SUPPLEMENTRY FILE

2.1. General methods and materials

All chemicals used were analytical reagents and were commercially purchased from Aldrich. $Cu(CH_3COO)_2.H_2O$, 2,4-dichloro-5-sulfamoylbenzoic acid, 2-aminopyridine, 2-amino-3-methylpyridine, 2-amino-4-methylpyridine, 2-amino-5-methylpyridine and 2-amino-6-methylpyridine were used as received. Elemental analyses for C, H, N and S were performed on Elementar Vario III EL and Cu was detected with Perkin Elmer AAS PinAAcle 900T. FT-IR spectra were recorded in the 4000–400 cm^{-1} region with Bruker Optics, Vertex 70 FT-IR spectrometer using KBr. The UV–Vis spectra were obtained for aqueous solutions of the compounds (10^{-3} M) with a SHIMADZU UV-2550 spectrometer in the range of 200–900 nm. Magnetic susceptibility measurements at room temperature were performed using a Sherwood Scientific Magway MSB MK1 model magnetic balance by the Gouy method using $Hg[Co(SCN)_4]$ as calibrant. The molar conductances of the compounds were determined in water/ethanol (1:1) and in DMSO (10^{-3} M) at room temperature using a WTW Cond 315i/SET Model conductivity meter.

Table S1. IR spectral data of free ligands (cm^{-1}).

	Hsba	**ap**	**2a3mp**	**2a4mp**	**2a5mp**	**2a6mp**
ν(O-H)	2900(br)					
ν(NH_2)	3425(m) 3278(m)	3443(m) 3291(m)	3175(m) 3317(m)	3317(m) 3175(m)	3387(m) 3290(m)	3175(m) 3330(m)
ν$(C\text{-}H)_{Ar}$	3090(w)	3070(w)	3072(w)	3072(w)	3092(w)	3040(m)
ν$(C\text{-}H)_{Alp.}$	-	-	3005(w) 2930(w)	2971(w) 2855(w)	3032(w) 2989(w) 2849(w)	
ν(C=O)	1684(s) 1430(s)	-	-	-	-	-
ν(C=N) ν(C=C)	1430(s) 1401(s)	1622(s) 1593(s) 1555(s) 1483(s) 1435(s)	1580(s) 1460(s) 1445(s)	1580(s) 1460(s) 1445(s)	1585(s) 1475(s) 1447(s) 1417(s)	1571(s) 1465(s) 1443(s)
ν(C-O)	1352(s) 1250(s) 1169(s)					
ν(S=O)	1073(s) 1160(s)					
ν(py)		751(s)	768(s)	768(s)	791(s)	795(s)

[a] abbreviations: w, weak; m, medium; s, strong; br, broad

Table S2. IR spectral data of complexes **1-5** (cm^{-1}).

	1	**2**	**3**	**4**	**5**
ν(NH_2)	3382(m)	3476(m)	3408(m)	3309(m)	3326(m)
	3341(m)	3332(m)	3344(m)	3267(m)	3297(m)
	3235(m)	3165(m)	3262(m)	3197(m)	3252(m)
	3172(m)		3162(m)	3191(m)	3190(m)
ν$(CH)_{Ar}$	3100(w)	3100(w)	3100(w)	3108(w)	3072(s)
ν$(CH)_{Alp.}$	-	2956(w)	2976(w)	2969(w)	2980(w)
		2861(w)	2936(w)	2951(w)	2850(w)
		2809(w)	283(w)1	2847(w)	2725(w)
ν(N^+H)	2792(w)	2699(w)	2764(w)	2765(w)	2724(w)
	2574(w)	2550(w)	2607(w)	2501(w)	2596(w)
ν(C=O)	1686(s)	1679(s)	1629(s)	1691(s)	1676(s)
	1483(s)	1473(s)	1487(s)	1466(s)	1472(s)
ν(C=N)	1635(s)	1631(s)	1590(s)	1642(s)	1632(s)
ν(C=C)	1573(s)	1574(s)	1570(s)	1601(s)	1600(s)
	1546(s)	1473(s)	1547(s)	1578(s)	1561(s)
	1444(s)	1438(s)	1510(s)	1543(s)	1541(s)
	1430(s)		1444(s)	1491(s)	1534(s)
					1435(s)
ν(CO)	1384(s)	1387(s)	1388(s)	1380(s)	1360(s)
	1312(s)	1310(s)	1316(s)	1273(s)	1217(s)
	1079(s)	1077(s)	1081(s)	1085(s)	1095(s)
ν(S=O)	1249(s)	1252(s)	1236(s)	1251(s)	1257(s)
	1173(s)	1169(s)	1175(s)	1171(s)	1160(s)
	1123(s)	1118(s)	1117(s)	1124(s)	1135(s)
ν(py)	763(s)	781(s)	771(s)	794(s)	790(s)

[a] abbreviations: w, weak; m, medium; s, strong; br, broad

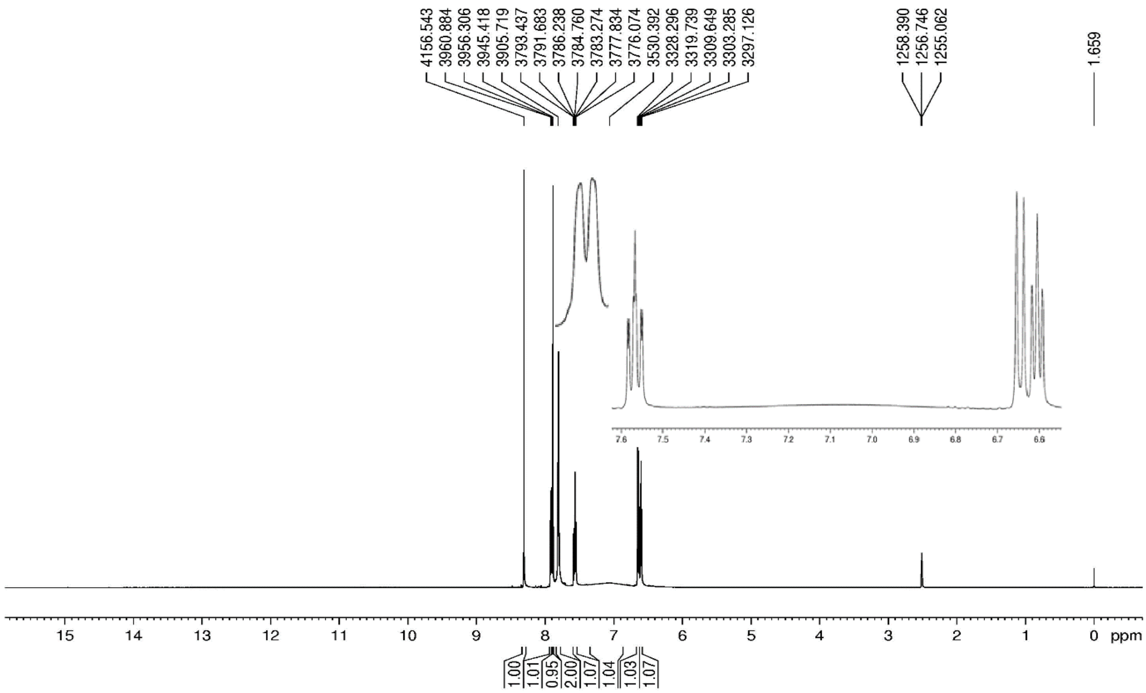
Table S3. IR spectral data of complexes **1-5** (cm^{-1}).

	6	**7**	**8**	**9**	**10**	**11**
$\nu(OH)$	3549(br)	3530(br)	3432(br)	3430(br)	3567(br)	3532(br)
$\nu(NH_2)$	3465(m)	3476(m)		3334(m)	3444(m)	3377(m)
	3358(m)	3361(m)	3432(m)	3294(m)	3392(m)	3291(m)
	3212(m)	3319(m)	3351(m)	3186(m)	3352(m)	
		3278(m)			3290(m)	
$\nu(CH)_{Ar}$	3074(w)	3107(w)	3076(w)	3089(w)	3099(w)	3109(w)
$\nu(CH)_{Alp.}$	-	2968(w)	2956(w)	3012(w)	2971(w)	-
		2920(w)	2804(w)	2931(w)	2938(w)	
		2872(w)	2747(w)	2752(w)	2855(w)	
$\nu(N^+H)$	-	-	-	-	-	-
$\nu(C=O)$	1677(s)	1654(s)	1678(s)	1684(s)	1631(s)	1661(s)
	1489(s)	1462(s)	1489(s)	1484(s)	1421(s)	1461(s)
$\nu(C=N)$	1586(s)	1588(s)	1634(s)	1641(s)	1568(s)	1590(s)
$\nu(C=C)$	1538(s)	1524(s)	1579(s)	1579(s)	1455(s)	1556(s)
	1510(s)	1427(s)	1540(s)	1511(s)	1441(s)	1425(s)
	1453(s)		1439(s)	1454(s)		
	1426(s)					
$\nu(CO)$	1378(s)	1386(s)	1389(s)	1402(s)	1356(s)	1385(s)
	1268(s)	1297(s)	1297(s)	1269(s)	1239(s)	1297(s)
	1090(s)	1070(s)	1080(s)	1081(s)	1080(s)	1043(s)
$\nu(S=O)$	1220(s)	1243(s)	1238(s)	1242(s)	1239(s)	1238(s)
	1164(s)	1201(s)	1175(s)	1176(s)	1171(s)	1151(s)
	1127(s)	1152(s)	1119(s)	1117(s)	1126(s)	1100(s)
$\nu(py)$	802(s)	793(s)	790(s)	792(s)	786(s)	-
$\nu(MN)$	474(w)	473(w)	455(w)	446(w)	462(w)	-
$\nu(MO)$	589(w)	597(w)	567(w)	564(w)	583(w)	569(w)

