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Supplementary Information

Preparation of Two Maleic Acid Sulfonamide Salts and Their Copper(II) Complexes and Antiglaucoma Activity Studies

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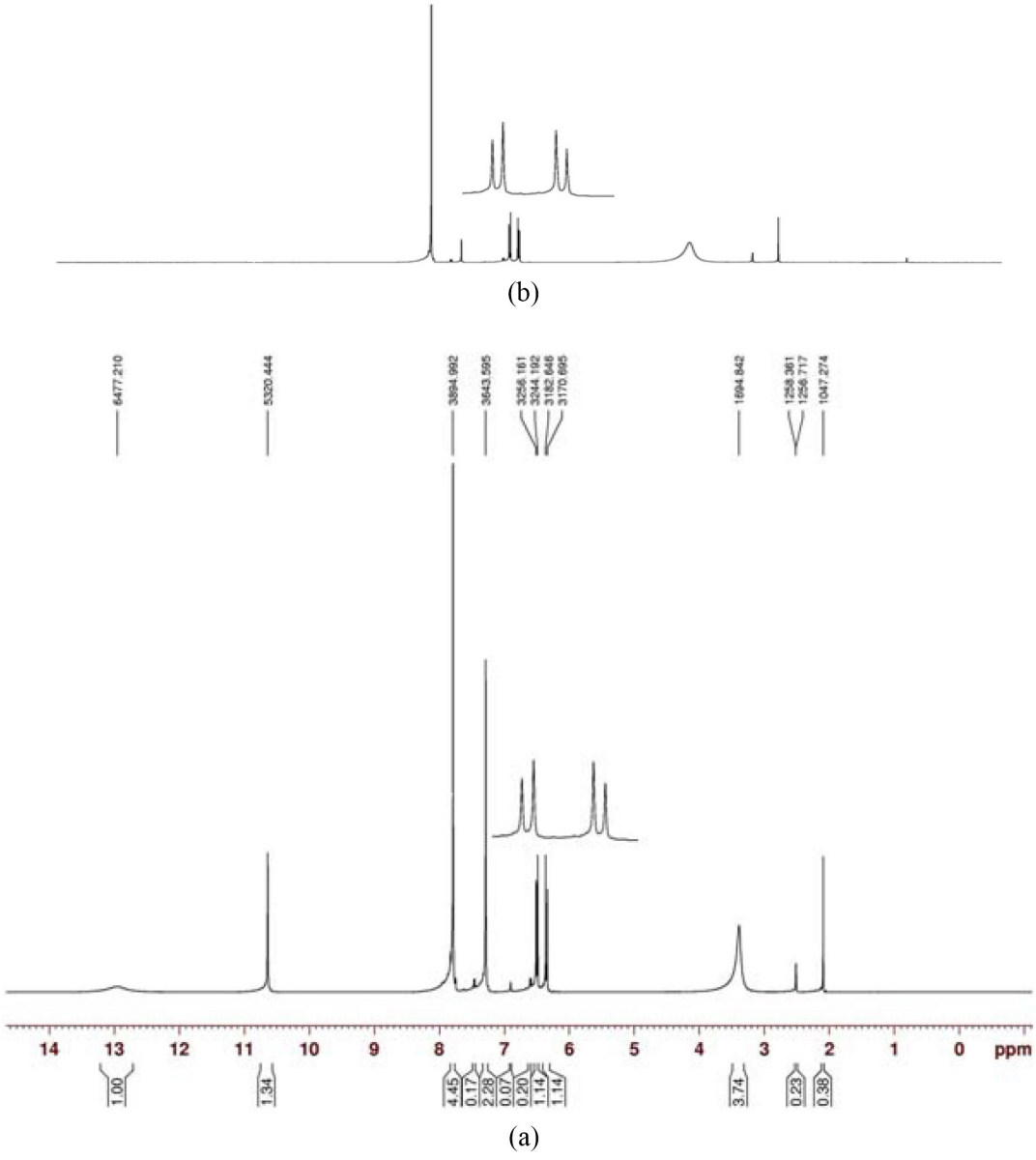

Figure S1. ^{1}H NMR spectra (500 MHz, DMSO-d_6) of compound **4**; (a) in DMSO, (b) in DMSO with D_2O.

