

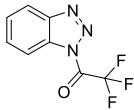
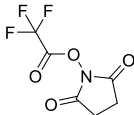
Supplementary Material

Cancer Vaccines Based on Fluorine-modified KH-1 Elicit Robust Immune Response

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Table S1. Screening of reaction conditions for trifluoroacetylation.

Reactant	Additives/Solvents	Results
$\text{F}_3\text{CCOOCOCF}_3$	DCM	The raw material remain, and the main product is multi-position substitution product
	DMAP/Py	The product system is complex and cannot be analyzed
	Py	The product system is complex and cannot be analyzed
	MeOH	No reaction
	$(\text{CH}_3)_2\text{CHOH}$	No reaction
	$(\text{CH}_3)_3\text{COH}$	No reaction
	DMAP/MeOH	No reaction
	TEA/MeOH	No reaction
$\text{F}_3\text{CCOOCH}_3$	MeOH	No reaction
	TEA/MeOH	No reaction
	DMAP/MeOH	The main product is the target product
	MeOH	No reaction
	DCM	A large amount of raw material remain, and the main product generated is not the target product
	DCM	New product is formed, but it deteriorates quickly

AB Sciex TOF/TOF™ Series Explorer™ 72115

TOF/TOF™ Linear Spec #1 MC=>SM15[BP = 58317.2, 445]

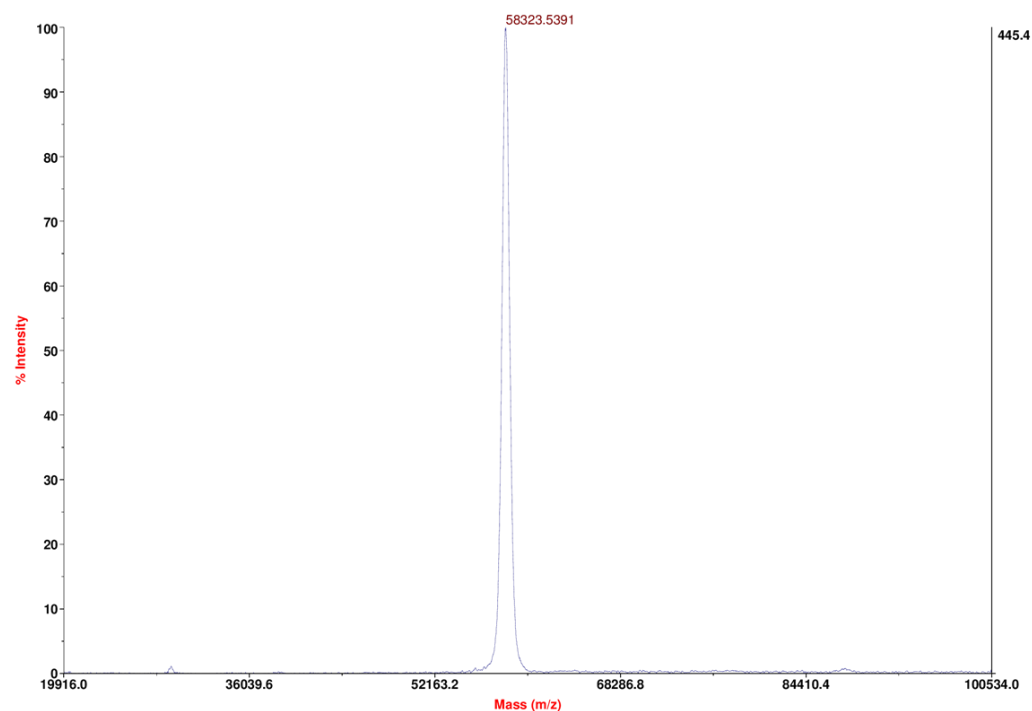


Figure S1. The MALDI-TOF-MS result of CRM197

AB Sciex TOF/TOF™ Series Explorer™ 72115

TOF/TOF™ Linear Spec #1 MC=>SM13[BP = 67285.0, 10]