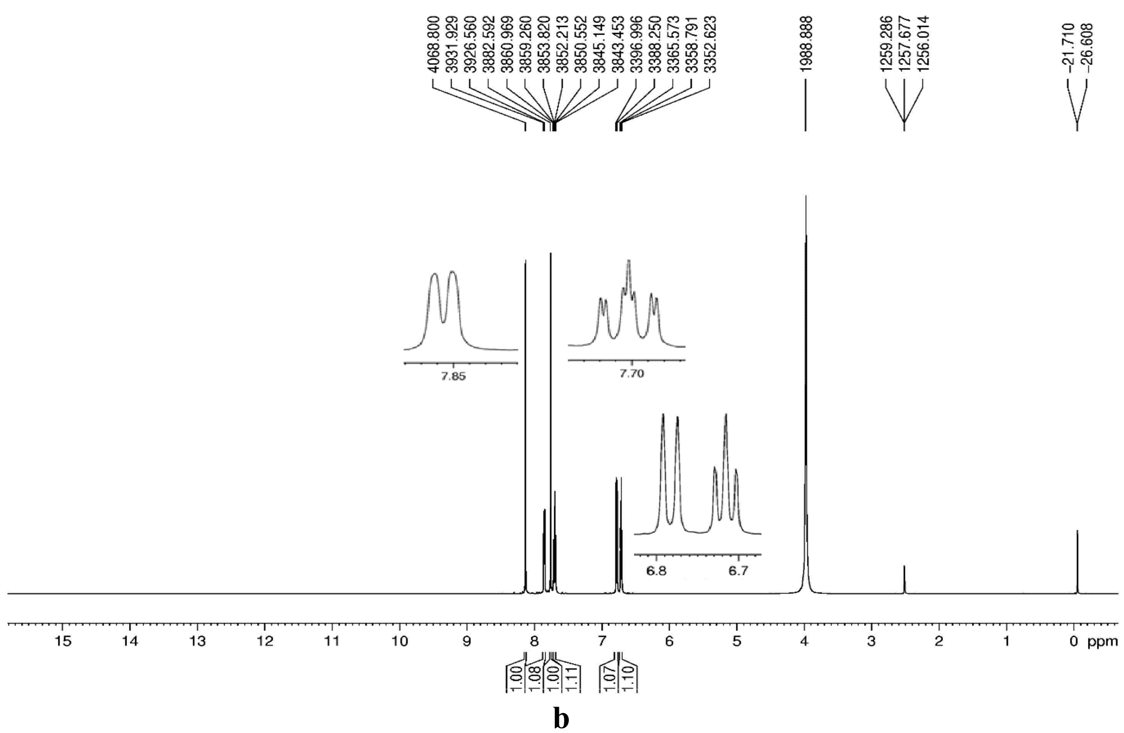
[a] abbreviations: w, weak; m, medium; s, strong; br, broad

Table S4. Optical properties all compounds in DMSO (nm($Lmol^{-1}cm^{-1}$)).

Hsba	**ap**	**2a4mp**	**2a5mp**	**2a6mp**	**2a3mp**
285(11230)	313(32610)	309(33120)	325(28780)	321(32150)	296(34190)
257(35120)		291(26230)	295(29280)	308(31940)	
$Cu(OAc)_2.2H_2O$	**1**	**2**	**3**	**4**	**5**
760(140)	300(34370)	318(41190)	306(38640)	306(37760)	304(29090)
256(36270)		290(29140)	295(26270)	298(21240)	296(29540)
11	**6**	**8**	**9**	**10**	**7**
835(180)	792(270)	790(240)	791(340)	797(100)	791(230)
290(31740)	301(22870)	300(30610)	312(38640)	308(38640)	295(35390)
		290(32060)	309(38640)		291(32490)

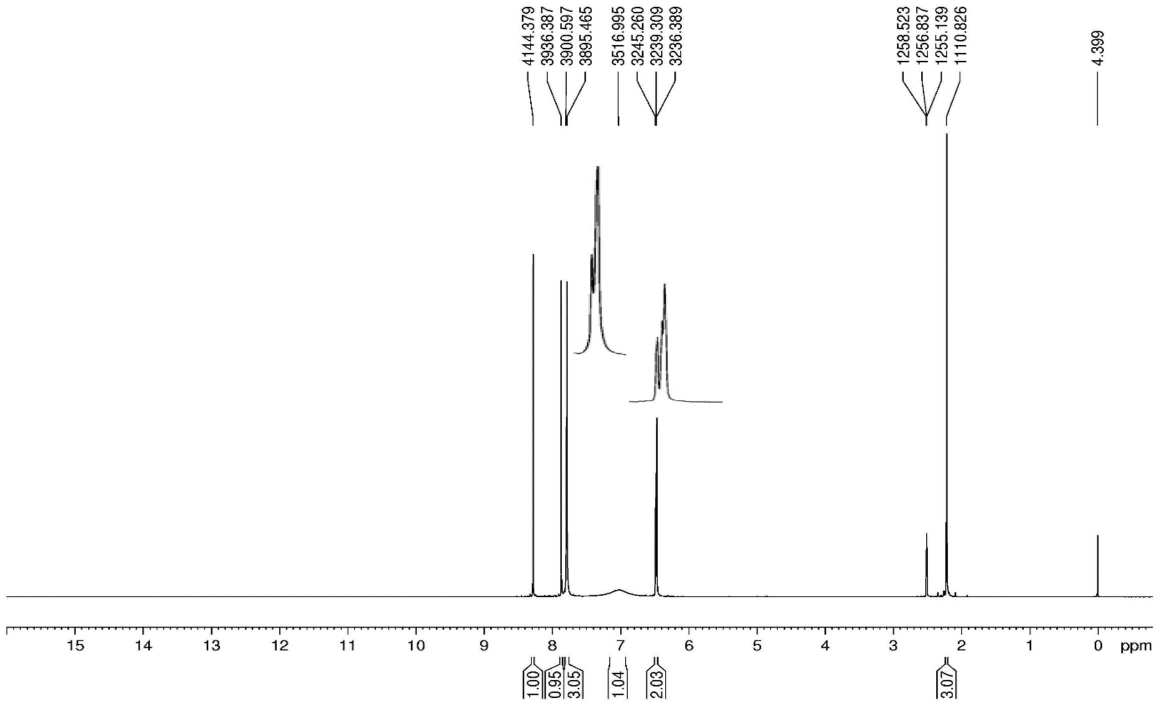


a



b

Fig. S1. ^{1}H NMR spectra of compound **1**; a) in DMSO, b) in DMSO with D_2O.



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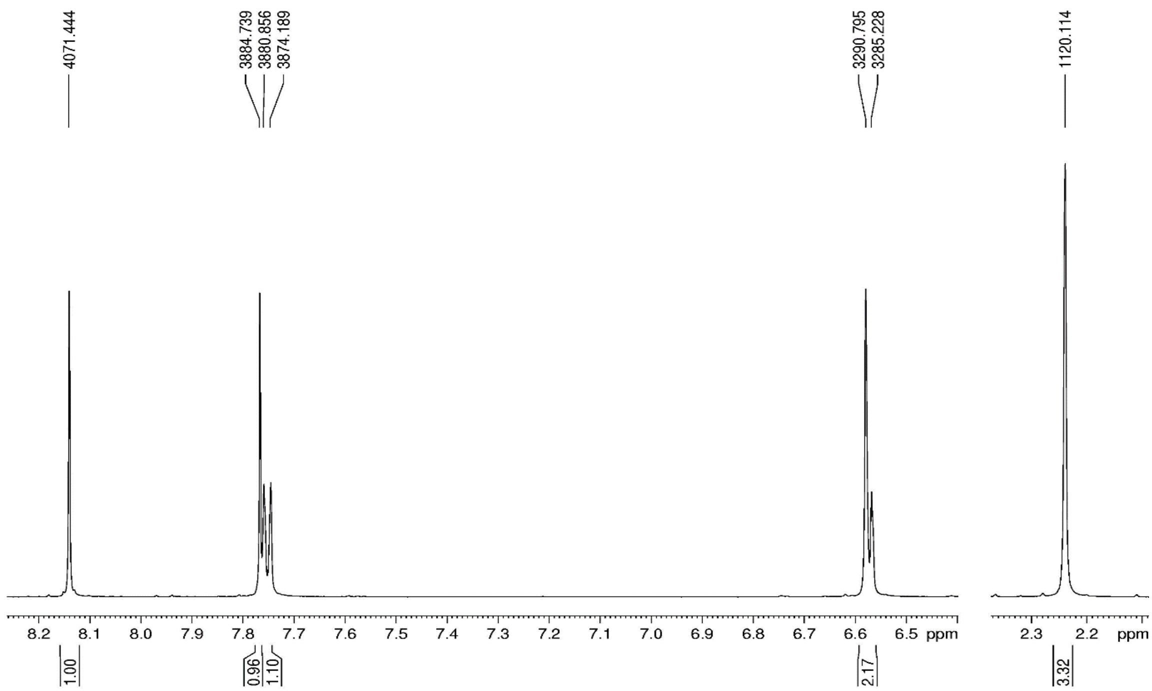

b

Fig. S2. ^{1}H NMR spectra of compound **2**; a) in DMSO, b) in DMSO with D_2O.