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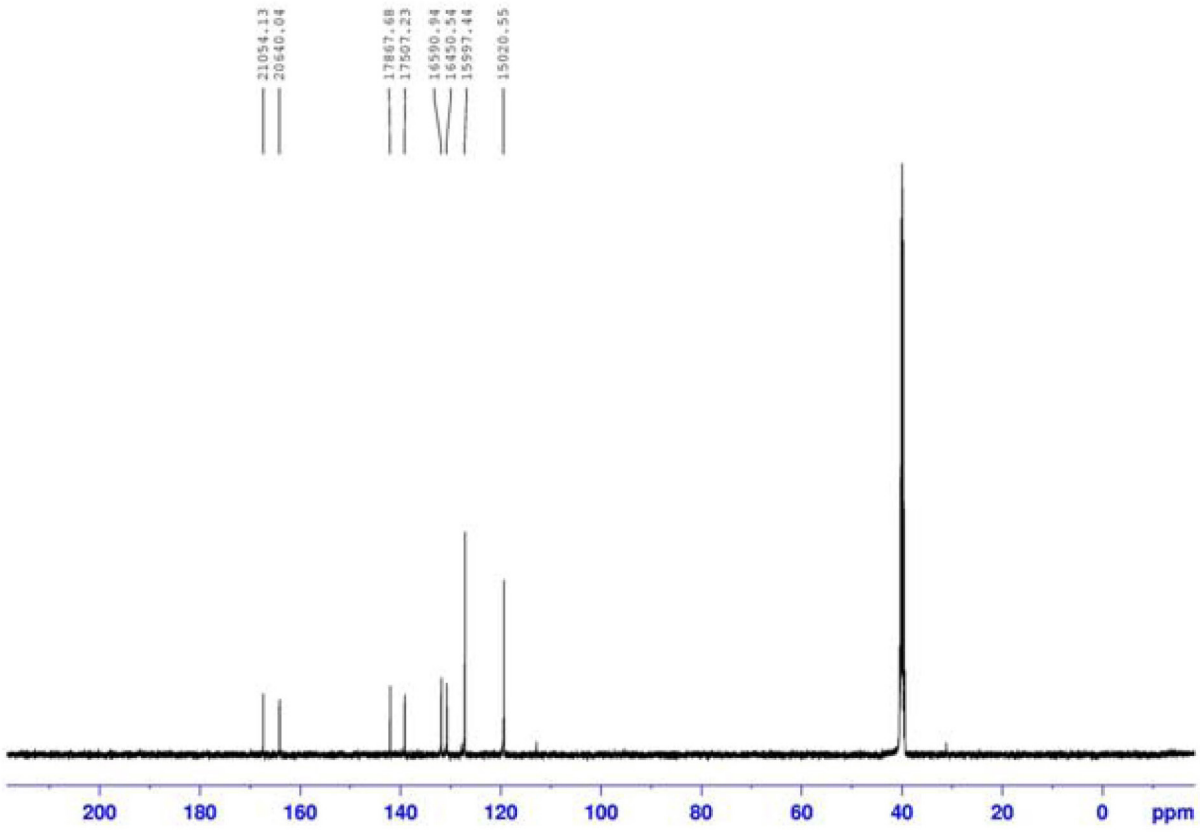

Figure S2. ^{13}C NMR spectrum (125 MHz, DMSO-d_6) of compound **4**.

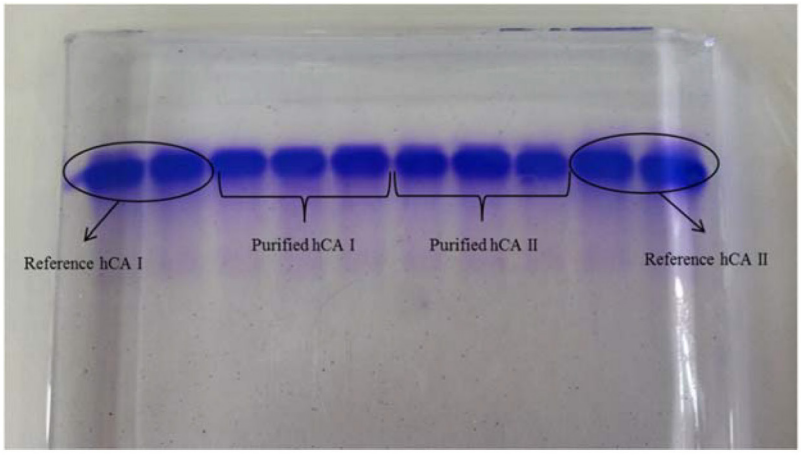

Figure S3. SDS PAGE analysis of purified isozymes.