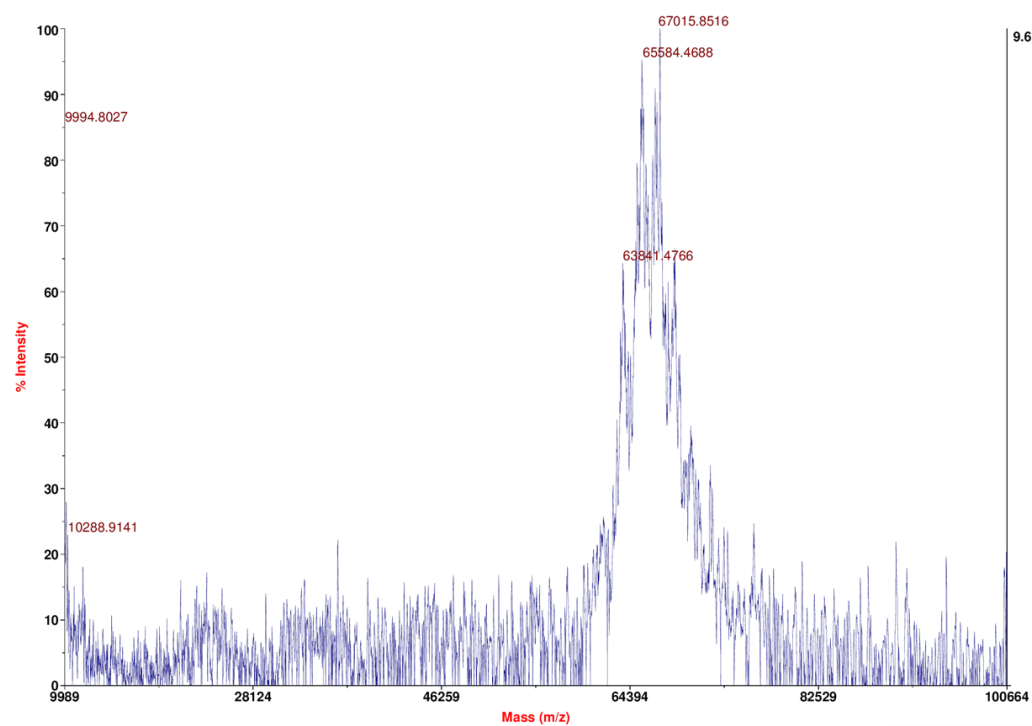


Figure S2. The MALDI-TOF-MS result of KH-1-CRM197

AB Sciex TOF/TOF™ Series Explorer™ 72115

TOF/TOF™ Linear Spec #1 MC=>SM13[BP = 70133.6, 13]