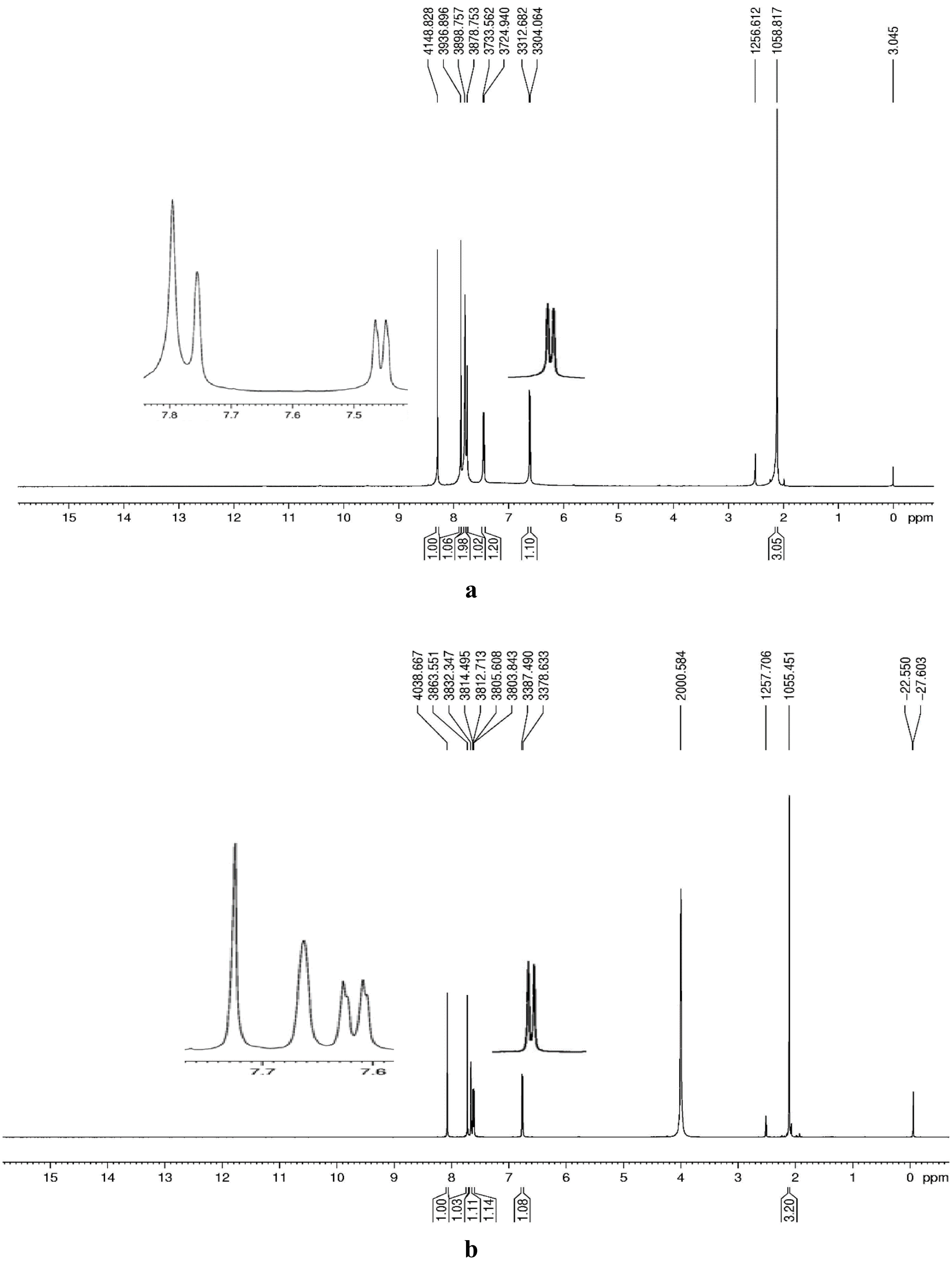

Fig. S3. ^{1}H NMR spectra of compound **3**; a) in DMSO, b) in DMSO with D_2O.

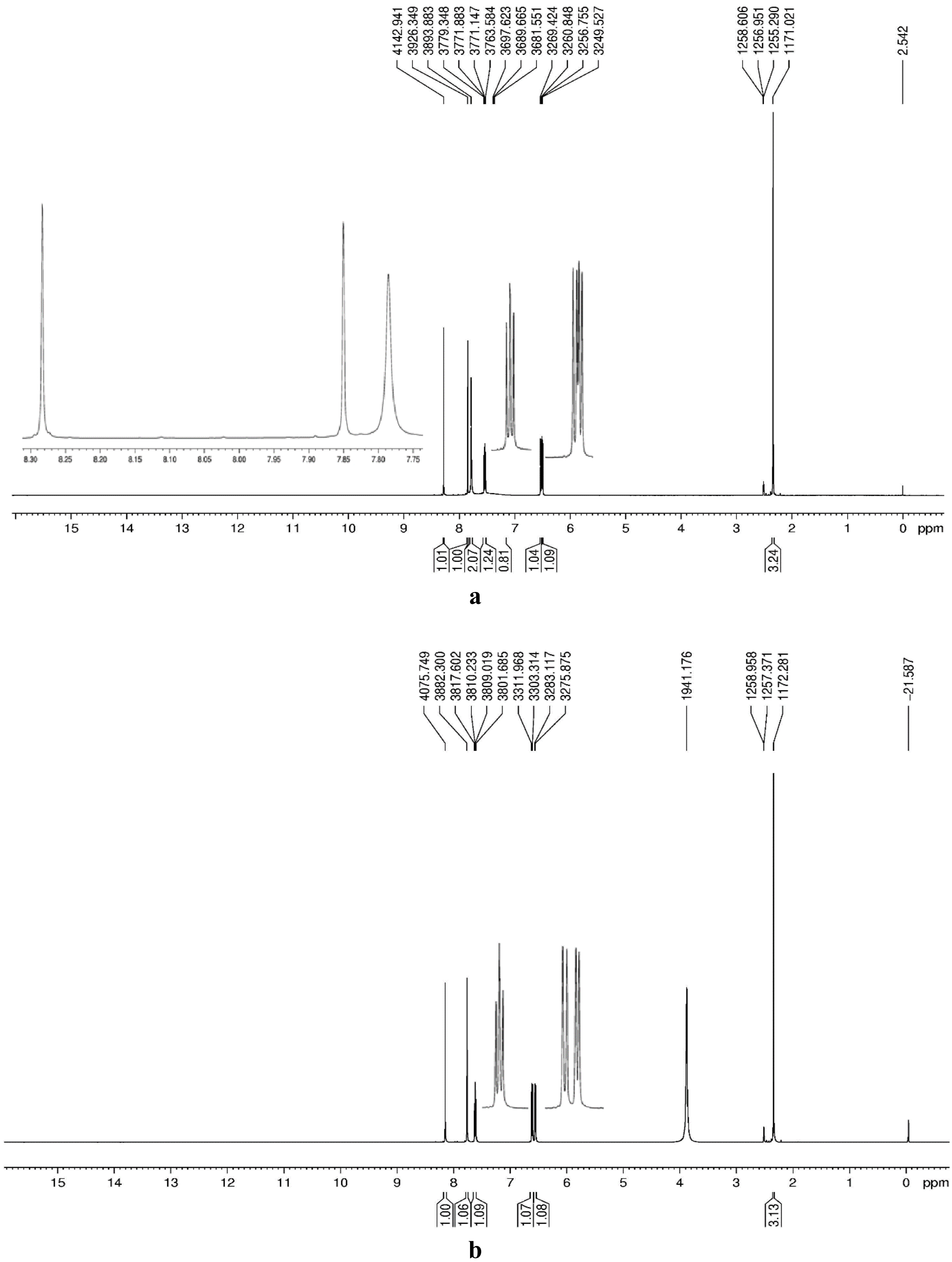

Fig. S4. ^{1}H NMR spectra of compound **4**; a) in DMSO, b) in DMSO with D_2O.

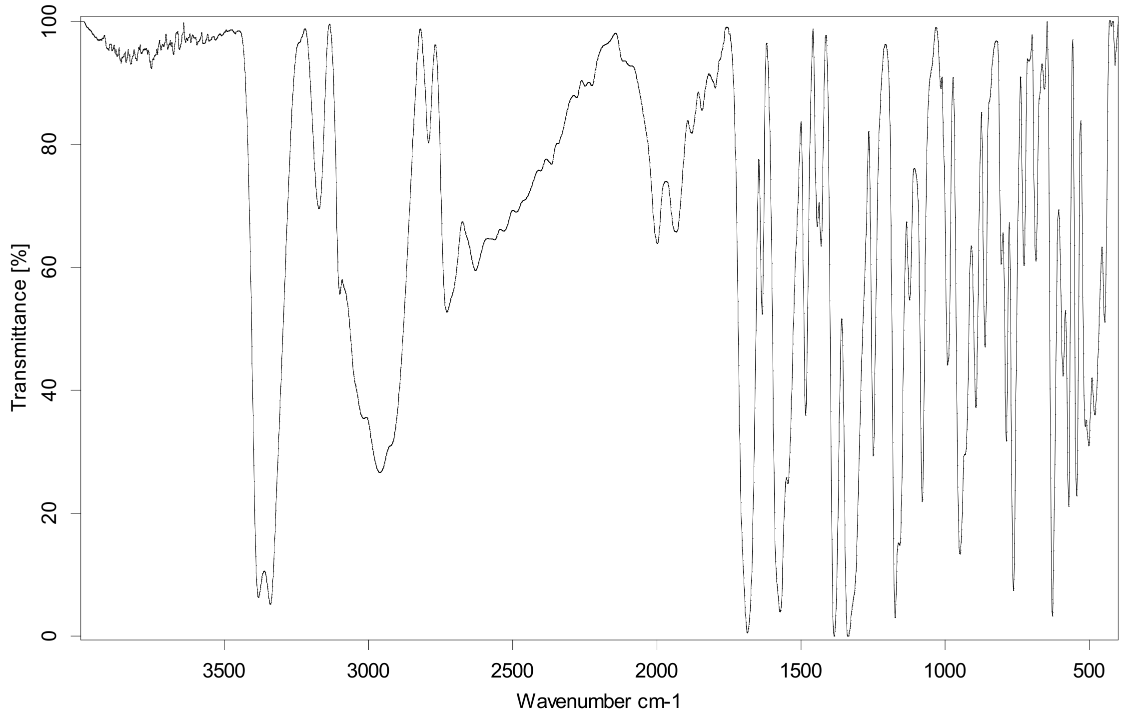

Fig. S5. IR spectrum of **1**.