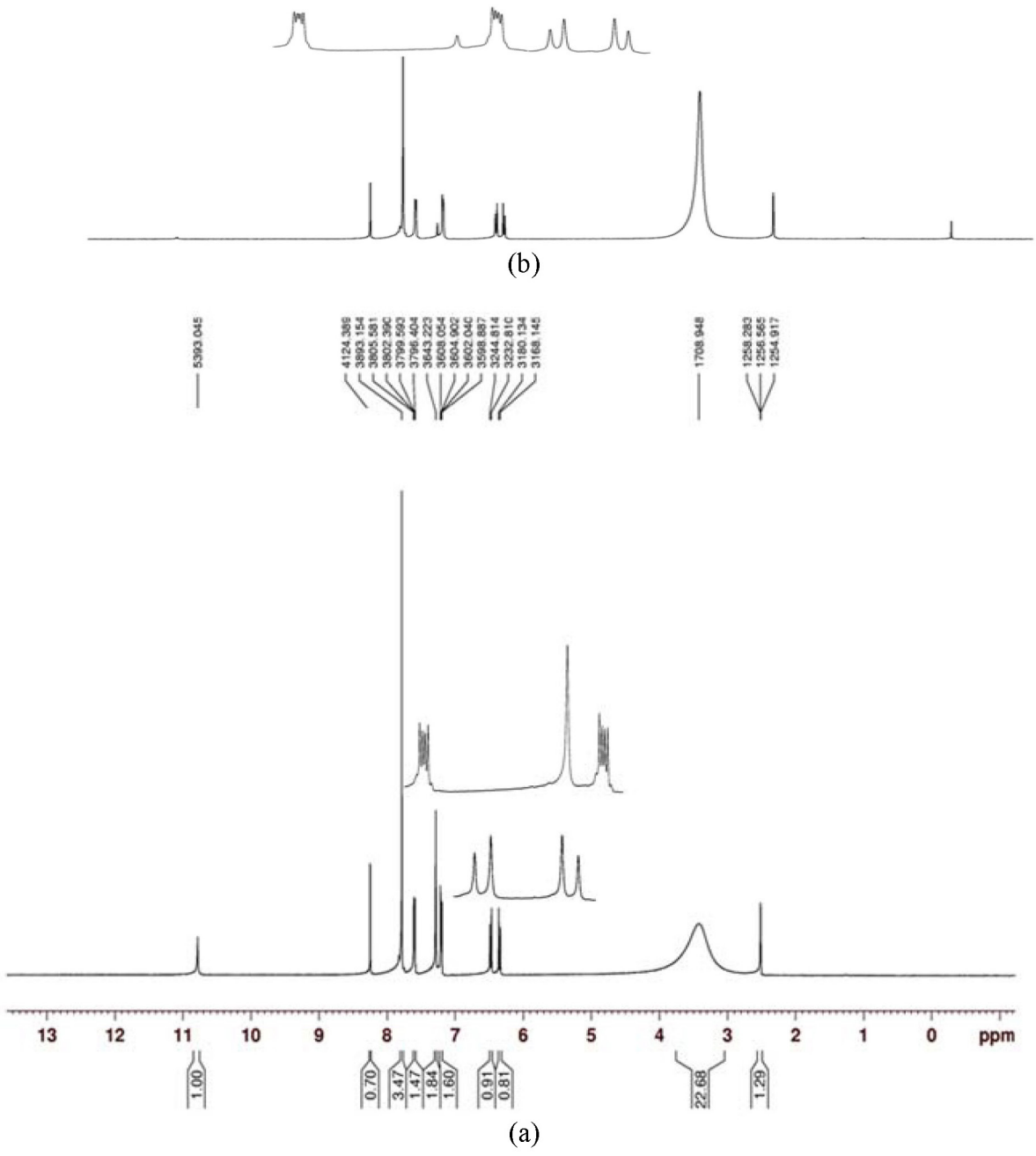

Figure S4. ^{1}H NMR spectra (500 MHz, DMSO-d_6) of compound **6**; (a) in DMSO, (b) in DMSO with D_2O.