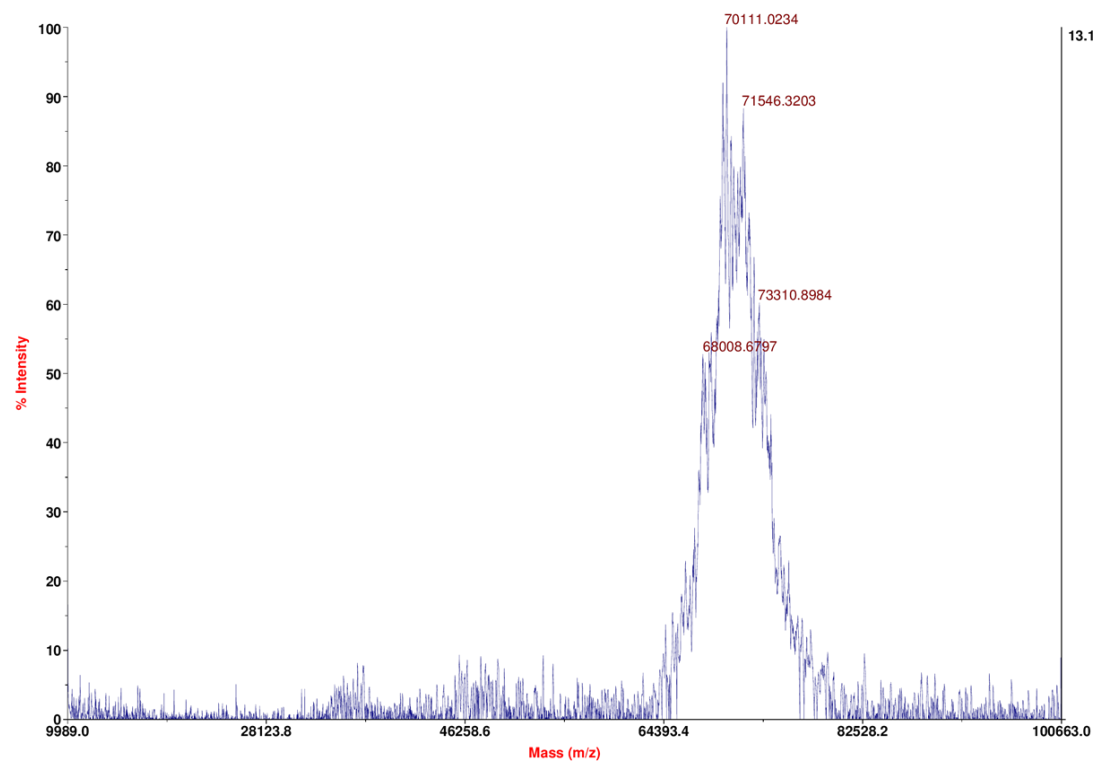


Figure S3. The MALDI-TOF-MS result of KH-1-DF-CRM197

AB Sciex TOF/TOF™ Series Explorer™ 72115

TOF/TOF™ Linear Spec #1 MC=>SM13[BP = 67908.0, 13]

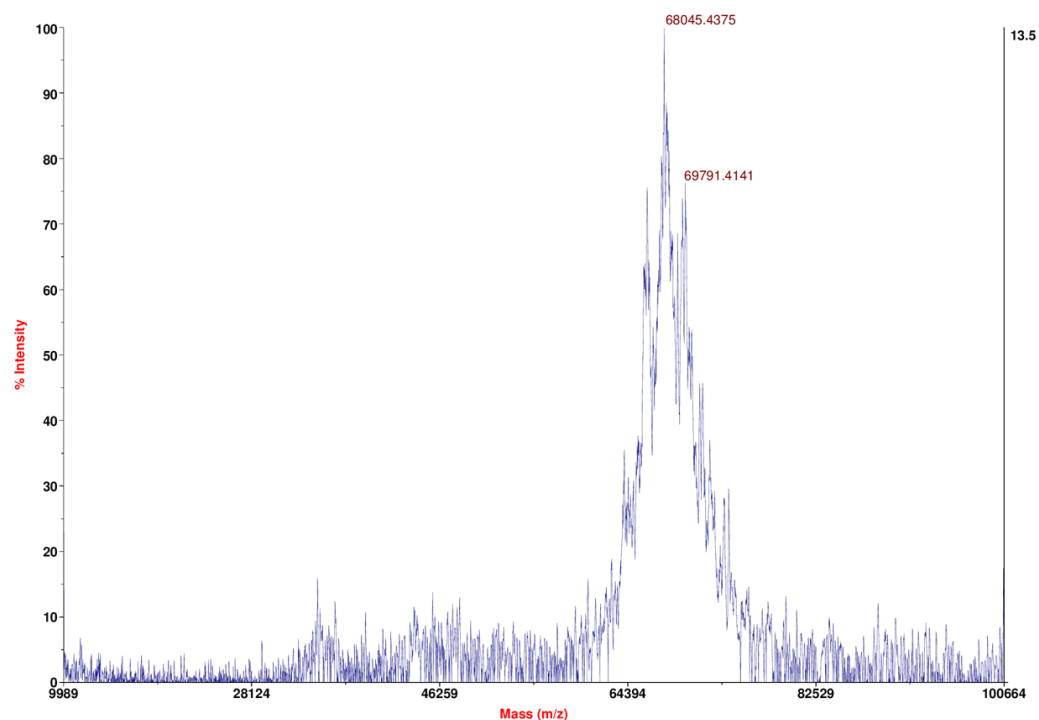


Figure S4. The MALDI-TOF-MS result of KH-1-TF-CRM197

AB Sciex TOF/TOF™ Series Explorer™ 72115

TOF/TOF™ Linear Spec #1 MC[BP = 66436.6, 1023]

