Supporting Information

Materials and Methods

Materials. Deuterium oxide (D_2O) was obtained from Sigma (St. Louis, MO, USA). Activated partial thromboplastin time (APTT) assay kits (Lot No. 109445633), prothrombin time (PT) assay kits (Lot No. T1373659), thrombin time (TT) assay kits (Lot No. B175002), calcium chloride solution (0.02 M, Lot No. 11020964) and standard human plasma (Lot No. 047B-C080A) were obtained from MDC Hemostasis, Germany. Coagulation factors, including FVII (Lot No. 101105L-PK:1), FIXa (Lot No. 111024D-PK:1), FXIa (Lot No. 0713) and FXIIa (Lot No. 110614A-PK:1); kallikrein chromogenic substrate CS-31(02) (Lot No. 20515-1-PK:5); chromogenic assay kit for measuring FVIII: C in concentrates (Lot No. 24801-PK:6); HCII assay reagents, including HCII (Lot No. 130626E-PK:1), human thrombin (FIIa) (Lot No. 100628A-PK:2), thrombin chromogenic substrate CS-01(38) (Lot No. 11204-1-PK:1), adenosine diphosphate (ADP) and FIXa chromogenic substrate CS-51(09) (Lot No. 10502-1-PK:1); Biophen Heparin Anti-FIIa kits (Lot No. 31705-PK:2); Biophen Heparin Anti-FXa kits (Lot No. 31704-PK:1); and Biophen FVII kits (Lot No. 11301-PK:1) were purchased from Hyphen Biomed (France). Human coagulation FVIII (Lot No.270LLGR) was obtained from Bayer Healthcare, LLC (USA). FXIa chromogenic substrate S-2366 (Lot No. NO215115) was purchased from Chromogenix (Italy). FXIIa chromogenic substrate Pefachrome (Lot No. 41230001/092-02) was purchased from Pentapharm (Switzerland). Dermatan sulfate (DS) was obtained from Sigma (St. Louis, MO, USA). LMWH (enoxaparin sodium and enoxaparin sodium injection, 0.4 mL:4000 IU, Lot No. 24239) was purchased from Sanofi-aventis (France). Oversulfated chondroitin sulfate (OSCS) was purchased from the National Institute for Control of Pharmaceutical and Biological Products (China). Chloral hydrate (Lot No. 20090630) was purchased from Tianjin Kemiou Chemical Reagent (China). Rabbit brain powder was prepared according to the conventional method. A 2% rabbit brain powder infusion was prepared using 0.86% NaCl prior to use in the thrombosis experiment. All of the other chemicals and reagents used were of analytical grade.

Deacetylation-deaminative Depolymerization of 1. **1** was *N*-deacetylated with hydrazine hydrate containing 1% hydrazine sulfate at 90 ℃ for 24 h. The *N*-deacetylated sample of **1** was then cleaved with nitrous acid at room temperature for 10 min, reduced with 0.25 M $NaBH_4$ at 50 ℃ for 2 h, dialyzed with a molecular weight cut-off of 100-500 Da (Spectrum Laboratories Inc., USA) and lyophilized.

Preparation of Oligosaccharides from 2. A portion (1000 mg in 10 mL of water) of **2** was filtered through a 0.22 mm syringe filter and fractionated on a Bio-Gel P6 column (2 cm × 1.4 m) eluted with 0.2 M NaCl at a flow rate of 8.6 mL/h or on a Bio-Gel P10 column (2 cm × 2 m) eluted with 0.2 M NaCl at a flow rate of 27.6 mL/h. Approximately 2 mL fractions were collected and assayed for total sugar using the phenol-sulfuric acid method (1), for uronic acid using the carbazole method (2) or for Fuc using the cysteine-phenol-sulfuric acid method (3). The fraction numbers were plotted versus absorbance. Fractions under each peak containing oligosaccharides of the same size were pooled. The resulting oligosaccharides were further purified by rechromatography on the Bio-Gel P6 and P10 columns several times to ensure size homogeneity as determined by analytical GPC-HPLC. The pure oligosaccharides were lyophilized and desalted by GPC on a Bio-Gel P-2 column.

Analytical GPC-HPLC Fractionation of Oligosaccharides. Aliquots (50-100 μL) of 2-4 mg/mL oligosaccharide samples were size fractionated by HPLC with a Superdex Peptide 10/300 GL column with 0.2 M NaCl as the eluent at a flow rate of 0.4 mL/min monitored by a differential refraction detector.

NMR Methods. NMR analyses of **1**-**8** were performed in D_2O at 298 K on a Bruker Advance 600 or 800 MHz spectrometer equipped with a $^{13}C/^{1}H$ dual probe in FT mode, as described previously (4). All samples were previously dissolved in deuterium oxide (D_2O, 99.9% D) and lyophilized three times to replace exchangeable protons with D_2O. The lyophilized samples were then dissolved in D_2O at a concentration of 20-30 g/L.

ESI-Q-TOF-MS Analysis. Negative-ion ESI-MS was conducted on a micrOTOF-QII mass spectrometer (Bruker-Daltonik, Germany). Data analysis was performed using Bruker Compass Data-Analysis 4.0 software (BrukerDaltonik, Germany). The MS spectrometric conditions were as follows: ESI in negative ion mode, capillary voltage of 2500 V, nebulizer pressure of 0.8 bar, drying gas flow rate of 5.0 L/min, and drying gas temperature of +180 ℃. The mass spectra of the oligosaccharides were acquired in scan mode (m/z scan range 400-3000).

Inhibition of Intrinsic Tenase Complex. The inhibition of intrinsic tenase complex was determined using the previously described method (5, 6) with modifications and the reagents in the BIOPHEN FVIII: C kit. Different concentrations of **1**-**8** were incubated with 2 IU/mL FVIII (30 μL), 60 nM FIXa (30 μL), 47 nM FIIa in 0.32 mg/mL synthetic phospholipids, 20 mM Tris-HCl and 12 mM $CaCl_2$ in a final volume of 90 μL for 2 min at 37 ℃. The reaction was initiated by the addition of 30 μL of 50 nM FX containing 20 mM Tris-HCl, 0.3% fibrin polymerization inhibitor and 0.1% PEG-8000 (pH 7.5) for 1 min at 37 ℃. A volume of 30 μL of 8.40 mM chromogenic substrate S-2765 was added. The amount of FXa formed was determined by comparing the rate of S-2765 substrate hydrolysis to a standard curve (5) at a wavelength of 405 nm using a Bio-Tek Microplate Reader (ELx 808, USA) at 37 ℃.

Inhibition of Human FVIIa. Inhibition assays of FVIIa were performed according to the manufacturer's recommended procedures with modifications using assay kits (BIOPHEN FVII). The reactant solutions containing 30 μL of FVII (1 μg/mL) in 20 mM Tris-HCl (pH 7.4), 30 μL of Calcium-Thromboplastin and 30 μL of various concentrations of a sample in 20 mM Tris-HCl (pH 7.4) were incubated at 37 ℃ for 2 min. A 60 μL aliquot of human FX was then added. After incubation at 37 ℃ for 1 min, 60 μL of chromogenic substrate S-2765 solution was added. The absorbance at a wavelength of 405 nm was measured using a Bio-Tek Microplate Reader.