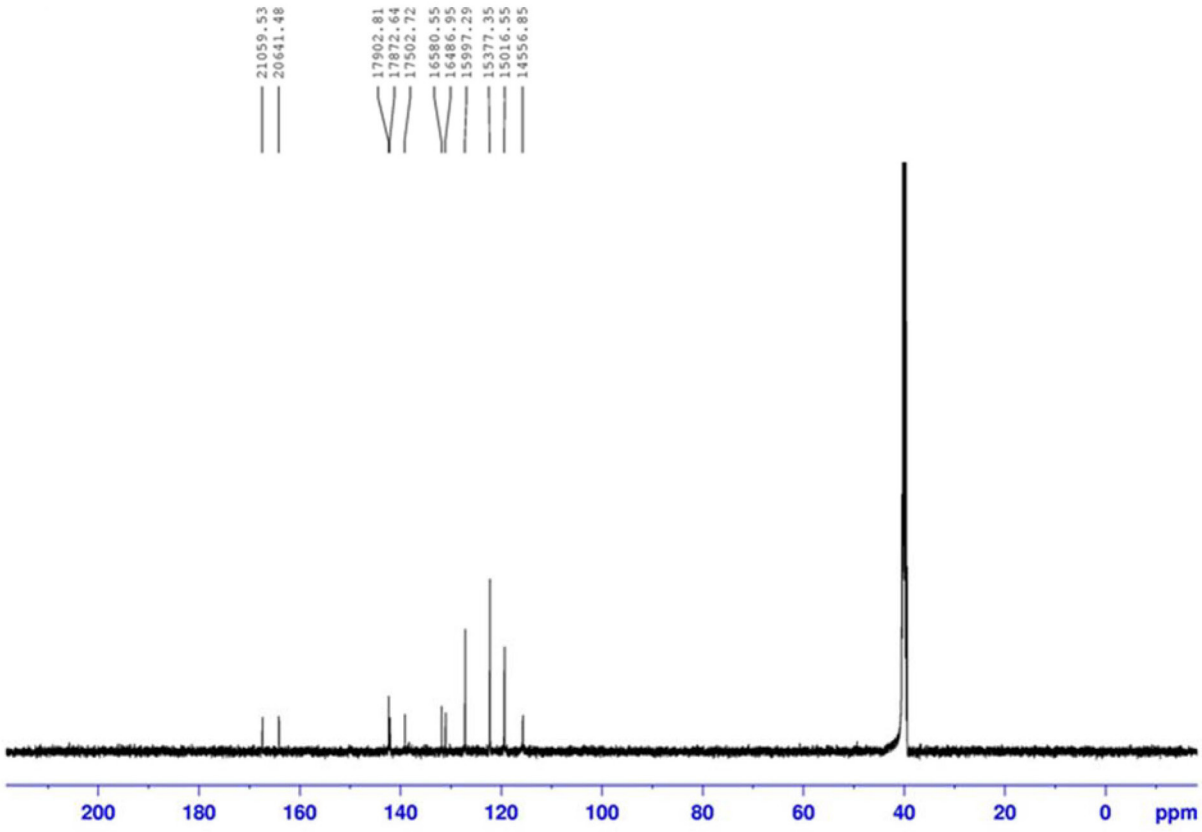

Figure S5. ^{13}C NMR spectrum (125 MHz, DMSO-d_6) of compound **6**.

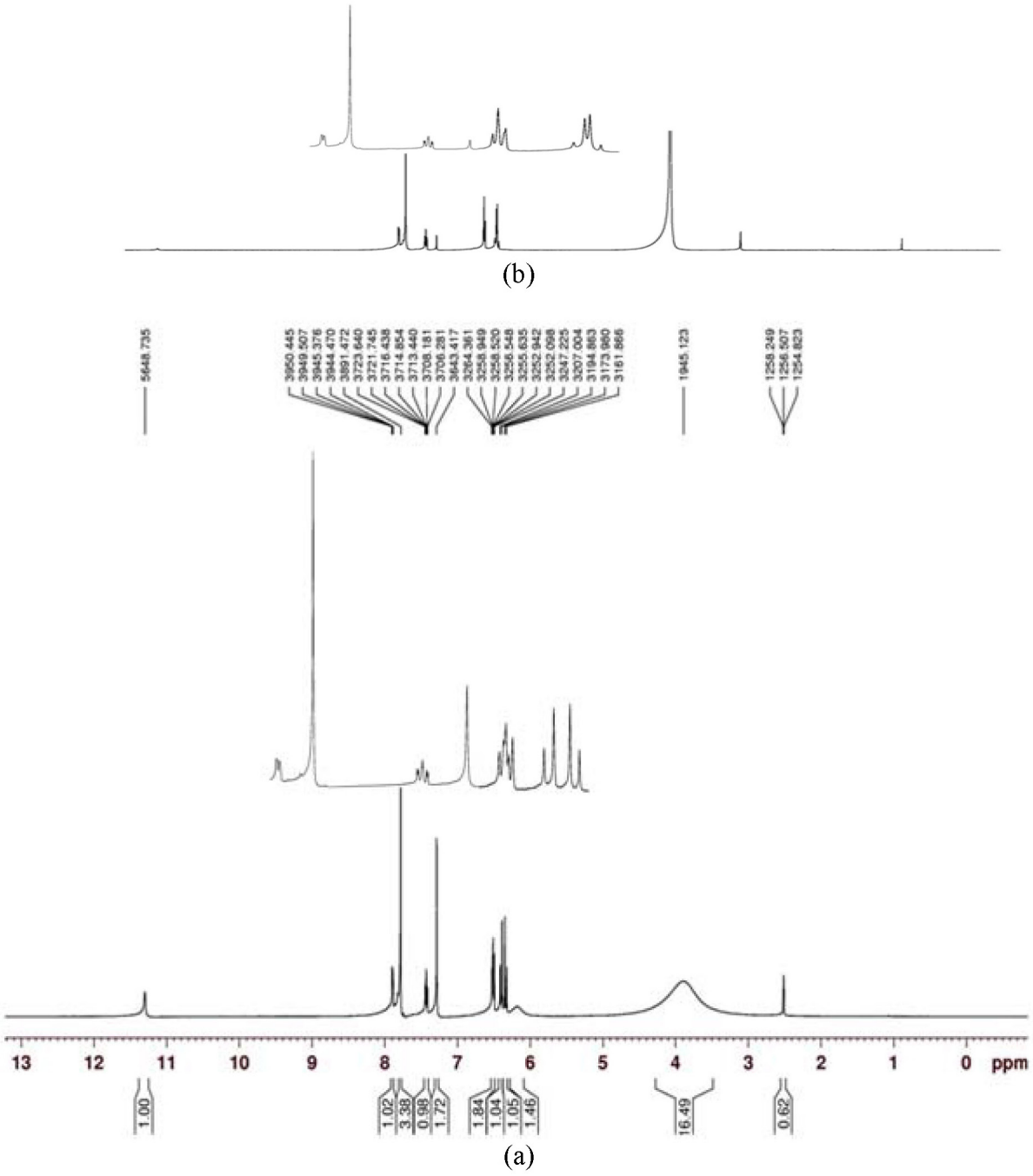

Figure S6. ^{1}H NMR spectra (500 MHz, DMSO-d_6) of compound **9**; (a) in DMSO, (b) in DMSO with D_2O.

