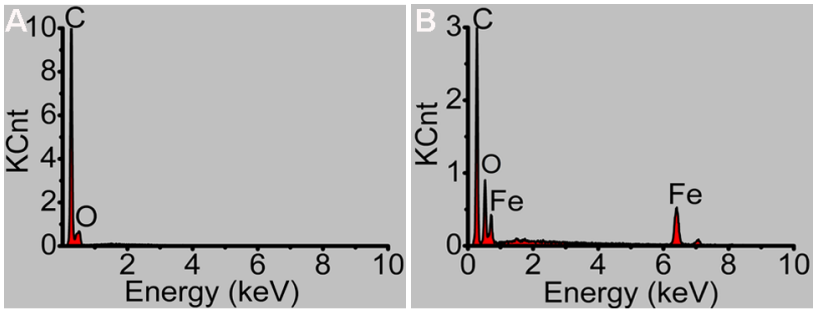

Fig. S1 Energy-dispersive X-ray spectra of (A) CNTs and (B) MCNTs.

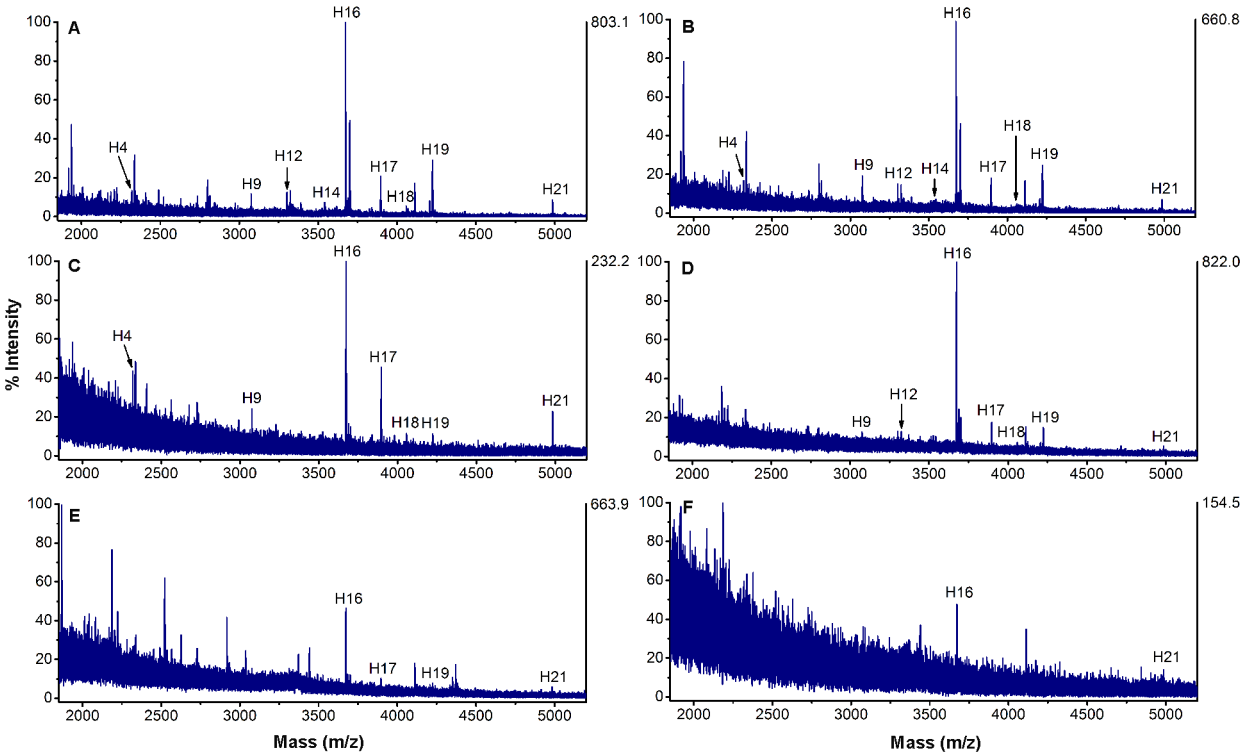

Fig. S2 MALDI mass spectra of tryptic digest of (A) 10, (B) 5, (C) 2, (D) 1, (E) 0.2 and (F) 0.1 ng μL^{-1} HRP after enrichment with commercial available APBA-agarose.