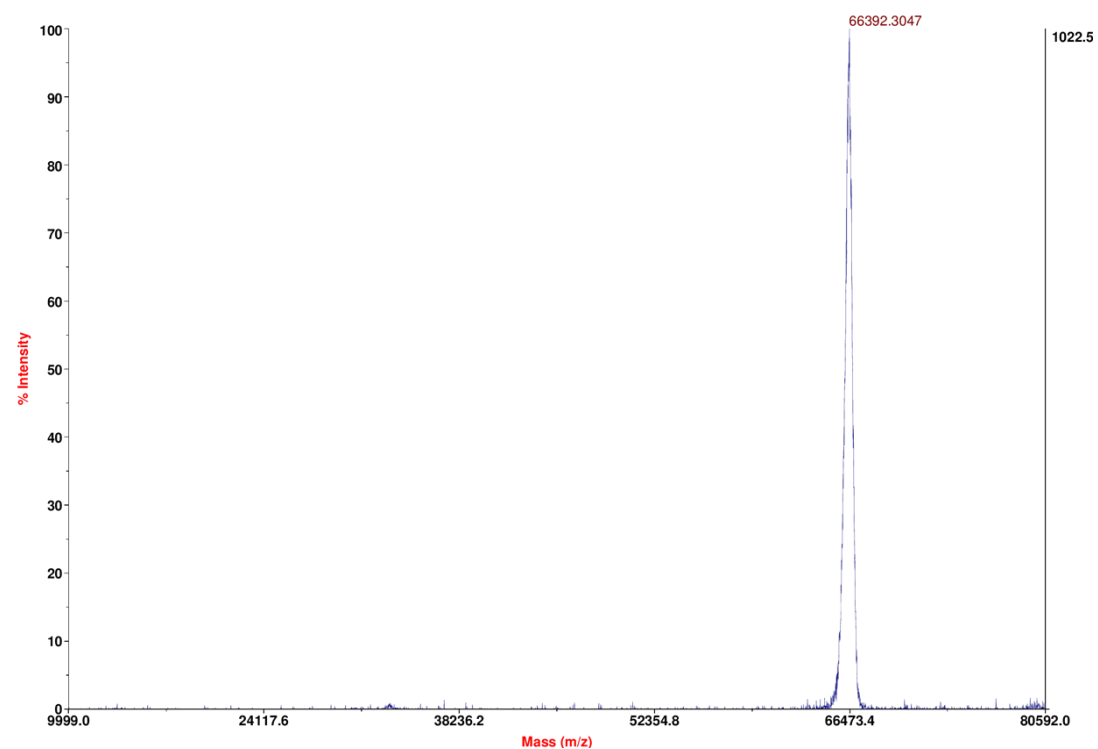


Figure S5. The MALDI-TOF-MS result of BSA

AB Sciex TOF/TOF™ Series Explorer™ 72115

TOF/TOF™ Linear Spec #1 MC=>SM21[BP = 80786.7, 39]

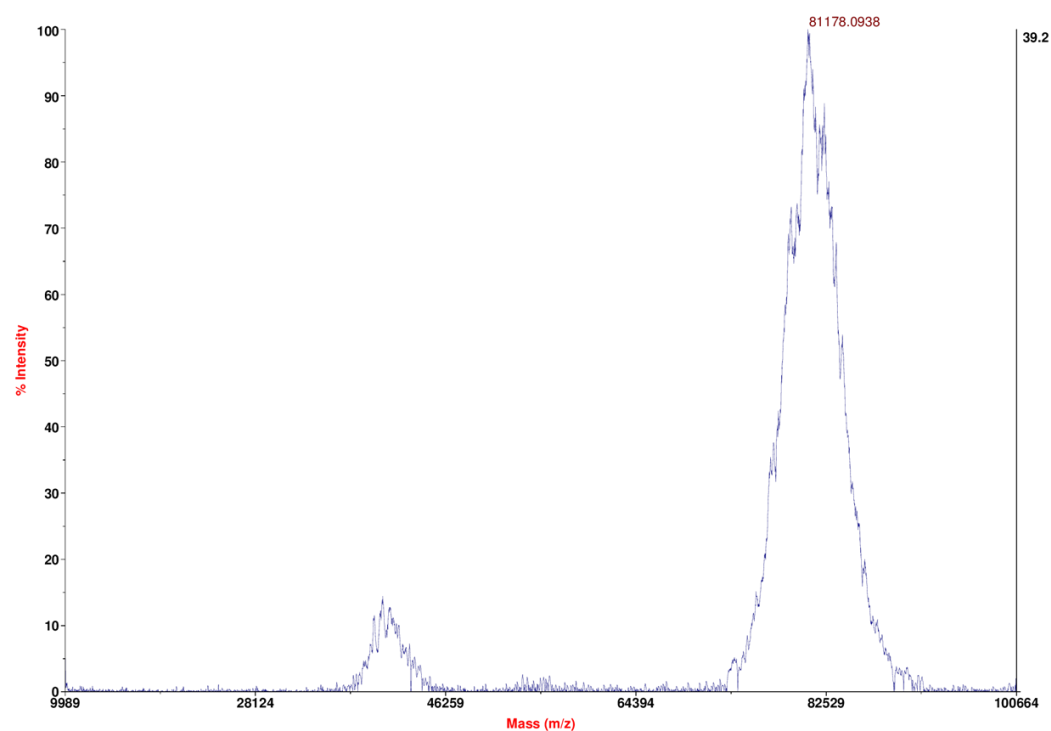


Figure S6. The MALDI-TOF-MS result of KH-1-BSA

AB Sciex TOF/TOF™ Series Explorer™ 72115

TOF/TOF™ Linear Spec #1 MC=>SM21[BP = 79742.7, 33]