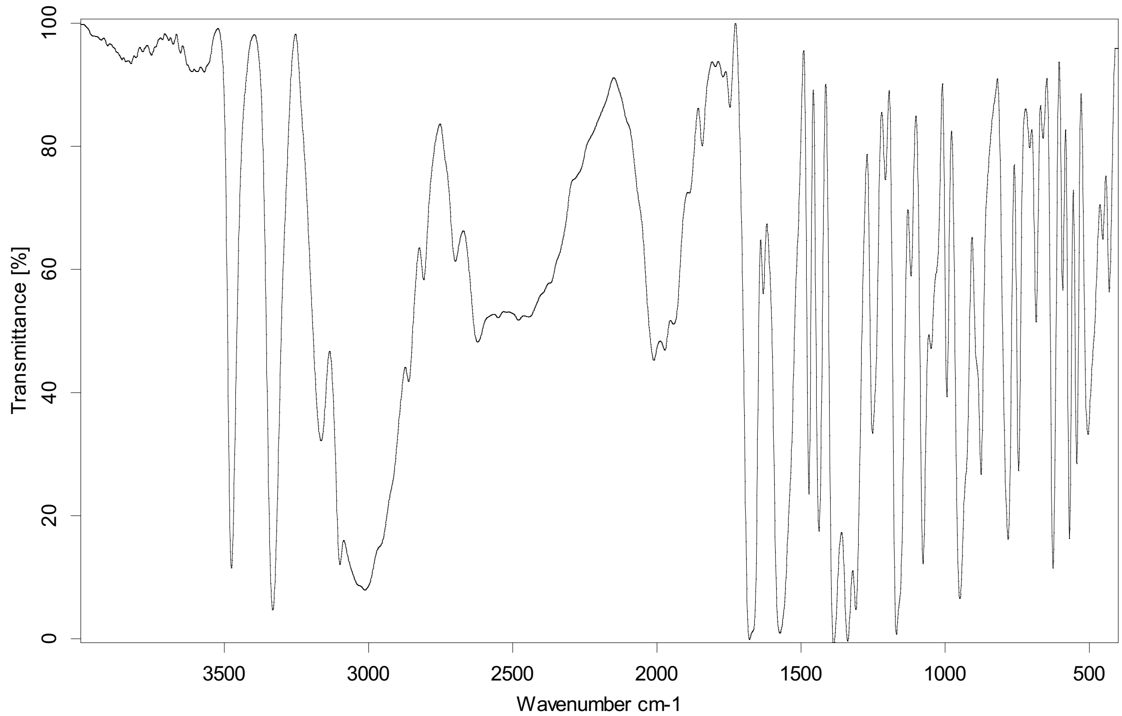

Fig. S6. IR spectrum of **2**.

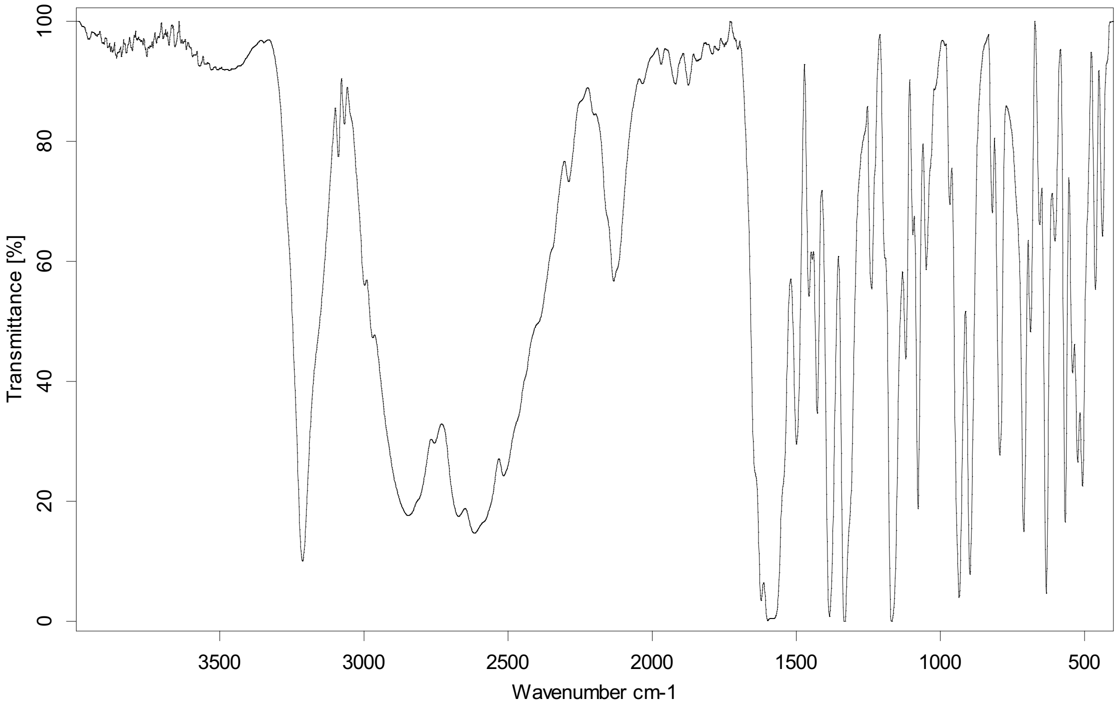

Fig. S7. IR spectrum of **3**.

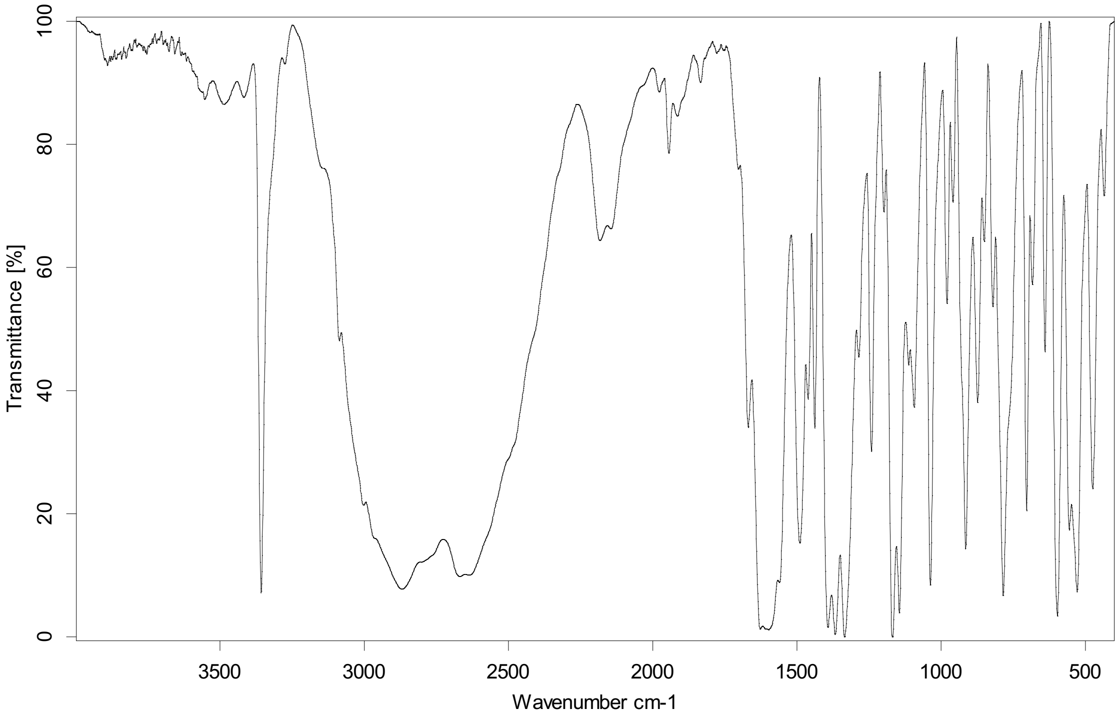

Fig. S8. IR spectrum of **4**.

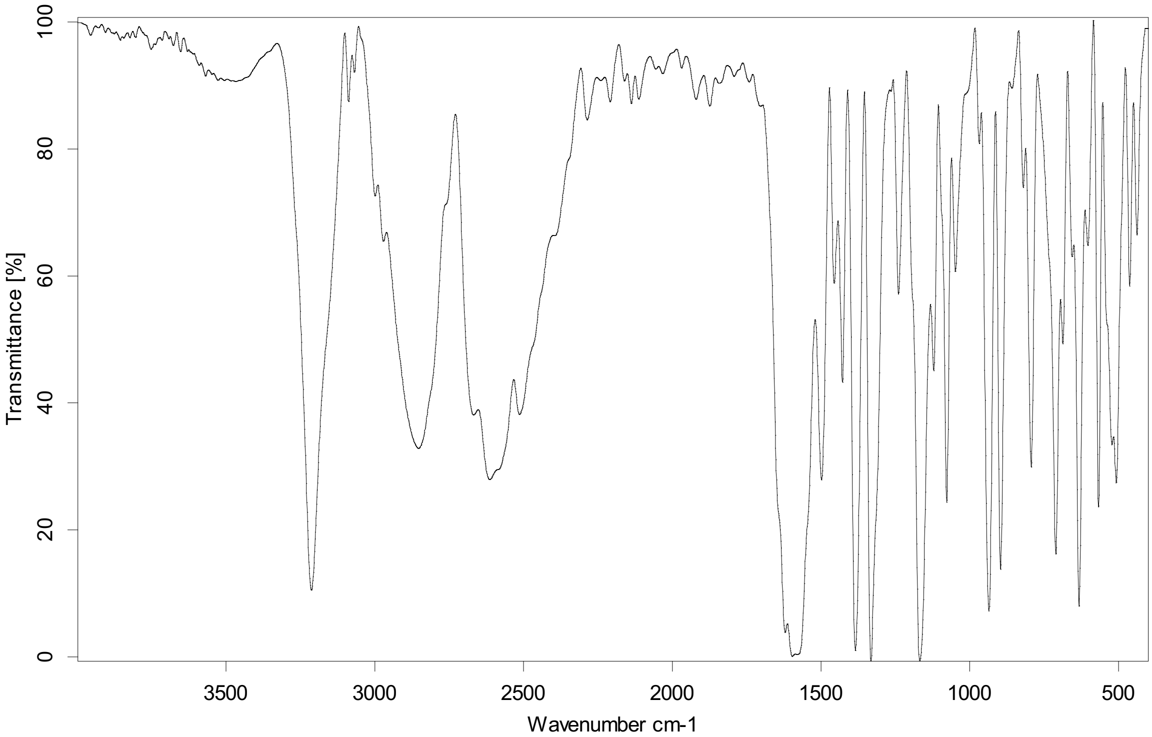

Fig. S9. IR spectrum of **5**.