Inhibition of Human FIXa. Inhibition assays of FIXa were performed in reaction buffer containing 0.15 M NaCl, 20 mM HEPES (pH 7.4), 2 mM $CaCl_2$, 1 mg/mL BSA and 0.1% PEG-8000 (7). 100 μL of mixtures containing final concentrations of 0 or 250 nM of AT, 25 nM of FIXa, 33% ethylene glycol, and various concentrations of **1**-**8** or LMWH were incubated at 25 ℃ for 1 min. Then, 20 μL of chromogenic

substrate CS-51(09) (2.5 mM) was added. The rate of chromogenic substrate cleavage was determined by monitoring the change in absorbance at 405 nm over the course of 5 min.

Inhibition of Human FXIa. Inhibition assays of FXIa were performed in TS/PEG buffer (0.02 M Tris-HCl (pH 7.4), 0.15 M NaCl and 0.1% PEG 8000). Mixtures containing 30 μL of AT (400 nM) and 30 μL of various concentrations of sample were incubated at 25 ℃ for 1 min. A 30 μL aliquot of FXIa (40 nM) was then added. After incubation at 25 ℃ for 1 min, 30 μL of chromogenic substrate S-2366 (2 mM) solution was added. The absorbance of the reaction mixture was measured at 405 nm.

Inhibition of Human FXIIa. Inhibition assays of FXIIa were performed in TS/PEG buffer (0.02 M Tris-HCl (pH7.4), 0.15 M NaCl and 0.1% PEG 8000). Mixtures containing 40 μL of AT (100 μg/mL), 40 μL of FXIIa (200 ng/mL) and 40 μL of various concentrations of sample were incubated at 37 ℃ for 2 min. Then, 40 μL of chromogenic substrate Pefachrome FXIIa (4 mM) solution was added. The absorbance of the reaction mixture was determined at 405 nm.

Inhibition of Human FIIa in the Presence of HCII. Inhibition of FIIa by human HCII was measured with thrombin chromogenic substrate CS-01(38). A mixture containing 30 μL of HCII (1 μM) and 30 μL of various amounts of each sample was incubated at 37 ℃ for 2 min. A 30 μL aliquot of 20 NIH/mL FIIa was then added. After incubation at 37 ℃ for 1 min, 30 μL of 4.5 mM thrombin chromogenic substrate CS-01(38) solution was added. The absorbance of the reaction mixture was read at 405 nm.

Inhibition of Human FIIa and FXa in the Presence of AT. The anti-FIIa and anti-FXa activities in the presence of AT were measured using Biophen Heparin Anti-IIa kits and Biophen Heparin Anti-FXa kits. A mixture containing 30 μL of samples and 30 μL of 1 IU/mL AT was incubated at 37 ℃ for 2 min; 30 μL of 24 NIH/mL FIIa (or 8 μg/mL bovine FXa) was added. After incubation for 2 min (or 1 min for FXa), the residual thrombin or FXa activity was measured by the addition of 30 μL of 1.25 mM thrombin chromogenic substrate CS-01(38) or 1.2 mM FXa chromogenic substrate SXa-11. The absorbance of the reaction mixture was read at 405 nm.

Data Analysis. For the anti-tenase complex, anti-FIXa, anti-FIIa, anti-FXa, anti-FVIIa, anti-FXIa and anti-FXIIa assays, each compound concentration was plotted versus the relative proportion of remaining free coagulation factor activity, with actions for factor alone (no compound) normalized to 1. The EC_{50} was determined by fitting the data to the equation (5): $B=(EC_{50})^n/((EC_{50})^n+[I]^n)$,where B represents the percentage of remaining free coagulation factor activity, [I] represents the concentration of compound used as an inhibitor, EC_{50} represents the concentration of compound that causes a 50% inhibition of coagulation factor activity, and n represents the pseudo-Hill coefficient.

Effects of 5 on Venous Thrombosis. Male Sprague Dawley rats (body weight 250-300 g) were randomly segregated into 4 groups of 8 animals each. The normal control group, positive control rat group and two doses of compound **5** groups were administered dorsally and subcutaneously with 1 mL/kg body weight of 0.86% NaCl, 3.6 mg/kg body weight of LMWH, and 5 and 10 mg/kg body weight of **5**, respectively. After 60 min, rats were anesthetized by 0.3 mL/100 g body weight of 10% chloral hydrate, the inferior vena cava and its branches were isolated, and the branch of inferior vena cava under the left renal vein was ligated. A volume of 1 mL/kg body weight of 2% tissue thromboplastin was injected from the femoral vein. After 20 s, stasis was established by ligating the edge of the left renal vein. After a 20 min stasis, the cavity was then reopened, the ligated segment was opened longitudinally, and the thrombus formed was removed, rinsed, dried for 24 h at 50 ℃, and then weighed. For each group (n = 8), the mean thrombus mass was determined and then expressed as a percentage of thrombus mass. The absence of any inhibition of thrombus formation was represented as 100%.

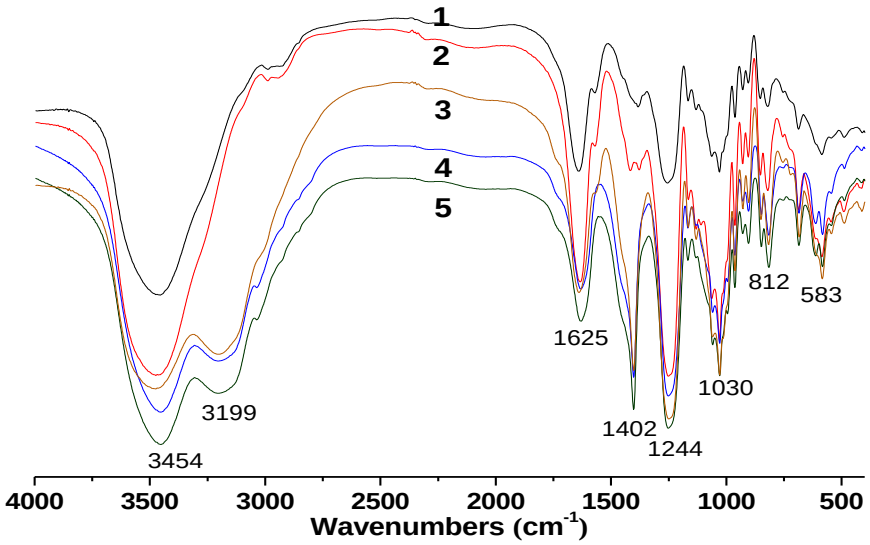


Fig. S1. FI-IR spectra of **1**-**5**. FI-IR spectra of **1**-**5** show several bands corresponding to sulfate ester: the peaks at 1244 and 852 cm^{-1} are derived from the stretching vibration of S=O of sulfate and the bending vibration of C-O-S of sulfate in an axial position, respectively. The signals at 3454 and 1030 cm^{-1} are from the stretching vibration of O-H and C-O, respectively. In addition, signals at 1625 cm^{-1} are due to the asymmetric stretching vibration of C=O of *N*-acetylgalactosamine and glucuronic acid; 2923 cm^{-1}, the stretching vibration of C-H; 1416 cm^{-1}, the symmetric stretching vibration of COO^- of glucuronic acid and the stretching vibration of C-O within COOH.