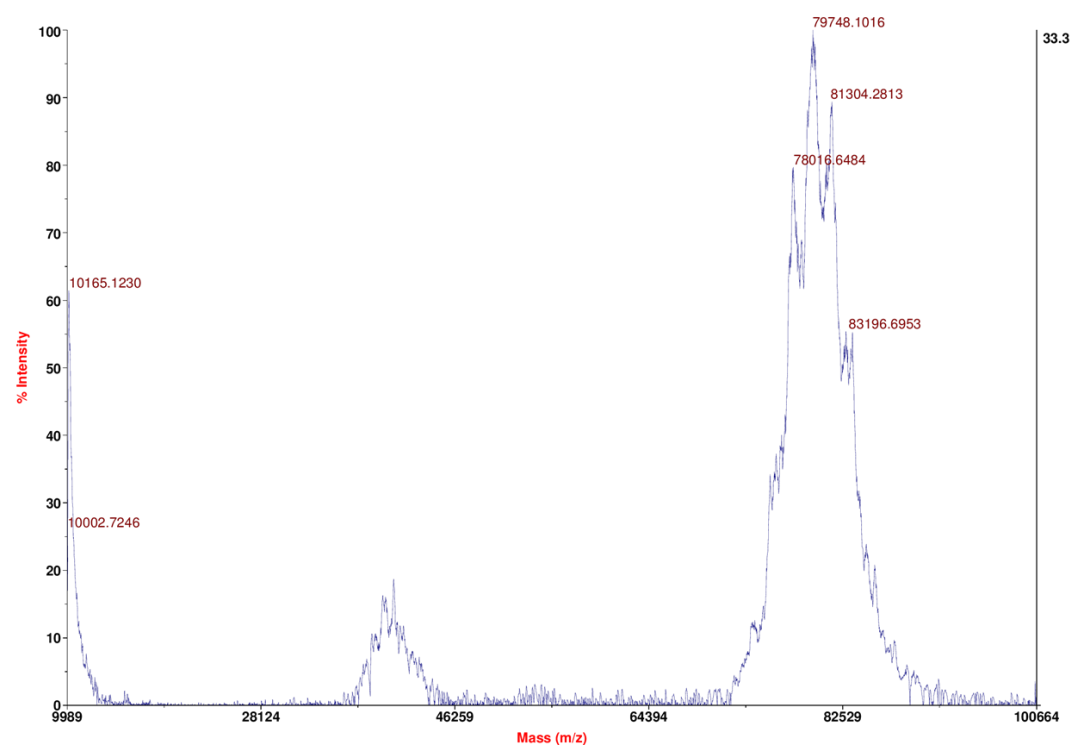


Figure S7. The MALDI-TOF-MS result of KH-1-DF-BSA

AB Sciex TOF/TOF™ Series Explorer™ 72115

TOF/TOF™ Linear Spec #1 MC=>SM21[BP = 83936.0, 53]