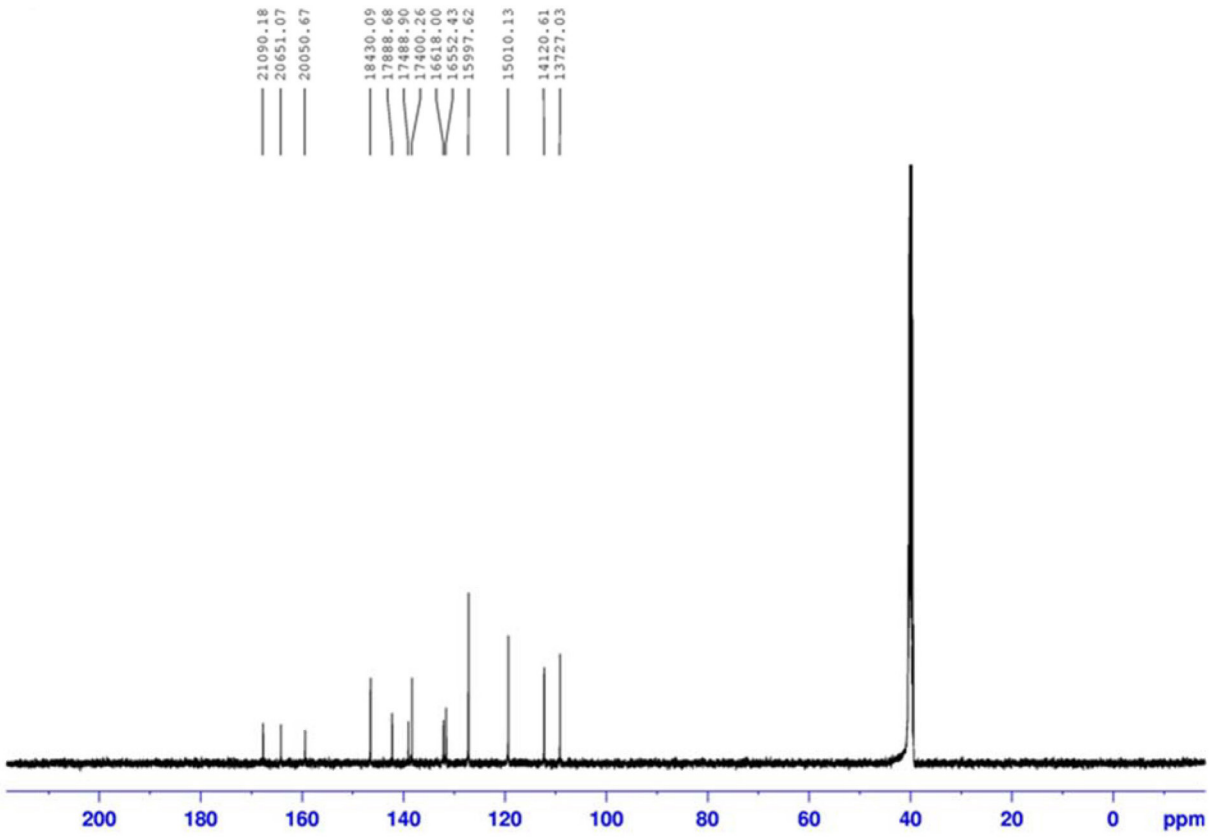

Figure S7. ^{13}C NMR spectrum (125 MHz, DMSO-d_6) of compound **9**.

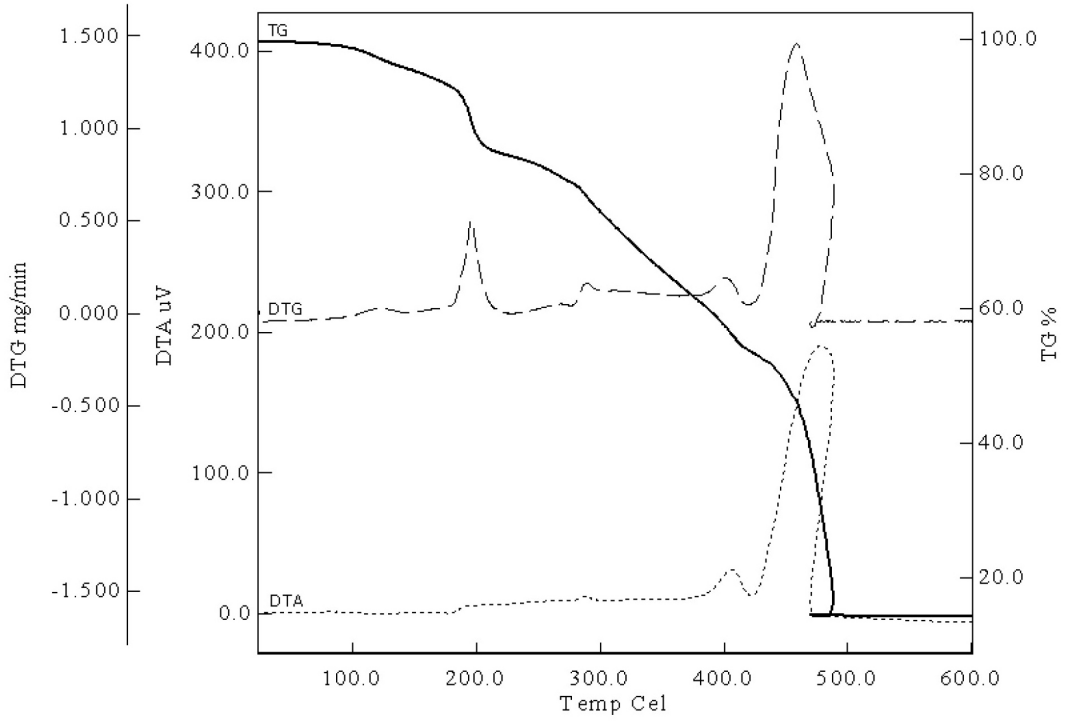

Figure S8. TG-DTG and DTA curves of **4**.