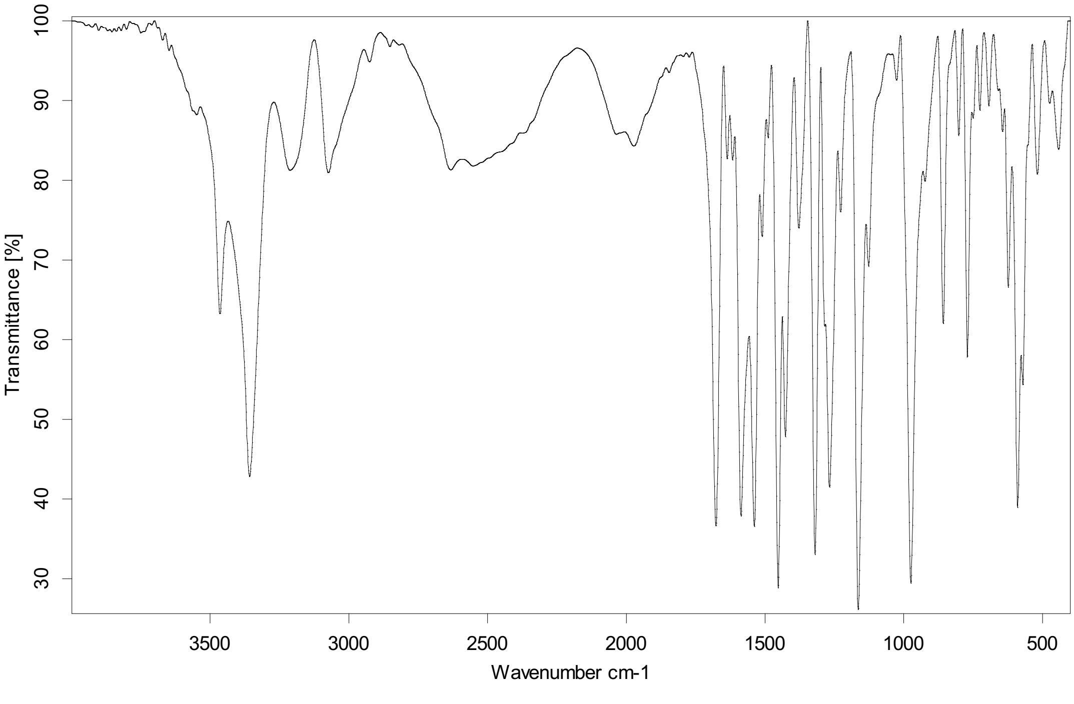

Fig. S10. IR spectrum of **6**.

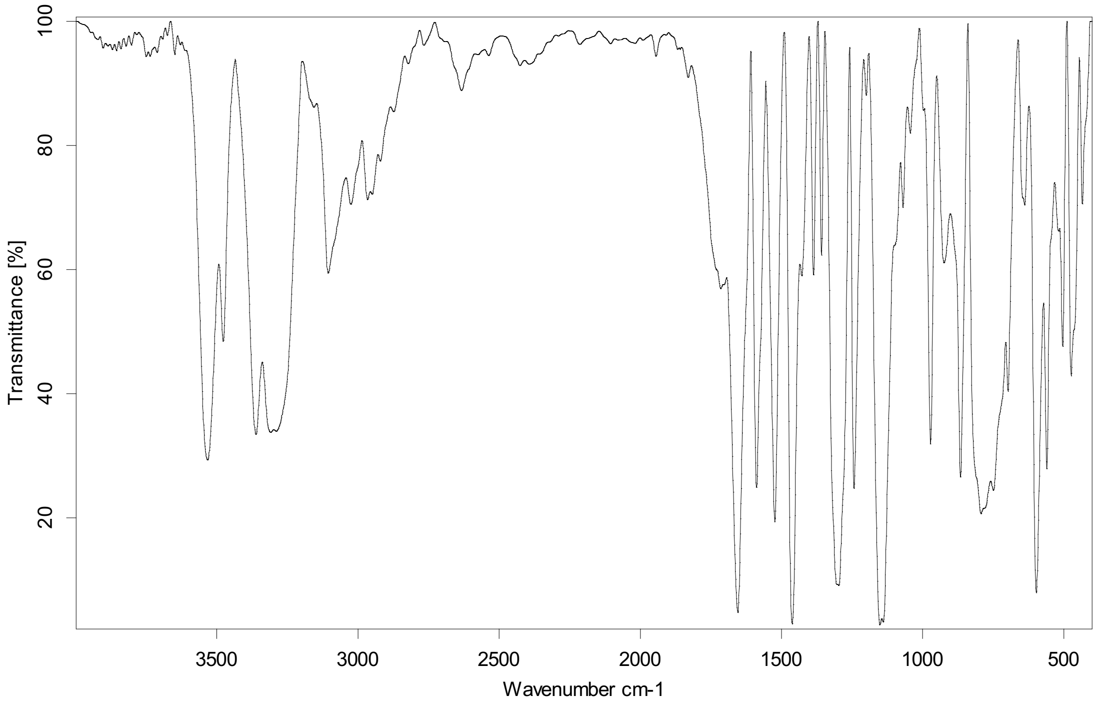

Fig. S11. IR spectrum of **7**.

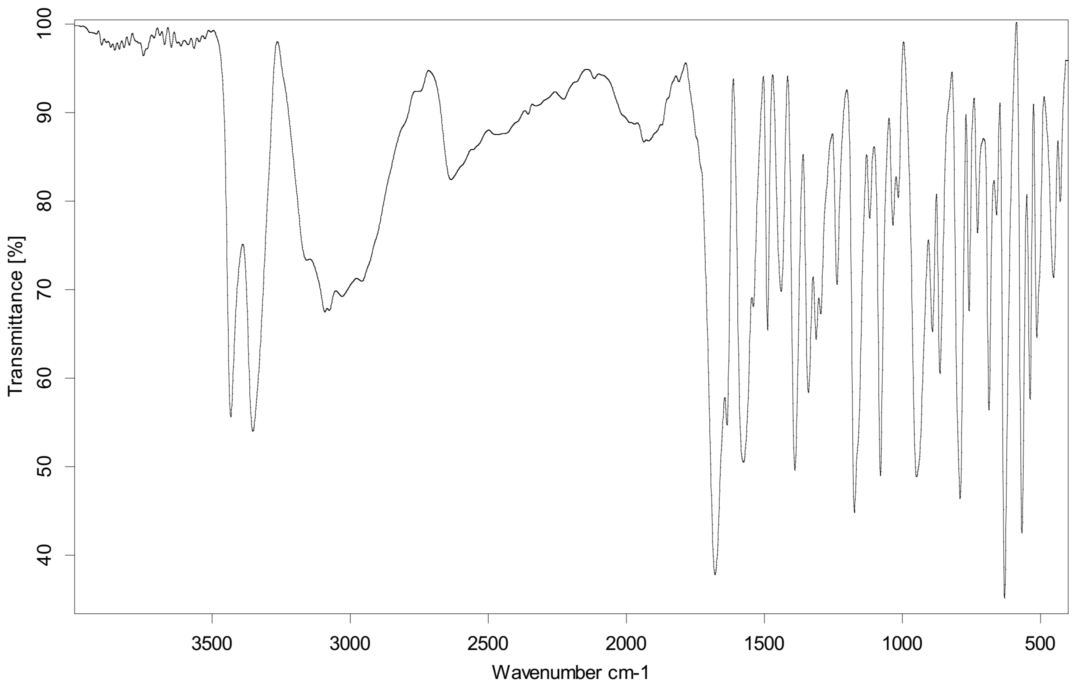

Fig. S12. IR spectrum of **8**.

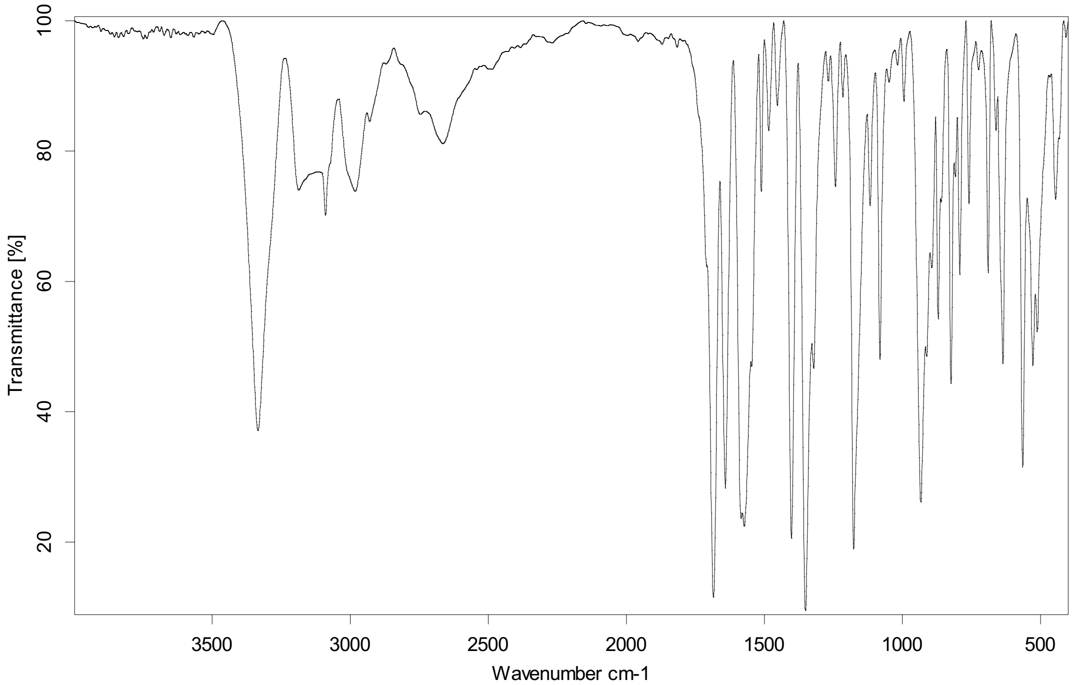

Fig. S13. IR spectrum of **9**.