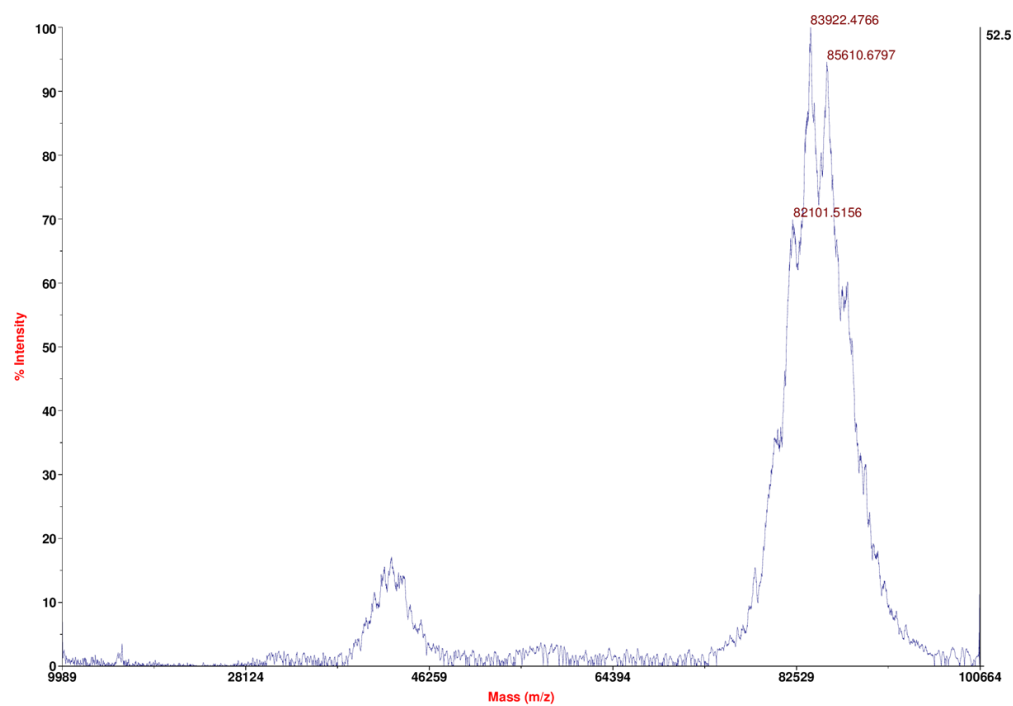


Figure S8. The MALDI-TOF-MS result of KH-1-TF-BSA

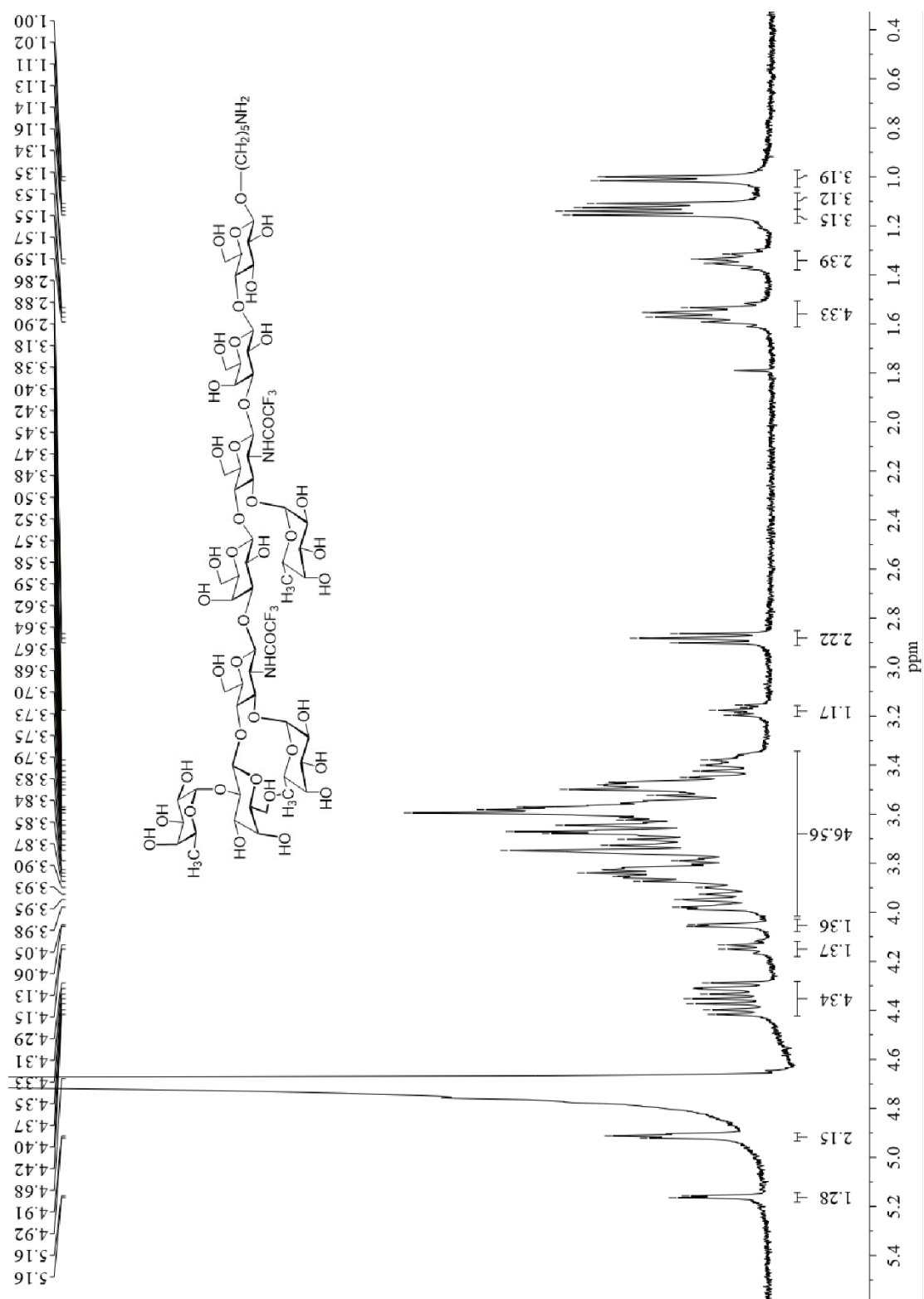