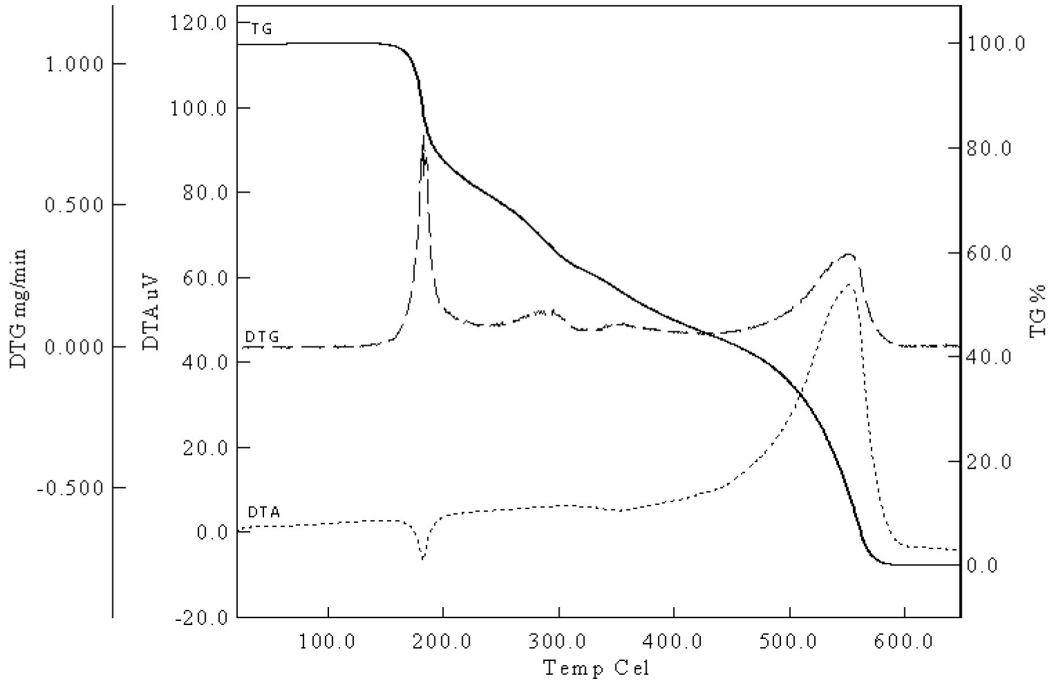

Figure S9. TG-DTG and DTA curves of **6**.

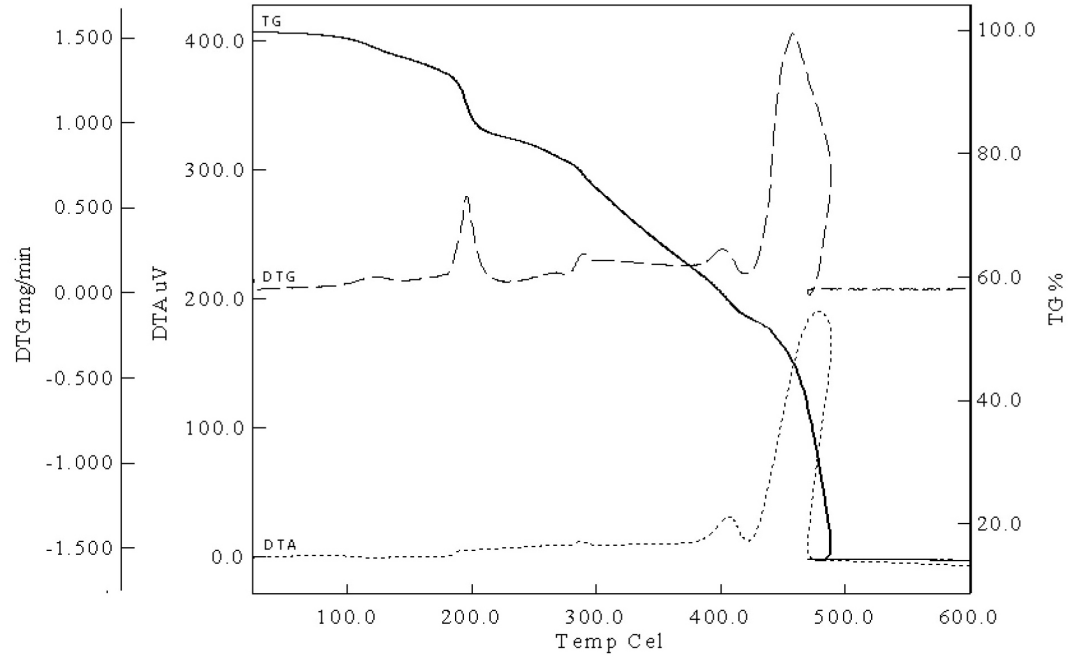

Figure S10. TG-DTG and DTA curves of **7**.