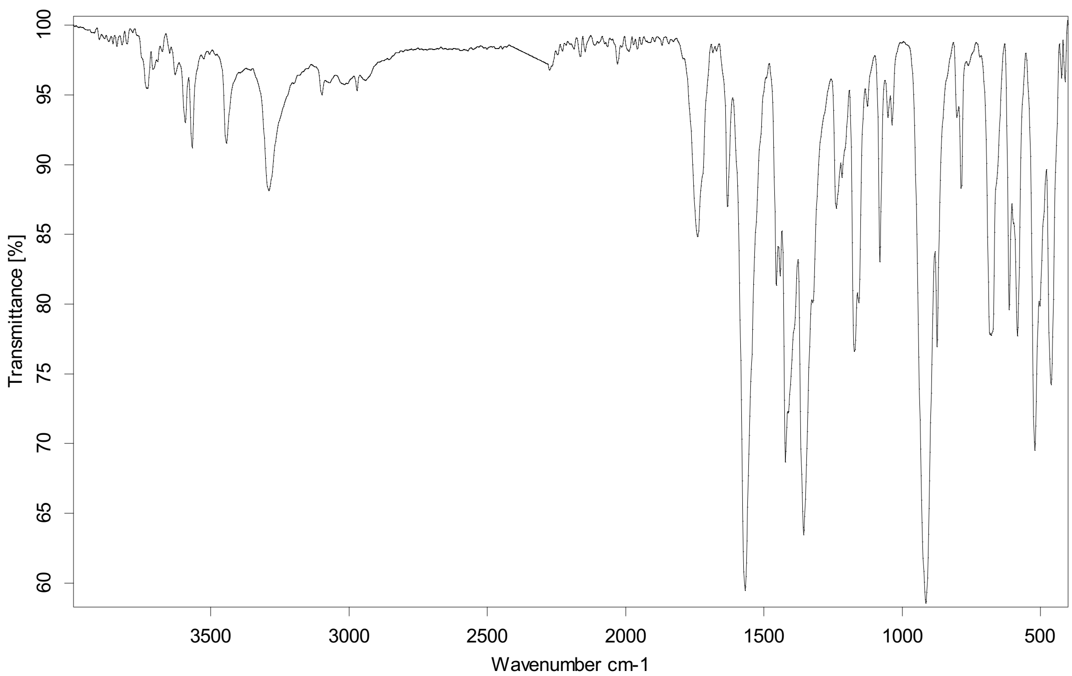

Fig. S14. IR spectrum of **10**.

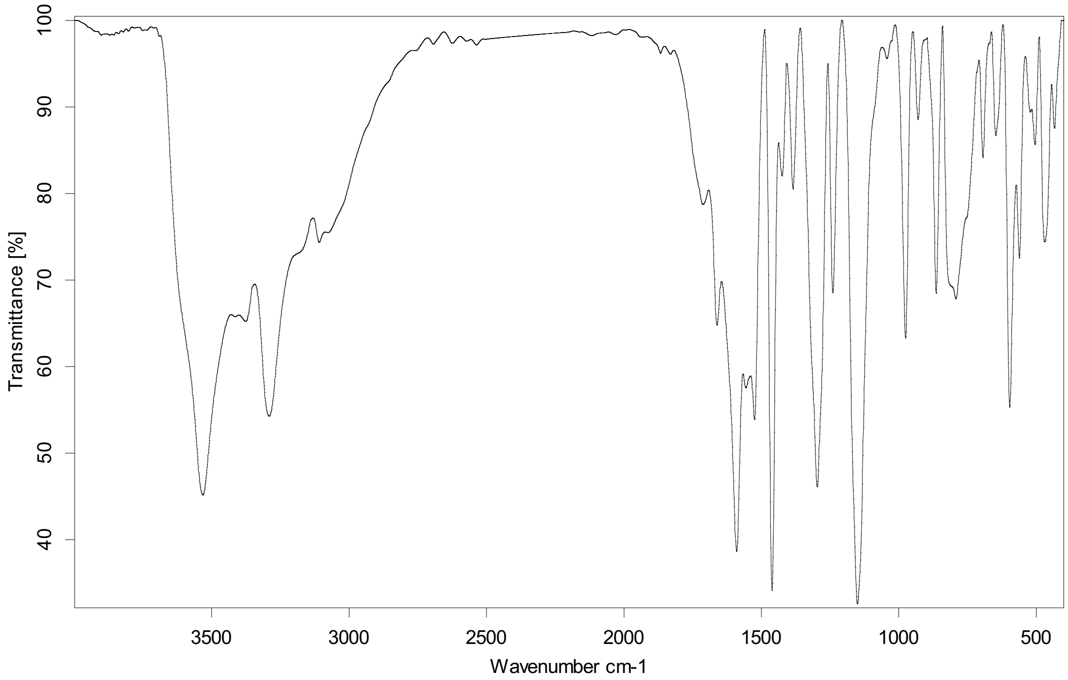

Fig. S15. IR spectrum of **11**.

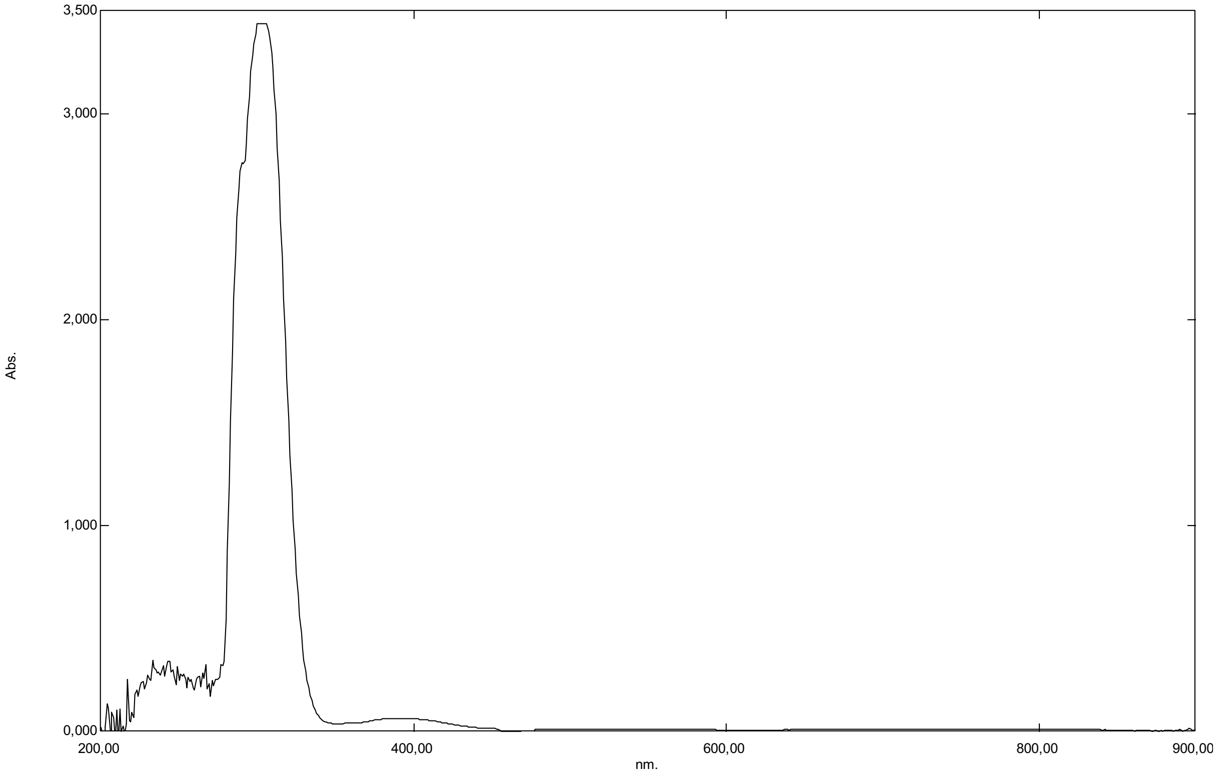

Fig. S16. UV-vis spectrum of **1**.

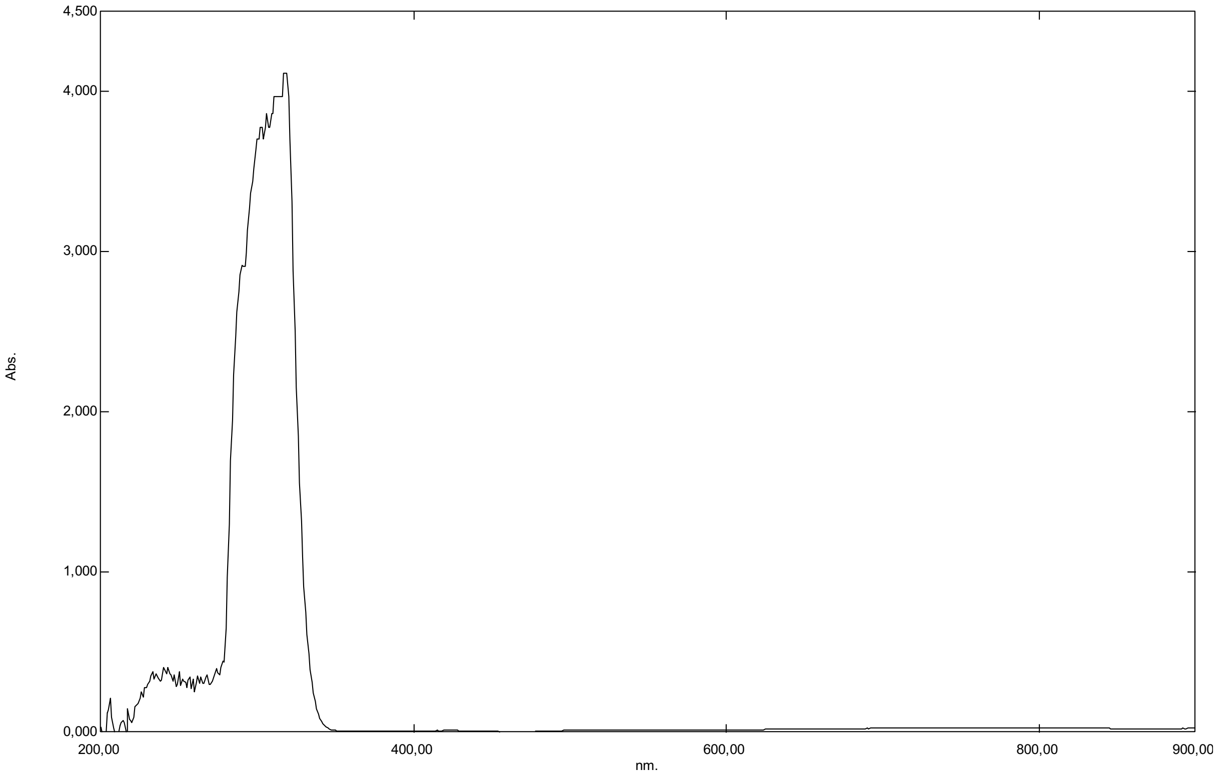

Fig. S17. UV-vis spectrum of **2**.