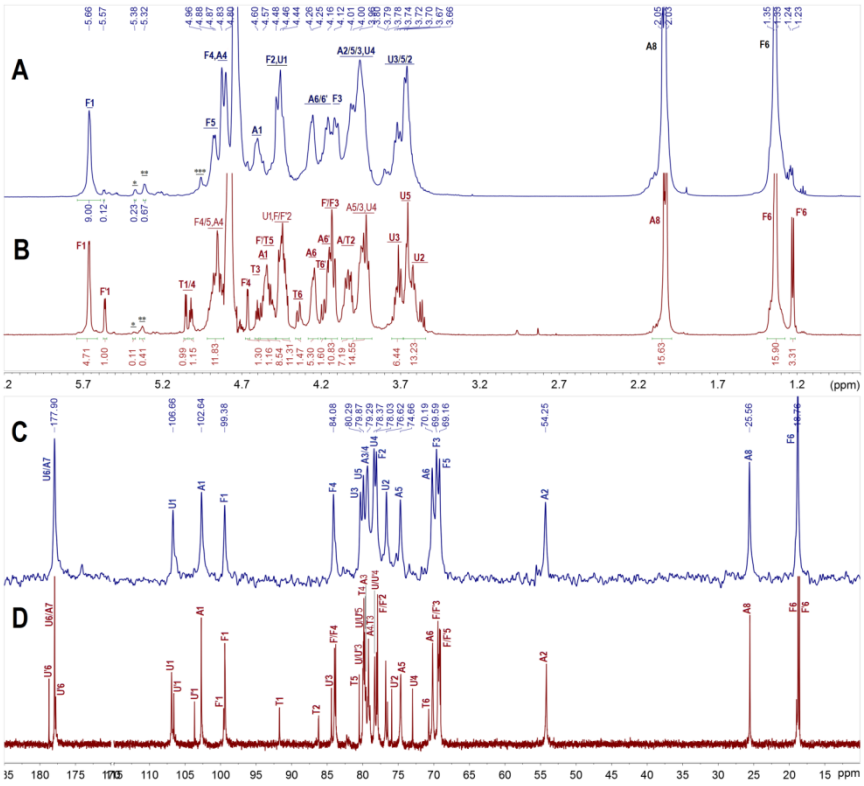


Fig. S2. ^{1}H (*A*) and ^{13}C NMR (*B*) spectra of **1** and **2**. Labels U, F and A represent GlcA, Fuc and GalNAc residues, respectively, in figures *A*, *B*, *C* and *D*. Labels U' and F' represent GlcA and Fuc residues, respectively, in the middle of the chains, and label T represents an anTal-ol residue at the new reducing end in figures *B* and *D*.

In the ^{1}H NMR spectrum of **1**, the signals observed in the region of approximately 5.57-5.66 ppm can be assigned to H signals of terminal α-L-Fuc. The corresponding C signal of terminal α-L-Fuc was observed at approximately 99.38 ppm. The spin coupling system in the 2D NMR spectra showed that H-2 and H-4 chemical shifts (~4.48 and ~4.83 ppm) of the Fuc residue were shifted downfield by approximately 0.6-0.7 ppm and that the C-2 and C-4 chemical shifts (~78.0 and ~84.1 ppm) of the Fuc residue were shifted downfield by approximately 5-7 ppm compared with those from standard Fuc, indicating that this Fuc residue was sulfated or substituted by other sugar residues at both the C-2 and C-4 positions. Based on 2D NMR analysis, the weak signals at ~5.38 and 5.32 ppm were from Fuc residues that were sulfated or substituted by other sugar residues at C-2 and at both the C-3 and C-4 positions. The GalNAc/GlcA signals assigned by the ^{1}H/^{13}C and 2D NMR spectra demonstrated that GalNAc in **1** were primarily sulfated or substituted by other sugar residues at both the C-4 and C-6 positions and that GlcA in **1** should be sulfated or substituted by other sugar residues at C-3 or both the C-3 and C-2 positions.

The ^{1}H and ^{13}C NMR spectra of **2** showed clearer signals than those of **1**. **1** and **2** contained similar substitution sites by a sulfated group or other sugar residues for Fuc according to the ^{1}H/^{13}C signals. For **2**, the H-1 and C-1 resonances from the sugar unit at the new reducing end were observed in the 5.0-5.1 ppm and 91-92 ppm regions, respectively. Identification of the resonances within the 2,5-anhydro-D-talose system was relatively straightforward according to proton spectra assignments observed for 2, 5-anhydro-D-talitol rings.

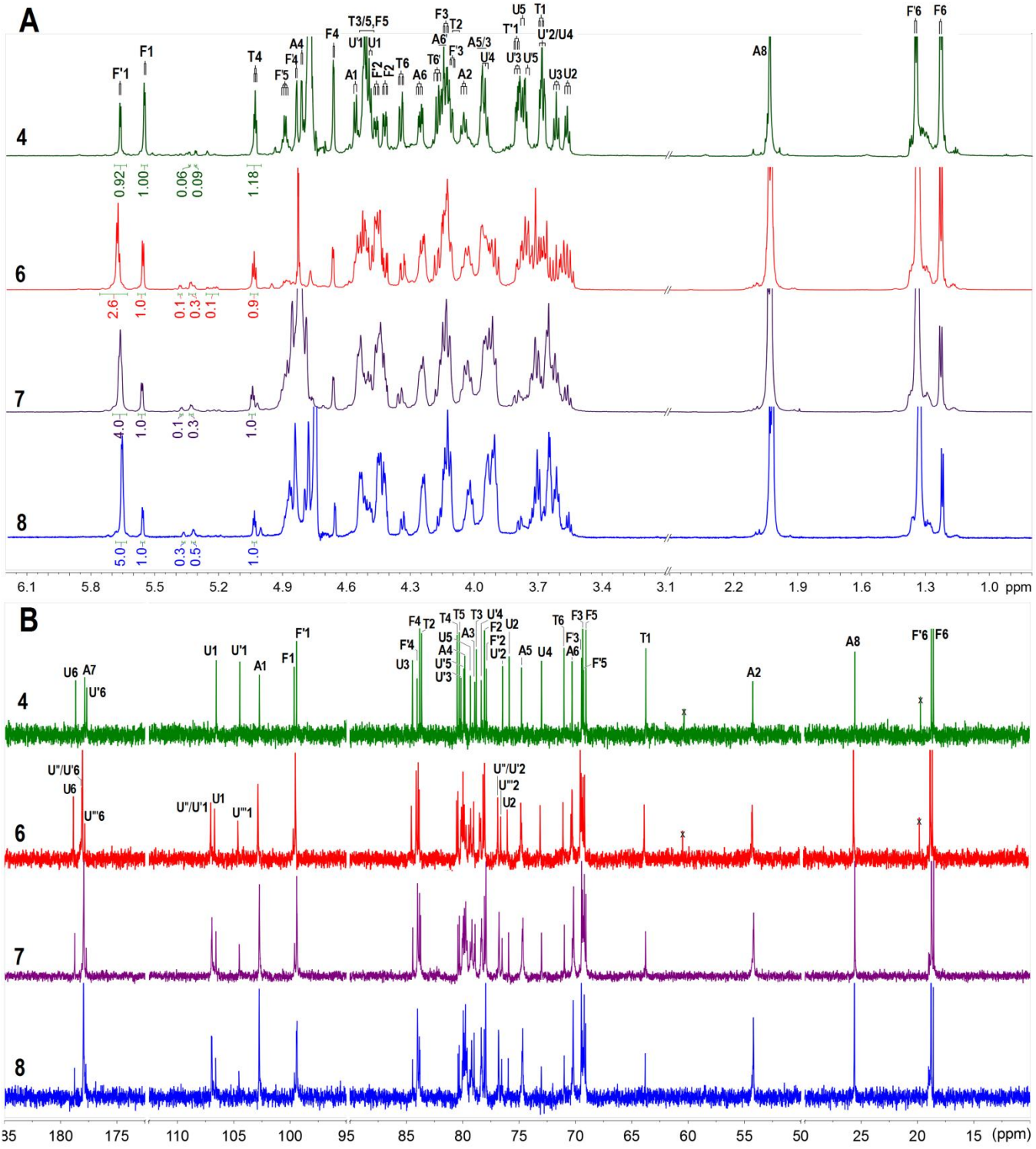


Fig. S3. ^{1}H- (*A*) and ^{13}C NMR (*B*) spectra of **4**, **6**, **7** and **8**. Labels U, U', U", U"', A, F and F' are the same as those described in Table S1 and Table S2.