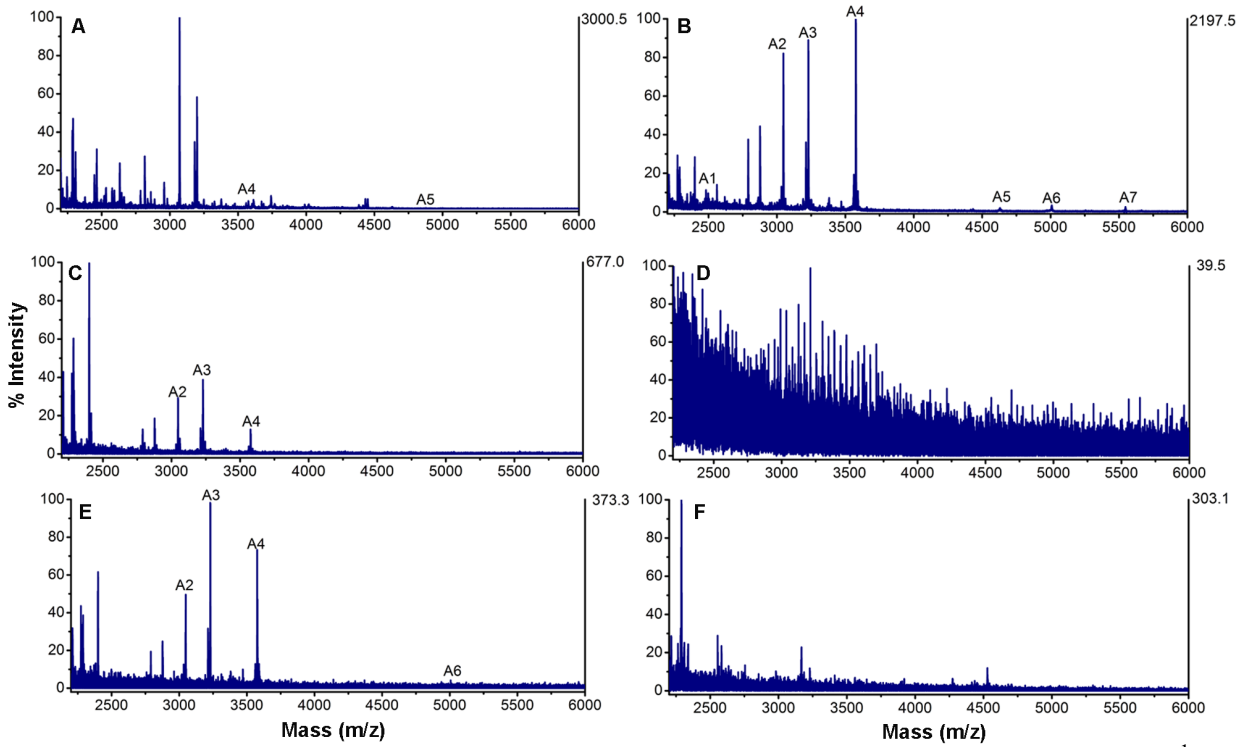

Fig. S3 MALDI mass spectra of tryptic digests of 5.0 (A,B,C) and 0.5 (D,E,F) ng μL^{-1} AF without (A, D) and with enrichment by APBA-MCNTs (B, E) and commercial available APBA agarose (C, F).

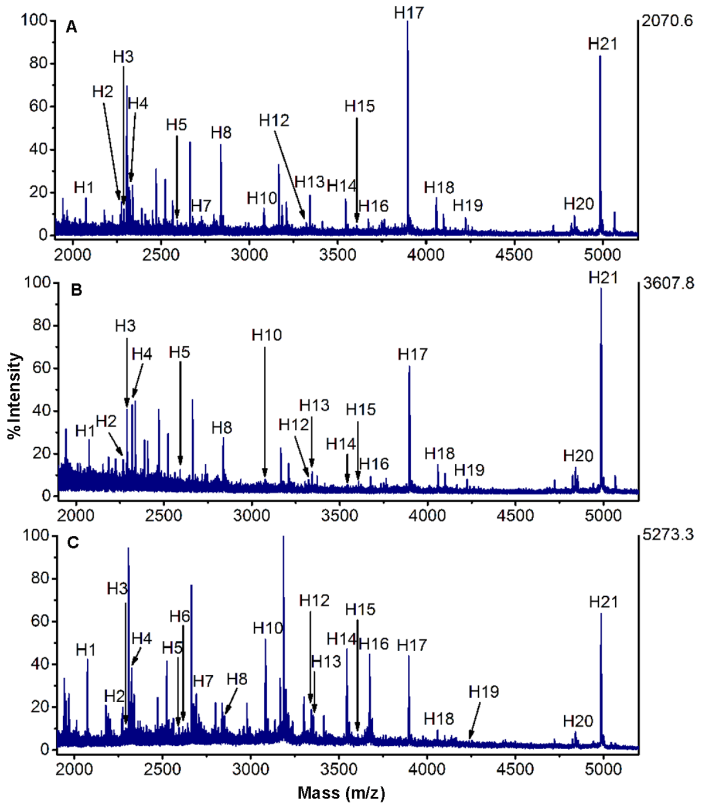

Fig. S4 MALDI mass spectra of the mixtures of tryptic HRP and tryptic BSA at the mass ratios of (A) 1:5, (B) 1:10 and (C) 1:50 upon enrichment with APBA-MCNTs.