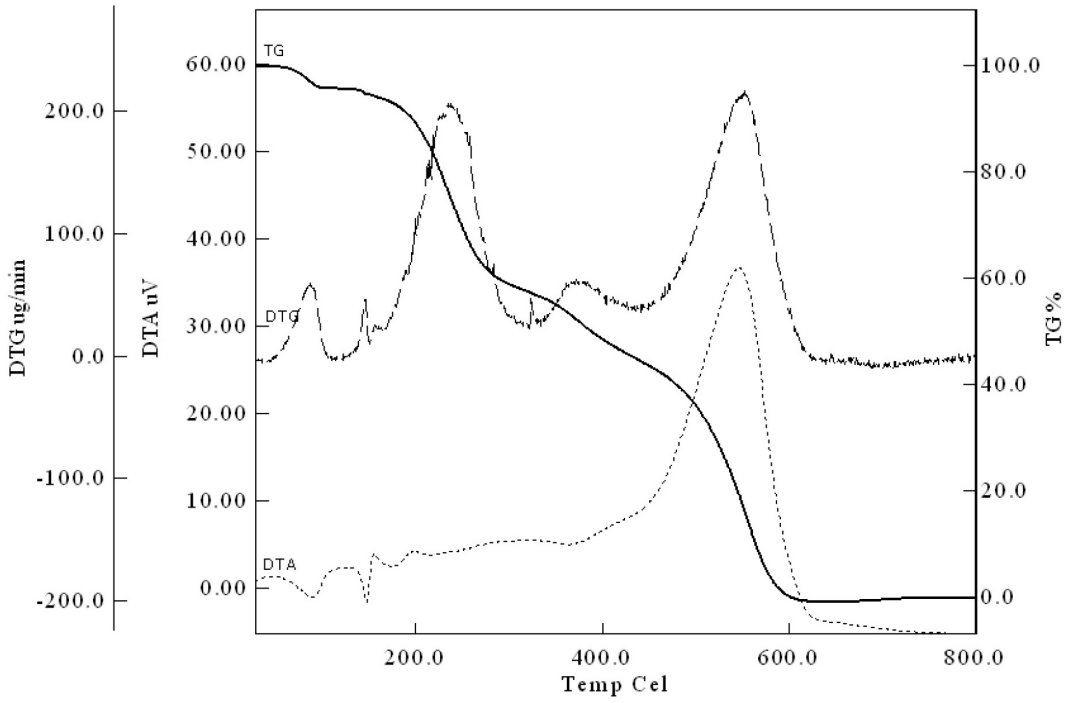

Figure S11. TG-DTG and DTA curves of **9**.

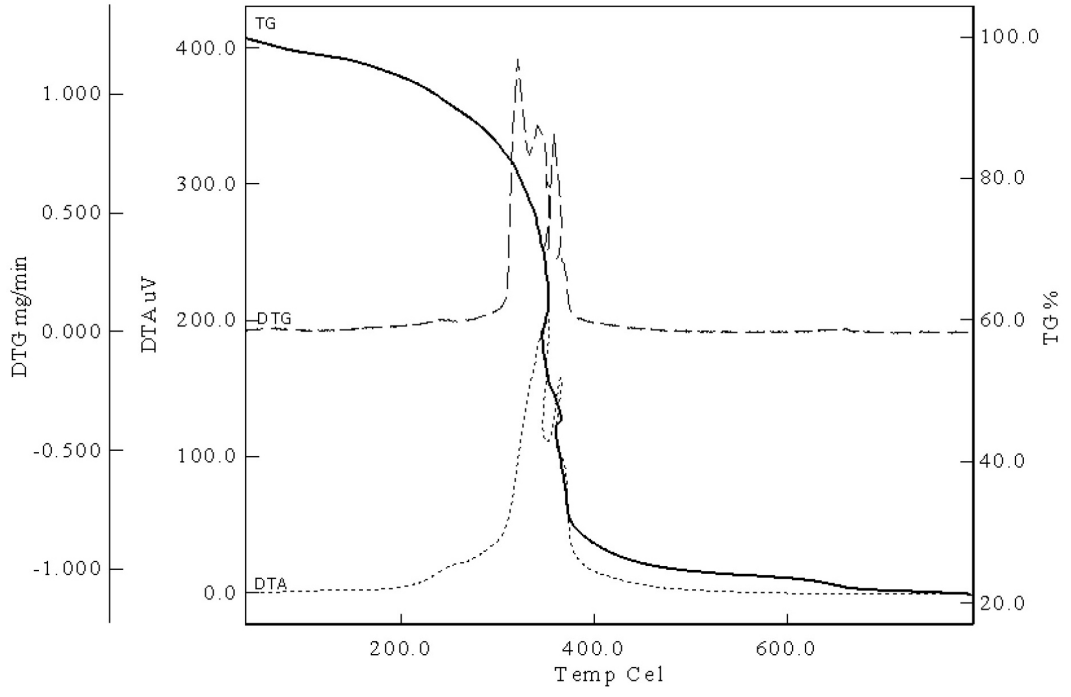

Figure S12. TG-DTG and DTA curves of **10**.