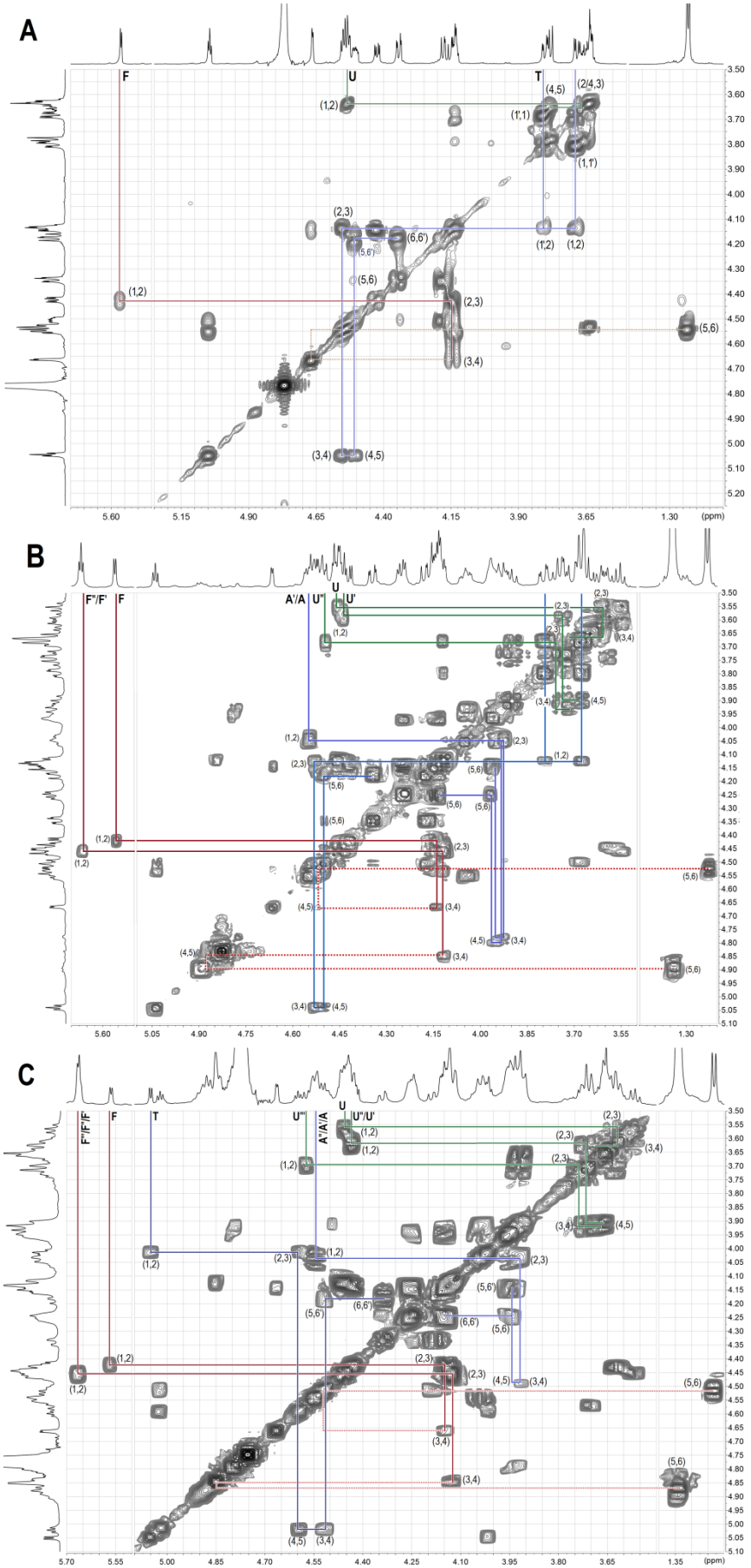


Fig. S4. ^{1}H-^{1}H COSY spectra of **3** (*A*), **5** (*B*), and **7** (*C*). Labels are the same as those described in Table S1 and Table S2.

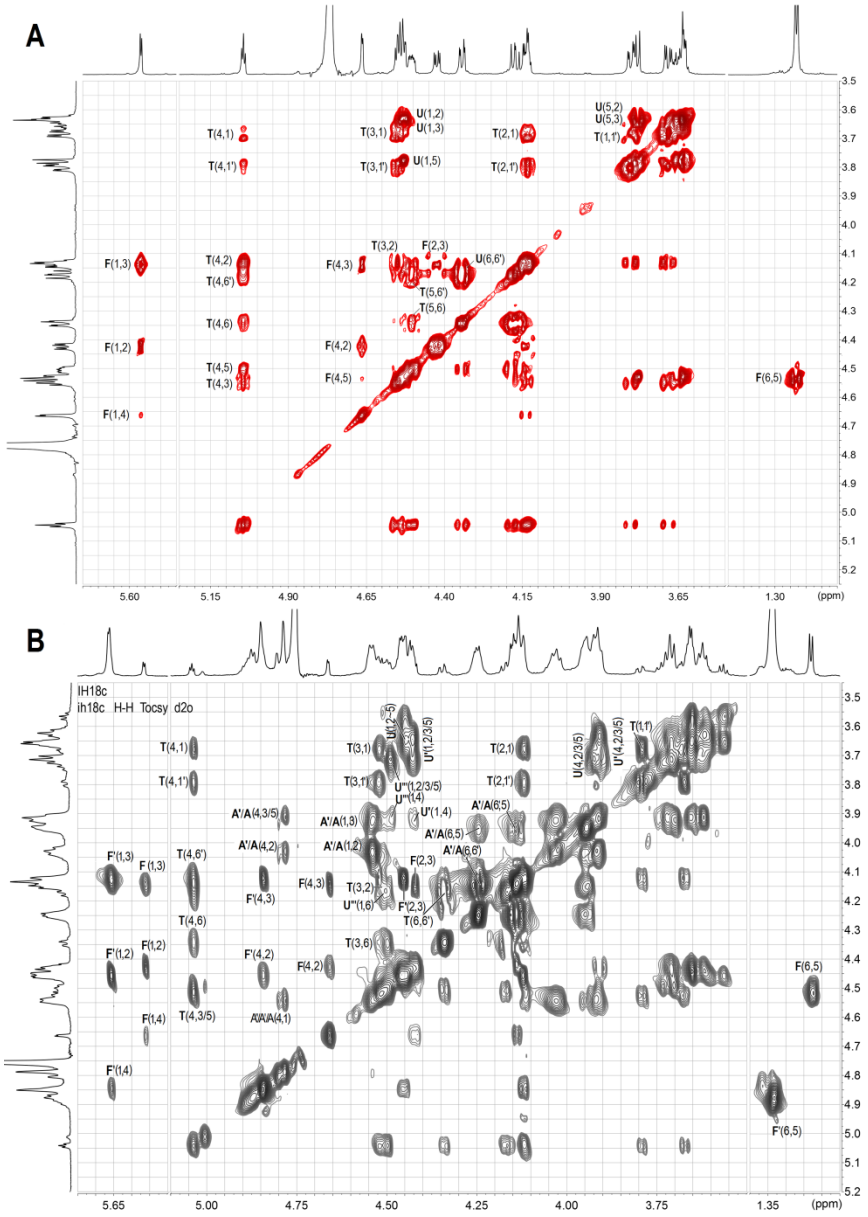


Fig. S5. ^{1}H-^{1}H TOCSY spectra of **3** (*A*) and **8** (*B*). Labels are the same as those described in Table S1 and Table S2.