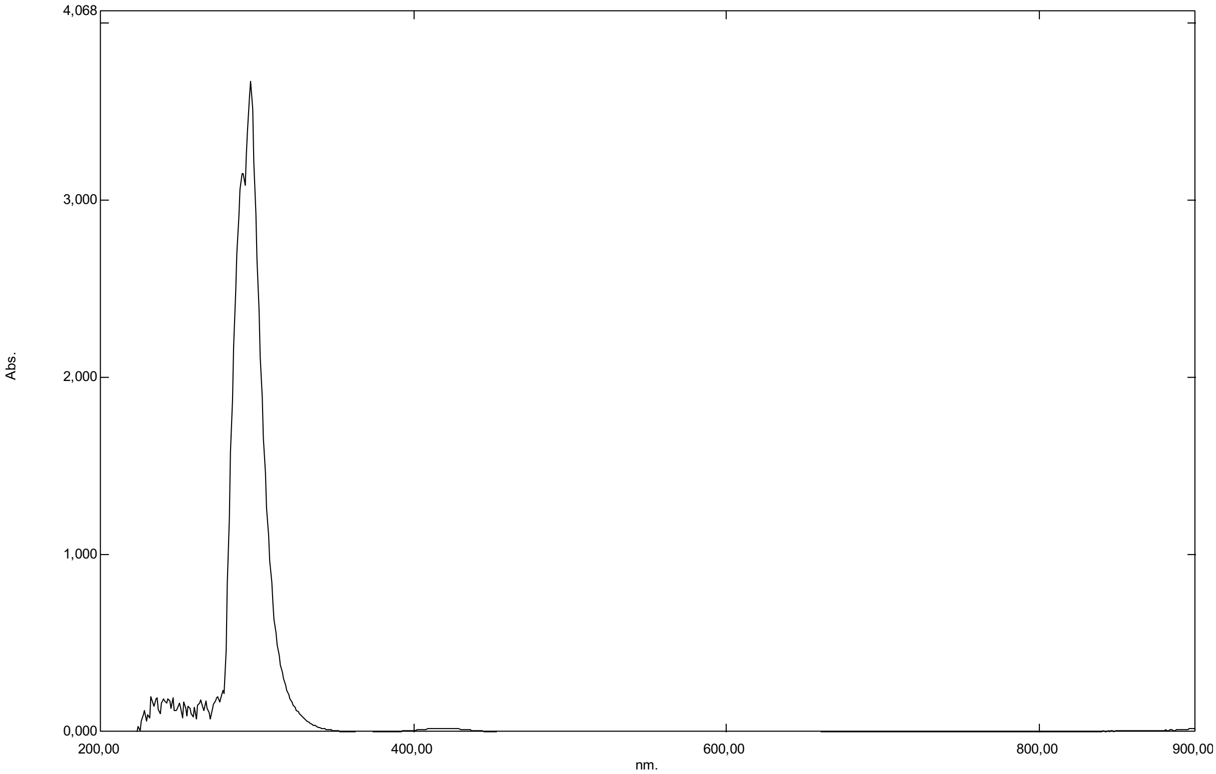

Fig. S18. UV-vis spectrum of **3**.

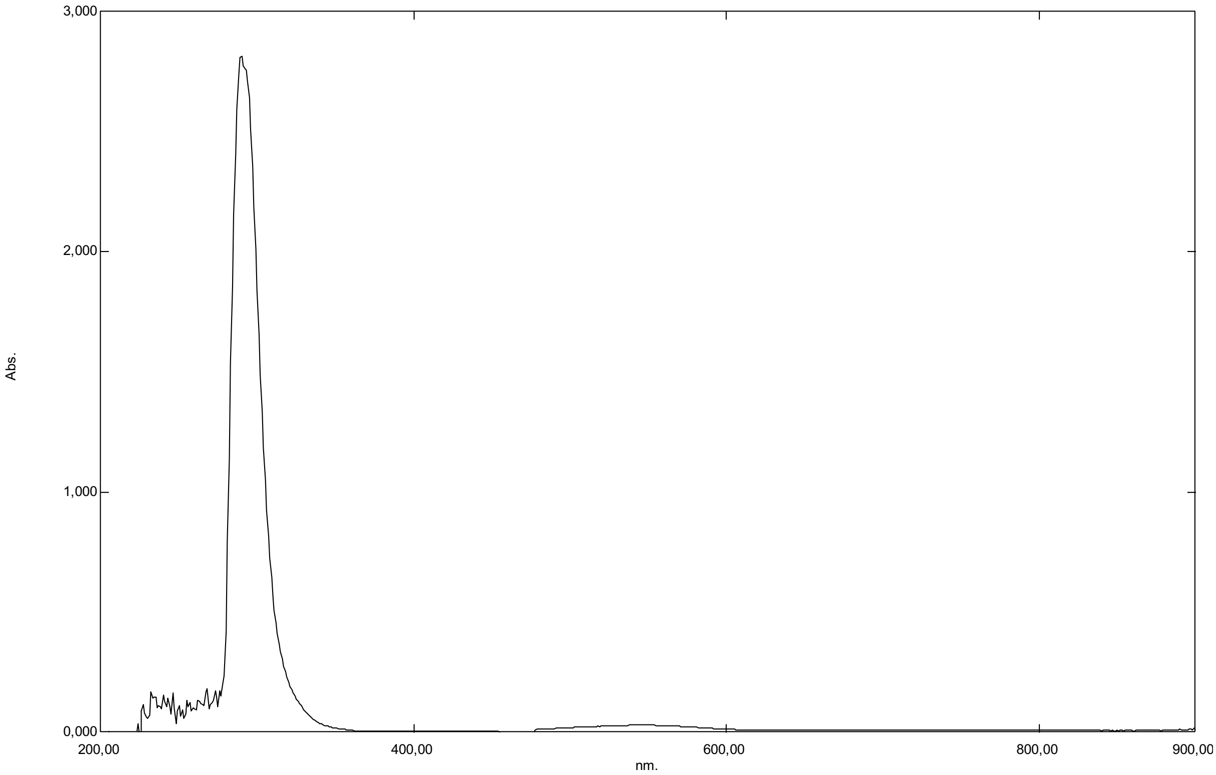

Fig. S19. UV-vis spectrum of **4**.

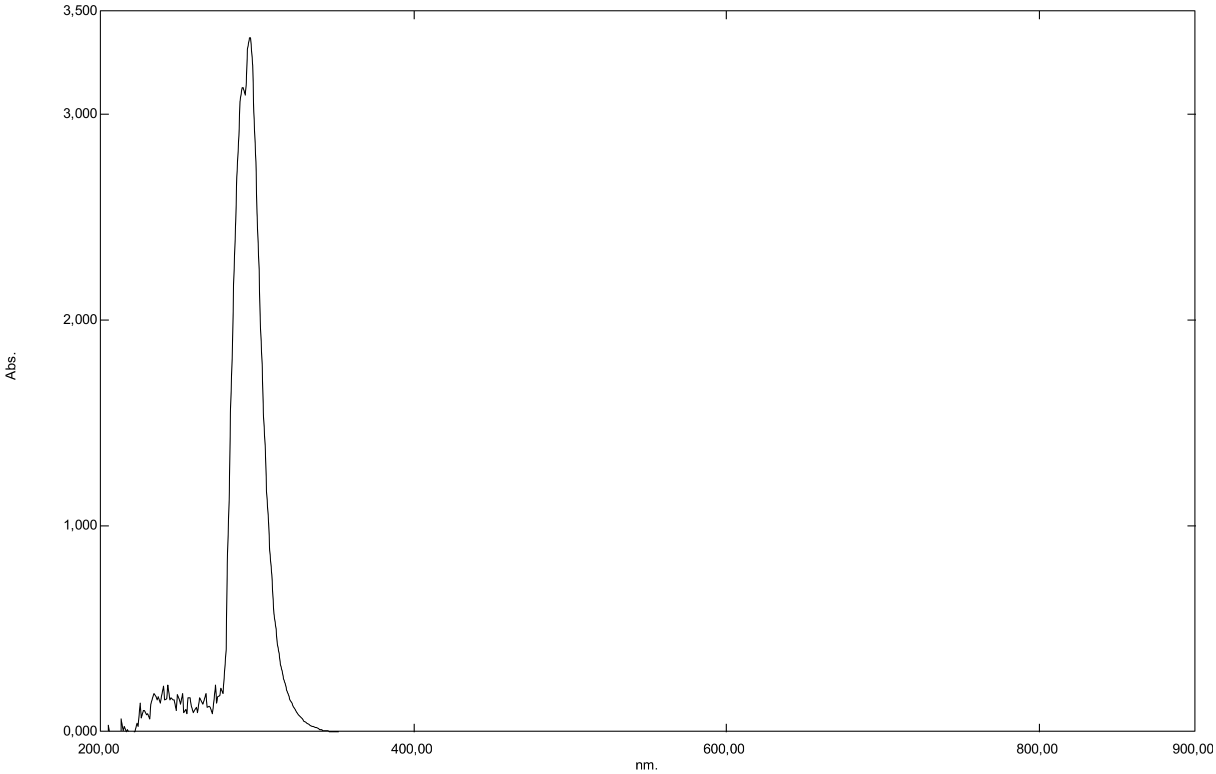

Fig. S20. UV-vis spectrum of **5**.