Table S1. Detailed information of the glycopeptides enriched by APBA-MCNTs from HRP digest.[S1-S4]

No.	Observed m/z	Glycan composition	Amino acid sequence[a]
H1	2068.9	$XylMan_3FucGlcNAc_2$	PN#VSNIVR
H2	2276.2	$XylMan_2FucGlcNAc_2$	SILLDN#TTSFR
H3	2290.1	$XylMan_2GlcNAc_2$	SILLDN#TTSFR
H4	2321.2	$Man_2GlcNAc_2$	MGN#ITPLTGTQGQIR
H5	2591.3	$XylMan_3FucGlcNAc_2$	PTLN#TTYLQTLR
H6	2612.1	$XylMan_3GlcNAc_2$	MGN#ITPLTGTQGQIR
H7	2704.3	GlcNAc	GLIQSDQELFSSPN#ATDTIPLVR
H8	2850.4	FucGlcNAc	GLIQSDQELFSSPN#ATDTIPLVR
H9	3074.3	FucGlcNAc	LHFHDCFVNGCDASILLDN#TTSFR
H10	3087.4	$XylMan_3FucGlcNAc_2$	GLCPLNGN#LSALVDFDLR
H11	3275.2	$Man_3GlcNAc_2FucXyl$	SC(AAVESACPR)PN#VSNI VR
H12	3323.4	$XylMan_3FucGlcNAc_2$	QLTPTFYDNSCPN#VSNIVR
H13	3353.3	$XylMan_3FucGlcNAc_2$	SFAN#STQTFFNAFVEAMDR
H14	3525.6	$XylMan_3GlcNAc_2$	GLIQSDQELFSSPN#ATDTIPLVR
H15	3606.6	$XylMan_3FucGlcNAc_2$	NQCRGLCPLNGN#LSALVDFDLR
H16	3671.7	$XylMan_3FucGlcNAc_2$	GLIQSDQELFSSPN#ATDTIPLVR
H17	3894.6	$XylMan_3FucGlcNAc_2$	LHFHDCFVNGCDASILLDN#TTSFR
H18	4057.9	$XylMan_3GlcNAc_2$	QLTPTFYDNSC(AAVESACPR)PN#VSNIVR-H_2O
H19	4223.2	$XylMan_3FucGlcNAc_2$	QLTPTFYDNSC(AAVESACPR)PN#VSNIVR
H20	4837.2	$XylMan_3FucGlcNAc_2$, $XylMan_3GlcNAc_2$	LYN#FSNTGLPDPTLN#TTYLQTLR
H21	4983.2	$XylMan_3FucGlcNAc_2$, $XylMan_3FucGlcNAc_2$	LYN#FSNTGLPDPTLN#TTYLQTLR

[a] The *N*-glycosylation sites are marked with N#. GlcNAc = *N*-acetylglucosamine, Fuc = fuctose, Man = mannose, Xyl = xylose.

Table S2. Detailed information of the glycopeptides enriched by APBA-MCNTs from AF digest. [S2]

No.	Observed m/z	Glycan composition	Amino acid sequence[a]
A1	2494.9		y-NH_3 ion (+1) EVALATFNAESNGSYLQLVEISR
A2	3016.4		VVHAVEVALATFNAESNGSYLQLVEISR
A3	3219.2	GlcNAc	VVHAVEVALATFNAESN#GSYLQLVEISR
A4	3576.7	$Man_3GlcNAc_2$	b ion (+1) EVYDIEIDTLETCHVLDPTPLAN#C
A5	4638.6	$Gal_2GlcNAc_2Man_3GlcNAc_2$	VVHAVEVALATFNAESN#GSYLQLVEISR
A6	5005.1	$Gal_3GlcNAc_3Man_3GlcNAc_2$	VVHAVEVALATFNAESN#GSYLQLVEISR
A7	5545.8	$Gal_3GlcNAc_3Man_3GlcNAc_2$	RPTGEVYDIEIDTLETCHVLDPTPLAN#CSVR

[a] The *N*-glycosylation sites are marked with N#. GlcNAc = *N*-acetylglucosamine, Man = mannose, Gal = galactose.

References

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