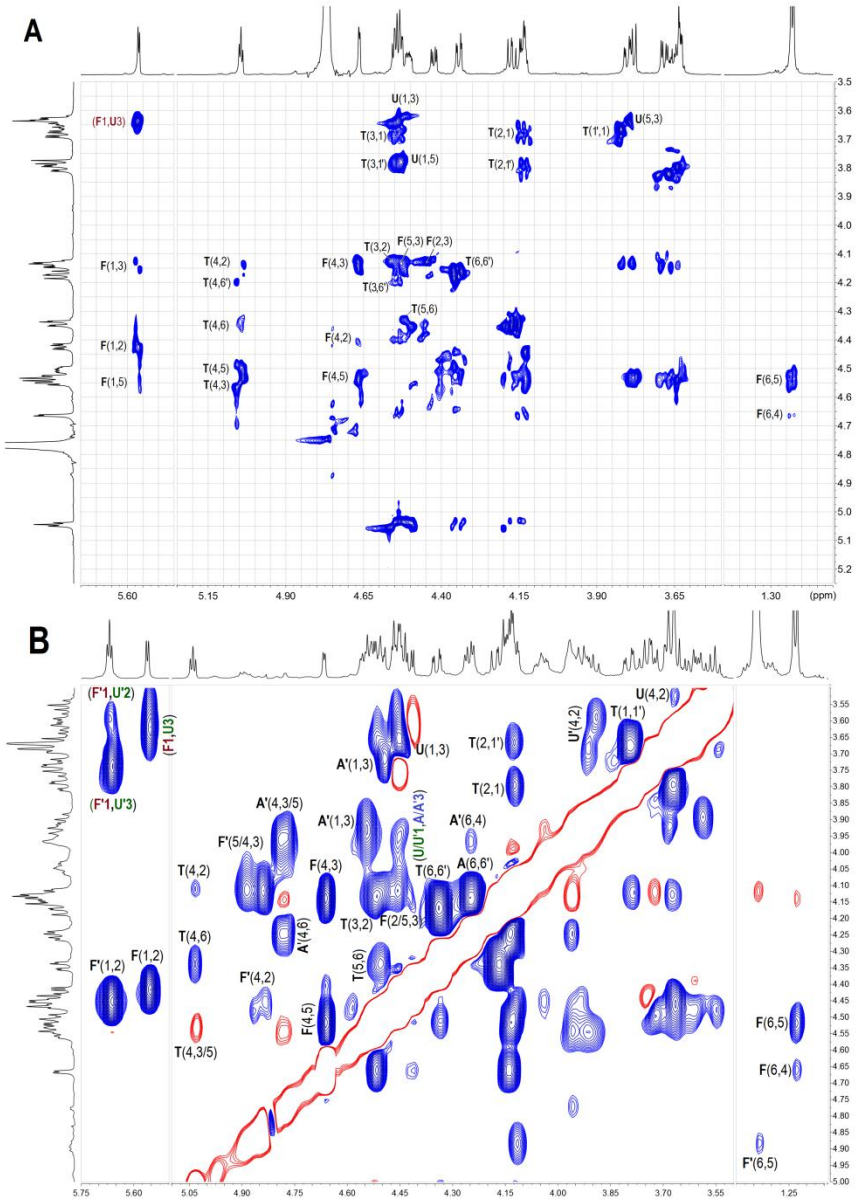


Fig. S6. ^{1}H -^{1}H ROESY spectra of **3** (*A*) and **5** (*B*). Labels are the same as those described in Table S1 and Table S2.

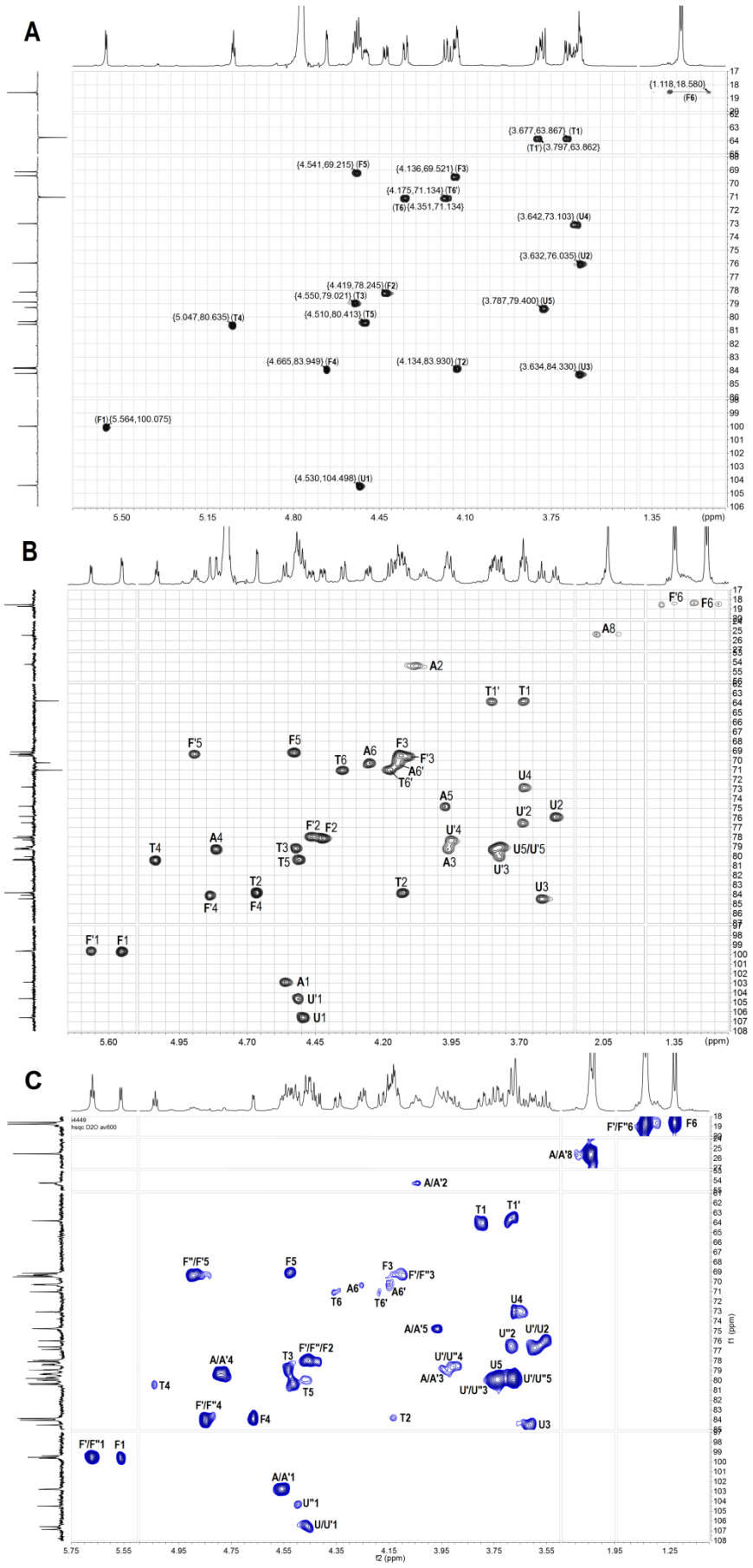


Fig. S7. ^{1}H -^{13}C HSQC spectra of **3** (*A*), **4** (*B*) and **5** (*C*). Labels are the same as those described in Fig. 1, Table S1 and Table S2.