Figure S9. ¹H NMR of compound 1-2 (400 MHz, D₂O)

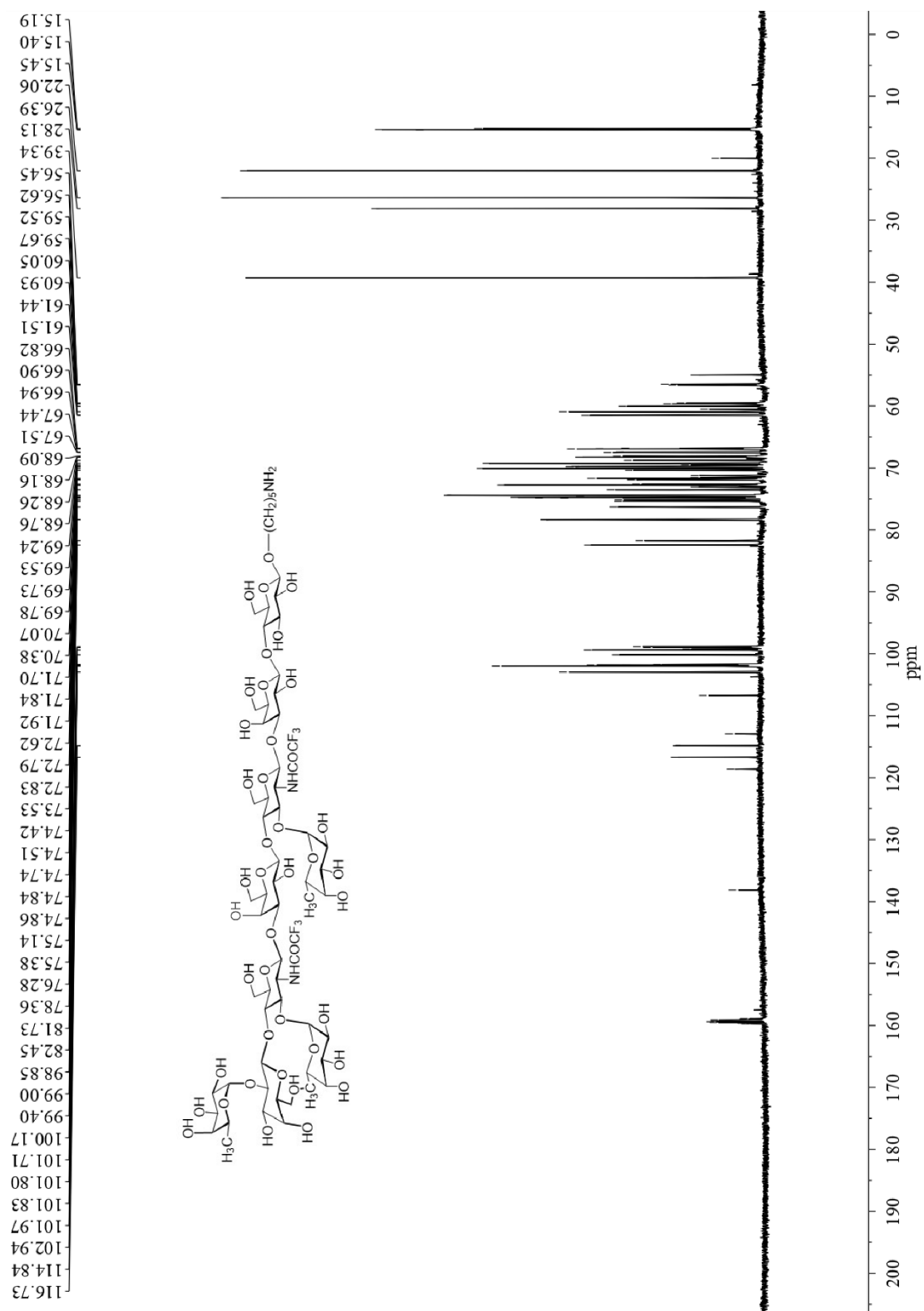


Figure S10. ^{13}C NMR of compound 1-2 (151 MHz, D_2O)