Table S1. IR spectral data of **3-10**

	3 / cm^{-1}	**5** / cm^{-1}	**8** / cm^{-1}	**4** / cm^{-1}	**6** / cm^{-1}	**7** / cm^{-1}	**9** / cm^{-1}	**10** / cm^{-1}
ν(OH)	2900(br)	–	–	3484(br)	–	3428(br)	3435(br)	3447(br)
$\nu(NH_2)$	3352(m) 3263(m) 3212(m)	3447(m) 3307(m)	3349(m)	3355(m) 3306(m) 3240(m)	3432(m) 3303(m)	3351(m) 3232(m)	335(m) 3322(m) 3266(m)	3312(m) 3103(m)
$\nu(NH)^+$	–	–	–	–	2707(w) 2549(w)	–	2757(w) 2586(w)	–
$\nu(CH)_{Ar.}$	3068(w)	3073(w)	3061(w)	3098(w)	3083(w)	3062(w)	3066(w)	3050(w)
$\nu(C=O)_{amit}$	1630(w)	-	-	1654(s)	1633(s)	1659(s)	1626(s)	1602(s)
$\nu(C=O)_{asit}$	1695(s)	-	-	1691(s)	1677(s)	1692(s)	1668(s)	1668(s)
ν(C=N) ν(C=C)	1549(s) 1496(s) 1468(s) 1425(s) 1401(s)	1601(s) 1561(s) 1492(s) 1443(s)	1626(s) 1582(s) 1544(s) 1455(s)	1606(s) 1590(s) 1530(s) 1496(s) 1443(s)	1581(s) 1561(s) 1496(s) 1408(s)	1590(s) 1529(s) 1442(s)	1625(s) 1606(s) 1525(s) 1455(s) 1439(s)	1561(s) 1542(s) 1509(s) 1467(s)
ν(S=O)	1397(s) 1317(s) 1193(s) 1093(s)	–	–	1402(s) 1365(s) 1151(s) 1092(s)	1368(s) 1333(s) 1161(s) 1094(s)	1401(s) 1367(s) 1148(s) 1091(s)	1409(s) 1312(s) 1169(s) 1095(s)	1353(s) 1297(s) 1181(s) 1117(s)
ν(Py)	–	751(s)	–	–	768(s)	732(s)	–	–
ν(M–O)	–	–	–	541(w)	–	537(w)	–	555(w)
ν(M–N)	–	–	–	–	–	438 (w)	–	476(w)

w: weak; m: medium; s: strong; br: broad.

Table S2. Thermal analyses results of compounds **4**, **6**, **7**, **9** and **10**

Compound	Temperature / ºC	DTG_{max} / ºC	Leaving group	Found / %	Calculated / %
4	30-180	124	$2H_2O$	5.60	5.64
	200-324	200, 291	$2SO_2NH_2$	25.00	25.08
	324-720	386, 460	$C_{20}H_{14}N_2O_6$	58.35	59.32
	–	–	Cu	10.05	9.96
6	30-358	184, 295	$C_5H_9N_3O_2S$	48.00	48.08
	358-600	552	$C_{10}H_7NO_3$	52.00	52.02
7	30-128	122	OH	3.20	3.10
	128-377	196, 289	2AP	35.00	34.99
	377-600	401, 458	SAMAL	50.20	50.10
	–	–	Cu	11.60	11.81
9	30-112	84	H_2O	4.40	4.43
	112-375	146, 238, 323, 371	$C_7H_{10}N_3O_2S$	49.20	49.27
	375-900	550	$C_{10}H_7NO_3$	46.40	46.30
10	30-115	62	H_2O	2.60	2.44
	115-355	317, 342	$C_{12}H_{13}O_5$	32.50	32.43
	355-750	359	$C_{12}H_{13}N_6O_5S$	47.70	47.90
	–	–	Cu	17.20	17.23

Table S3. Optical properties for **3-10** DMSO

Compound	DMSO / (nm (mol L^{-1})$^{-1}$ cm^{-1})
3	327(43400) 303(43400)
4	310(42100) 285(25400) 765(89)
5	367(380) 284(13630)
6	315(37760) 309(31090)
7	301(36700) 241(4150) 764(75)
8	301(43400) 290(33540)
9	303(48170) 290(33540)
10	292(2500) 283(3880) 757(80)

Table S4. Purification data of hCA I and hCA II isozymes

Purification step		Activity / (EU mL^{-1})	Total volume / mL	Protein / (mol L^{-1})	Total protein / mg	Total activity / EU	Specific activity / (EU mL^{-1})	Yield / %	Purification factor
Hemolysate		122.3	50	11.24	562.0	6115.0	10.88	100	1
Sepharose 4B-L-tyrosine sulfanylamide affinity chromatography	hCA I	468.4	5	0.51	2.55	2342.0	918.4	38.30	84.40
	hCA II	698.1	5	0.34	1.70	3490.5	2053.2	57.08	188.71