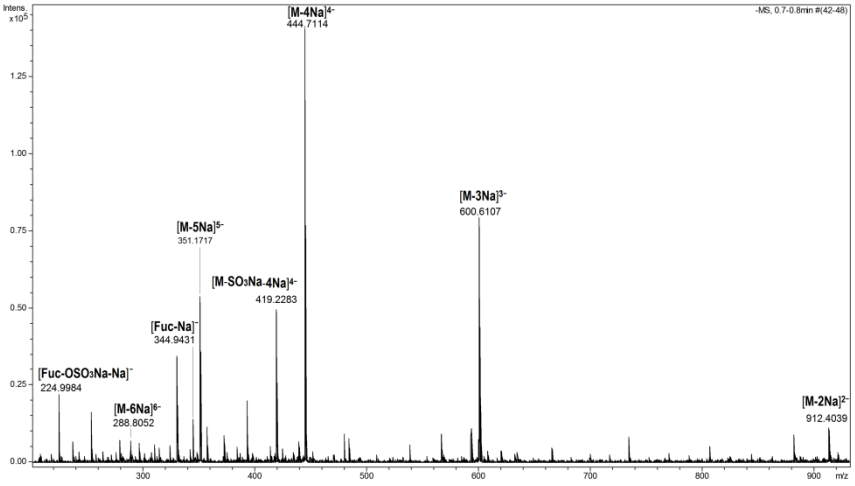


Fig. S8. ESI-Q-TOF-MS spectrum of **4.**

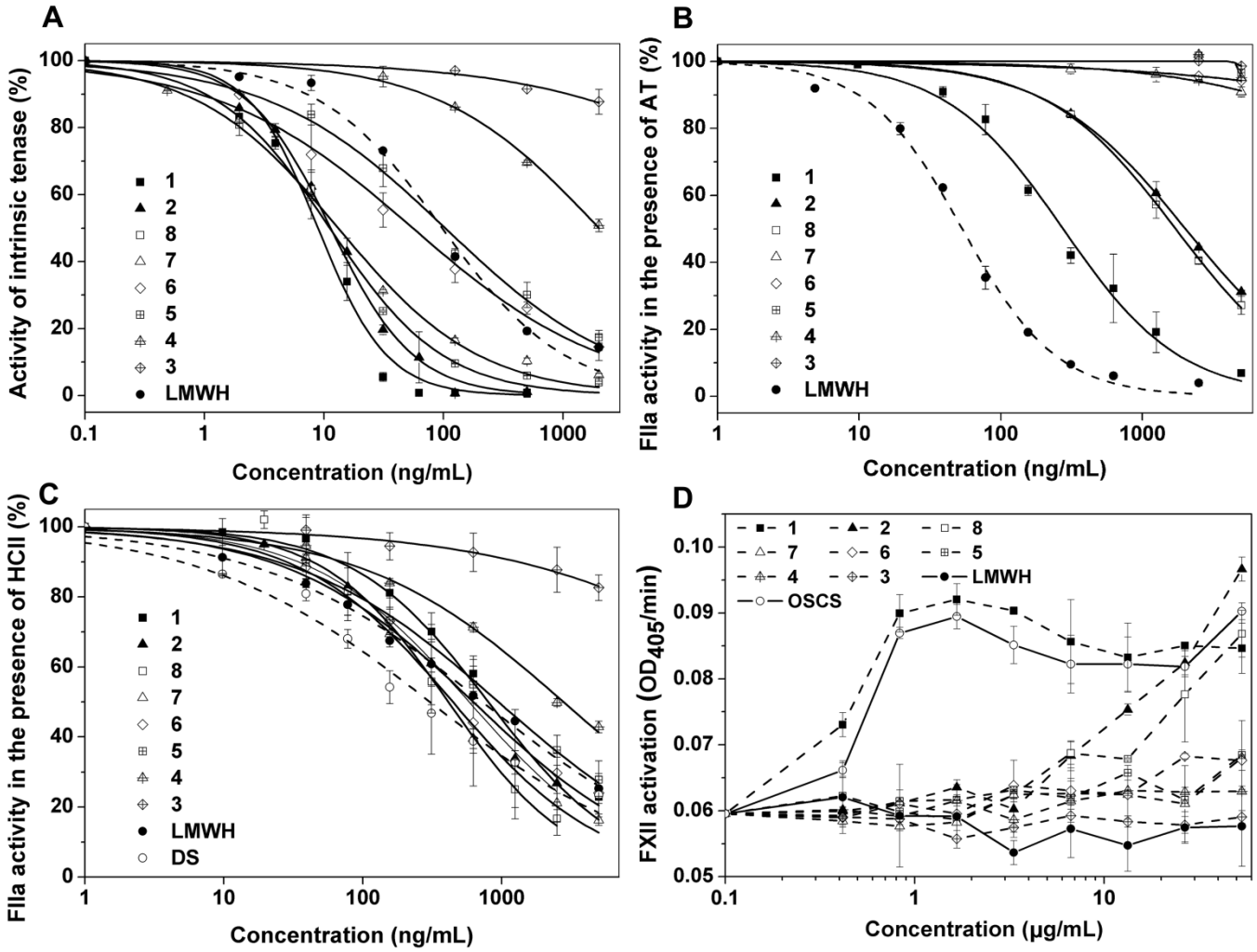


Fig. S9. Effects of **1**-**8** on human intrinsic tenase activity (*A*), FIIa activity in the presence of AT (*B*) or HCII (*C*), and FXII activation (*D*). DS represents dermatan sulfate. The results were expressed as mean ± SD (n = 3).