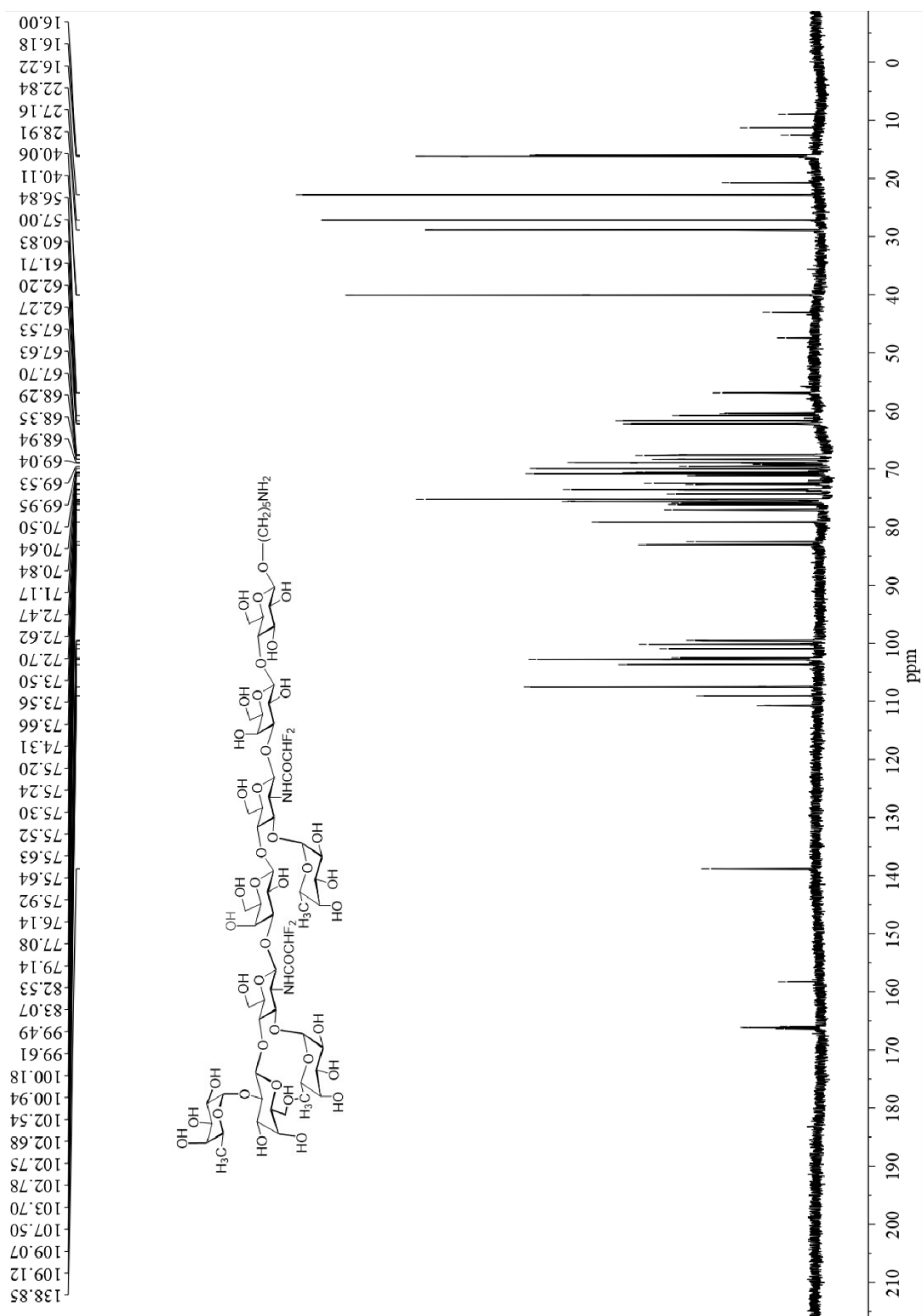


Figure S12. ^{13}C NMR of compound 1-3 (151 MHz, D_2O)