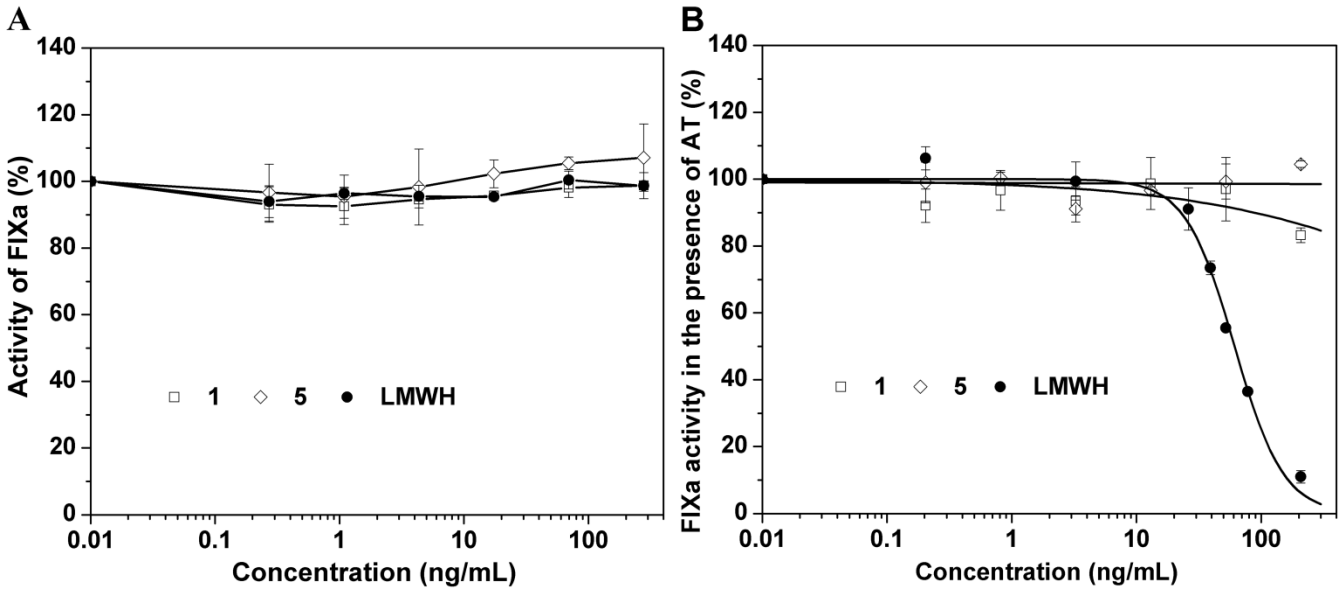
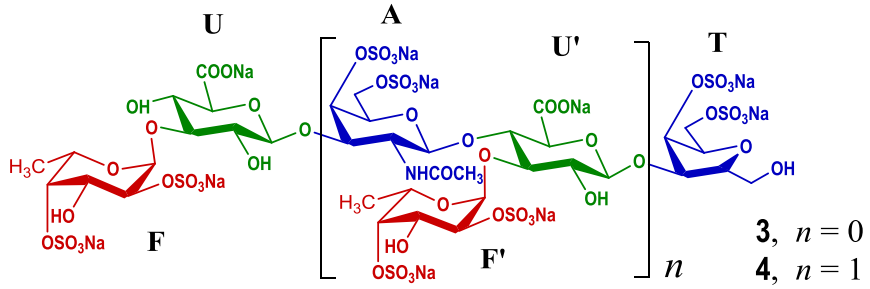


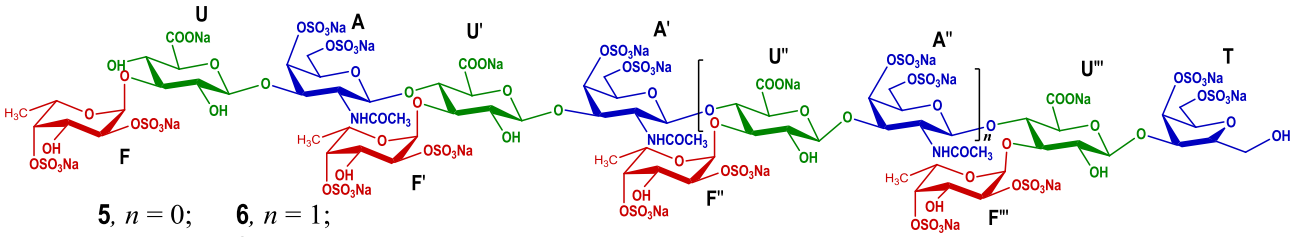
Fig. S10. Effects of **1**, **5** and LMWH on human FIXa activity in the absence of AT (*A*) and in the presence of AT (*B*). The results were expressed as mean ± SD (n = 3).

Table S1. $^{1}H/^{13}C$ NMR chemical shift assignments of **3** and **4**. (δ, ppm; J, Hz)



Comp.	3	4			3	4	
	F	**F**	**F'**		**F**	**F**	**F'**
H1	5.563 ($J_{1,2}$ 3.84)	5.551 ($J_{1,2}$ 3.68)	5.665 ($J_{1,2}$ 3.92)	C1	99.93 ($J_{H,C}$180.0)	99.65 ($J_{H,C}$180.8)	99.62 ($J_{H,C}$181.9)
H2	4.424 ($J_{2,3}$ 10.24)	4.422 ($J_{2,3}$ 10.5)	4.464 ($J_{2,3}$ 10.4)	C2	78.13 ($J_{H,C}$148.8)	77.96 ($J_{H,C}$152.1)	78.11 ($J_{H,C}$152.9)
H3	4.144 ($J_{3,4}$ 3.08)	4.139 ($J_{3,4}$ 2.96)	4.112 ($J_{3,4}$ 2.64)	C3	69.43 ($J_{H,C}$146.4)	69.52 ($J_{H,C}$145.6)	69.39 ($J_{H,C}$150.5)
H4	4.664 ($J_{4,5}$ --)	4.663 ($J_{4,5}$ --)	4.664 ($J_{4,5}$ --)	C4	83.86 ($J_{H,C}$151.2)	83.82 ($J_{H,C}$153.4)	84.09 ($J_{H,C}$156.1)
H5	4.536 ($J_{5,6}$ 6.48)	4.527 ($J_{5,6}$ 6.48)	4.536 ($J_{5,6}$ 6.48)	C5	69.13 ($J_{H,C}$148.9)	69.11 ($J_{H,C}$148.9)	69.32 ($J_{H,C}$152.6)
H6	1.230	1.230	1.347	C6	18.59 ($J_{H,C}$136.8)	18.56 ($J_{H,C}$141.9)	18.74 ($J_{H,C}$142.1)
	U	**U**	**U'**		**U**	**U**	**U'**
H1	4.525 ($J_{1,2}$ 8.40)	4.686 ($J_{1,2}$ 7.84)	4.513 ($J_{1,2}$ 7.92)	C1	104.40 ($J_{H,C}$164.4)	106.61 ($J_{H,C}$166.8)	104.61 ($J_{H,C}$163.6)
H2	3.626 ($J_{2,3}$ 9.76)	3.566 ($J_{2,3}$ 8.00)	3.675 ($J_{2,3}$ 8.16)	C2	75.96 ($J_{H,C}$151.6)	75.85 ($J_{H,C}$147.6)	76.51 ($J_{H,C}$146.8)
H3	3.658 ($J_{3,4}$ 9.23)	3.618 ($J_{3,4}$ 8.80)	3.799 ($J_{3,4}$ 8.08)	C3	84.23 ($J_{H,C}$148.5)	84.46 ($J_{H,C}$141.6)	80.06 ($J_{H,C}$145.2)
H4	3.633 ($J_{4,5}$ 9.44)	3.693 ($J_{4,5}$ 9.04)	3.967 ($J_{4,5}$ 9.04)	C4	73.01 ($J_{H,C}$144.0)	72.77 ($J_{H,C}$149.6)	78.30 ($J_{H,C}$155.2)
H5	3.780	3.774	3.762	C5	79.29 ($J_{H,C}$146.4)	79.28 ($J_{H,C}$145.6)	78.99 ($J_{H,C}$145.3)
				C6	177.72	177.46	176.93
	T	**A**	**T**		**T**	**A**	**T**
H1	3.682, 3.787 ($J_{1,1'}$ = 12.8)	4.561 ($J_{1,2}$ = 8.48)	3.683, 3.801 ($J_{1,1'}$ = 9.52)	C1	63.75 ($J_{H,C}$138.4,152.0)	102.89 ($J_{H,C}$160.4)	63.79 ($J_{H,C}$147.3,147.9)
H2	4.133 ($J_{1/1',2}$ 4.16,3.12)	4.053 ($J_{2,3}$ 10.4)	4.131 ($J_{1/1',2}$ 4.64,3.44)	C2	83.78 ($J_{H,C}$151.2)	54.23 ($J_{H,C}$149.6)	83.80 ($J_{H,C}$151.2)
H3	4.549 ($J_{2,3}$ 6.32)	3.958 ($J_{3,4}$ 2.48)	4.527 ($J_{2,3}$ 6.84)	C3	78.89 ($J_{H,C}$151.2)	79.28 ($J_{H,C}$141.6)	79.16 ($J_{H,C}$152.0)
H4	5.044 ($J_{4,3/5}$ 4.64)	4.814 ($J_{4,5}$ --)	5.031 ($J_{4,3/5}$ 4.64)	C4	80.54 ($J_{H,C}$161.6)	79.16 ($J_{H,C}$156.8)	80.41 ($J_{H,C}$164.8)
H5	4.503 ($J_{5,6/6'}$ 4.16, 8.96)	3.971 ($J_{5,6/6'}$ 4.56, 7.76)	4.501 ($J_{5,6/6'}$ 2.24, 9.04)	C5	80.35 ($J_{H,C}$156.0)	74.79 ($J_{H,C}$145.2)	80.34 ($J_{H,C}$153.6)
H6/6'	4.346,4.182 ($J_{6,6'}$ 10.48)	4.255,4.158 ($J_{6,6'}$ 10.48)	4.347,4.166 ($J_{6,6'}$ 11.30)	C6	70.98 ($J_{H,C}$144.8,155.2)	70.24 ($J_{H,C}$152.4,157.9)	71.01 ($J_{H,C}$142.9,150.8)
				C7		177.98	
H8		2.029		C8		25.48 ($J_{H,C}$139.9)	

Table S2. $^{1}H/^{13}C$ NMR chemical shift assignments of **5**, **6**, **7** and **8**. (δ, ppm)



5, $n = 0$; **6**, $n = 1$;
7, $n = 2$; **8**, $n = 3$;

Comp.	5	6	7	8		5	6	7	8
F									
H1	5.560	5.560	5.563	5.566	C1	99.84	99.61	99.63	99.61
H2	4.423	4.423	4.421	4.426	C2	78.10	77.99	78.10	78.10
H3	4.142	4.139	4.144	4.126	C3	69.38	69.37	69.40	69.39
H4	4.666	4.668	4.665	4.663	C4	83.88	83.83	83.86	83.93
H5	4.533	4.518	4.536	4.511	C5	69.11	69.12	69.10	69.10
H6	1.233	1.233	1.231	1.230	C6	18.59	18.59	18.59	18.59
				F'/F"/F"'					
H1	5.666,5.672	5.672,5.681	5.661,5.669	5.664,5.659	C1	99.55; 99.39	99.61,99.35	99.40,99.42	99.44,99.39
H2	4.454	4.454	4.433	4.454	C2	77.98; 77.94	77.99,77.94	77.98	77.97
H3	4.118	4.119	4.123	4.126	C3	69.49	69.50	69.49	69.47
H4	4.837	4.836-4.855	4.843	4.851	C4	84.04	84.02	84.04	84.01
H5	4.891	4.885	4.875	4.891	C5	69.32; 69.24	69.32,69.26	69.23,69.32	69.22,69.30
H6	1.339,1.348	1.335,1.345	1.336,1.345	1.336,1.342	C6	18.77	18.77	18.79	18.79
U									
H1	4.445	4.484	4.463	4.461	C1	106.58	106.58	106.61	106.60
H2	3.556	3.554	3.565	3.565	C2	76.06	75.97	75.96	75.96
H3	3.614	3.620	3.611	3.612	C3	84.52	84.48	84.47	84.45
H4	3.642	3.656	3.659	3.652	C4	73.03	72.94	73.04	73.03
H5	3.735	3.709	3.663	3.708	C5	79.68	79.30	79.77	79.83
					C6	178.60	178.04	178.77	178.78
				U'/U"					
H1	4.445	4.469	4.451	4.443	C1	106.86	106.82	106.96	106.97,106.93
H2	3.605	3.584	3.624	3.623	C2	76.90	76.84	76.81	76.83,76.80
H3	3.750	3.750	3.720	3.714	C3	80.01	79.45	80.07, 79.98	79.95
H4	3.902	3.923	3.911	3.914	C4	78.45	78.29	78.36, 78.31	78.36, 78.30
H5	3.705	3.709	3.653	3.659	C5	79.80	79.38	79.88	79.88
					C6	176.93	177.6,177.5	177.96	177.95
				U"'					
H1	4.502	4.504	4.495	4.495	C1	104.50	104.53	104.53	104.54
H2	3.690	3.691	3.693	3.702	C2	76.60	76.61	76.54	76.55
H3	3.757	3.757	3.759	3.738	C3	79.96	79.89	79.89	80.04
H4	3.923	3.898	3.908	3.914	C4	78.33	78.29	78.43	78.40
H5	3.696	3.738	3.693	3.659	C5	79.80	79.50	79.77	79.83
					C6	177.68	177.35	177.74	177.74
				A/A'/A"					
H1	4.563	4.545,4.550	4.550	4.543	C1	102.80,102.77	102.82	102.76	102.74
H2	4.048	4.032,4.046;	4.037	4.026,4.040	C2	54.25,54.20	54.21	54.21	54.20
H3	3.944	3.934,3.949	3.950	3.931	C3	79.31,78.95	78.11	78.99, 79.63	78.99, 79.62
H4	4.778	4.774,4.805	4.792	4.806,4.788	C4	79.41,79.38	79.11	79.21,79.37	79.20,79.37
H5	3.966	3.971	3.933	3.954	C5	74.74	74.73	74.76, 74.69	74.75, 74.68
H6/6'	4.251/4.151	4.242/4.145	4.248/4.151	4.252/4.144	C6	70.25,70.30	70.24	70.20, 70.30	70.20, 70.30
					C7	177.98	177.99	177.96	177.95
H8	2.033	2.029, 2.041	2.029, 2.043	2.027, 2.041	C8	25.53	25.52	25.59	25.59
T									
H1/1'	3.684/3.802	3.677/3.794	3.709/3.804	3.680/3.797	C1	63.80	63.82	63.80	63.81
H2	4.126	4.133	4.117	4.129	C2	83.88	83.96	83.78	83.80
H3	4.539	4.528	4.540	4.528	C3	78.91	78.99	78.93	78.99
H4	5.039	5.038	5.044	5.041	C4	80.42	80.29	80.46	80.41
H5	4.508	4.518	4.523	4.505	C5	80.31	79.95	80.33	80.32
H6/6'	4.351/4.181	4.341/4.274	4.353/4.168	4.346/4.169	C6	71.01	70.98	71.02	70.99

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