u

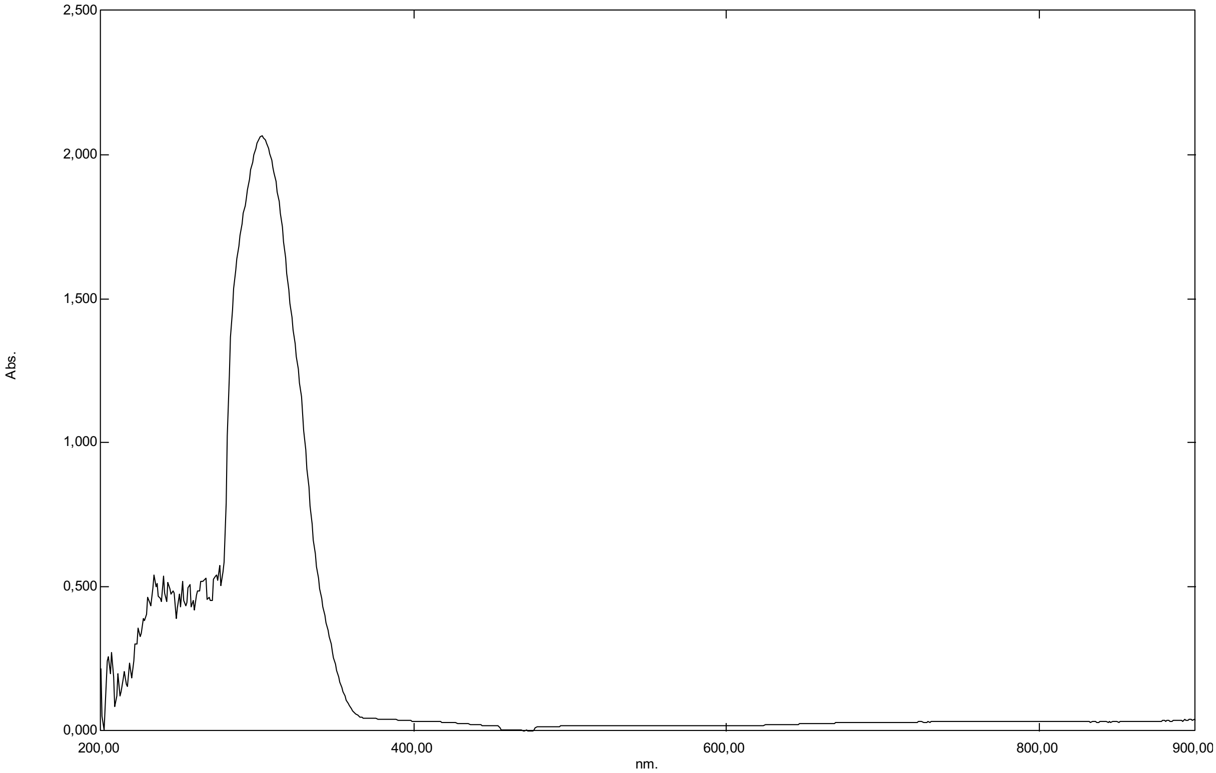

Fig. S21. UV-vis spectrum of **6**.

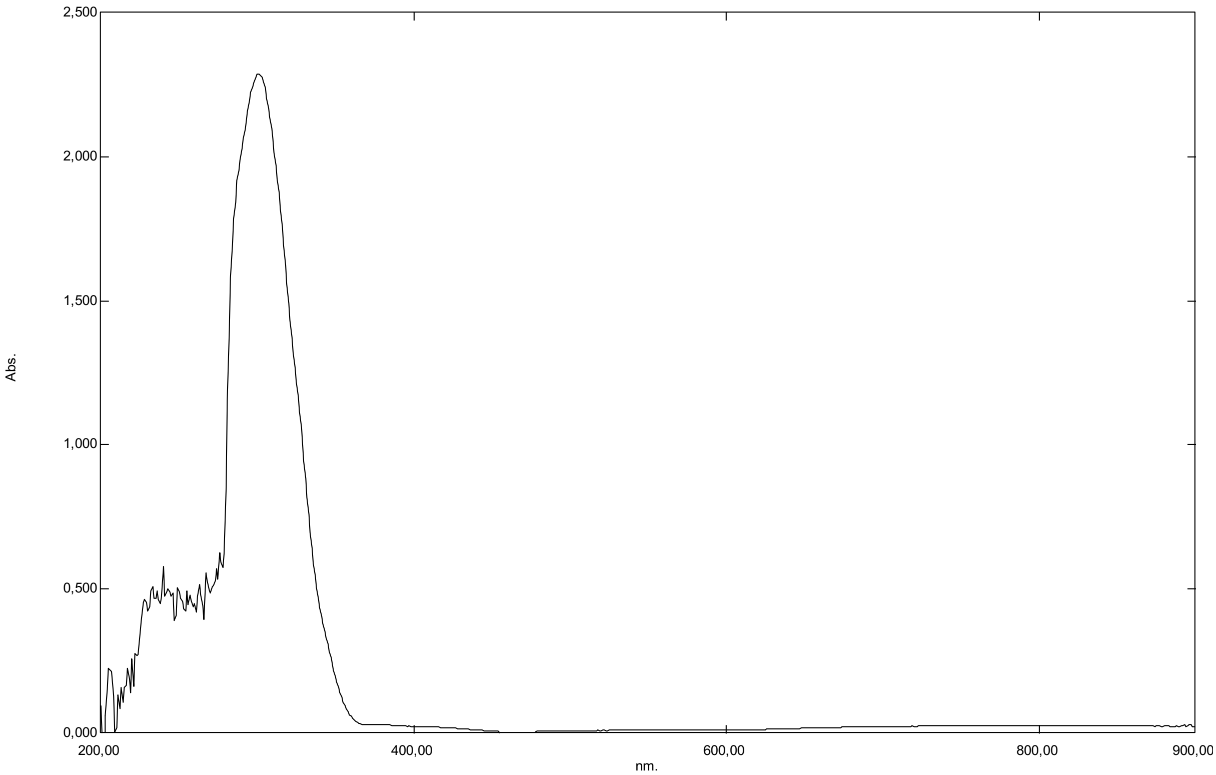

Fig. S22. UV-vis spectrum of **7**.

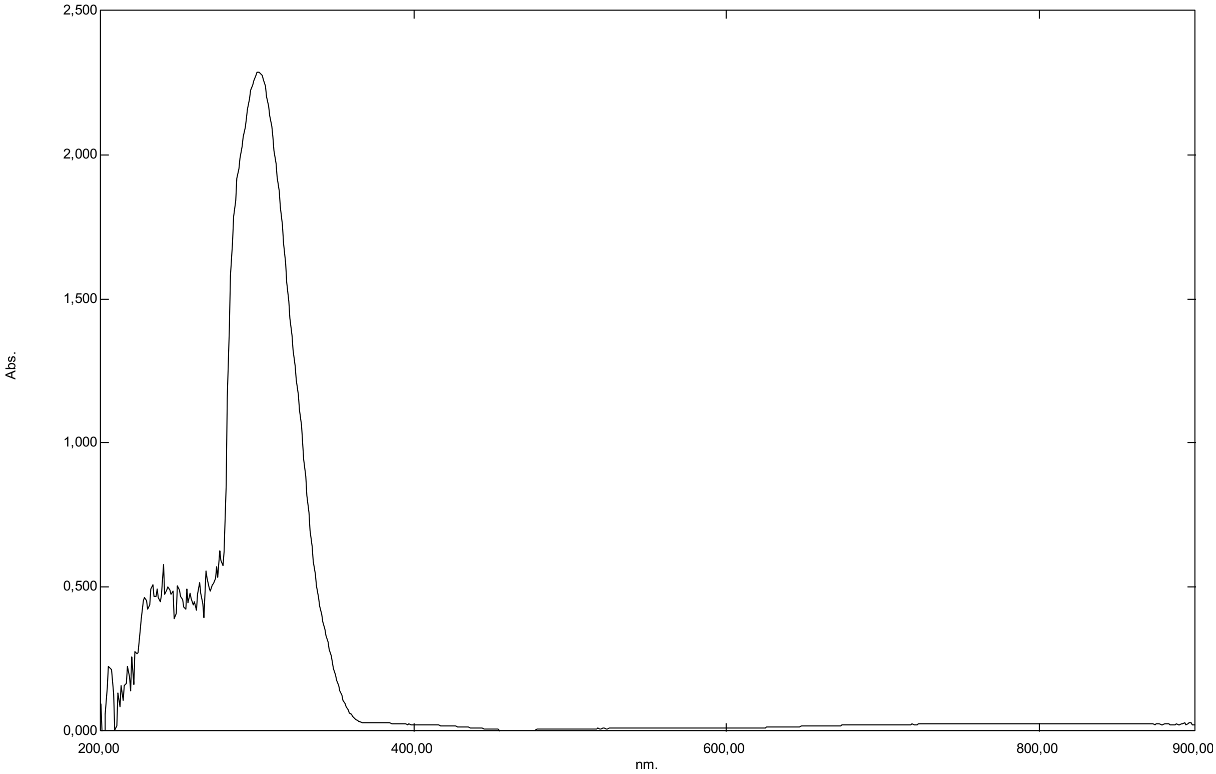

Fig. S23. UV-vis spectrum of **8**.

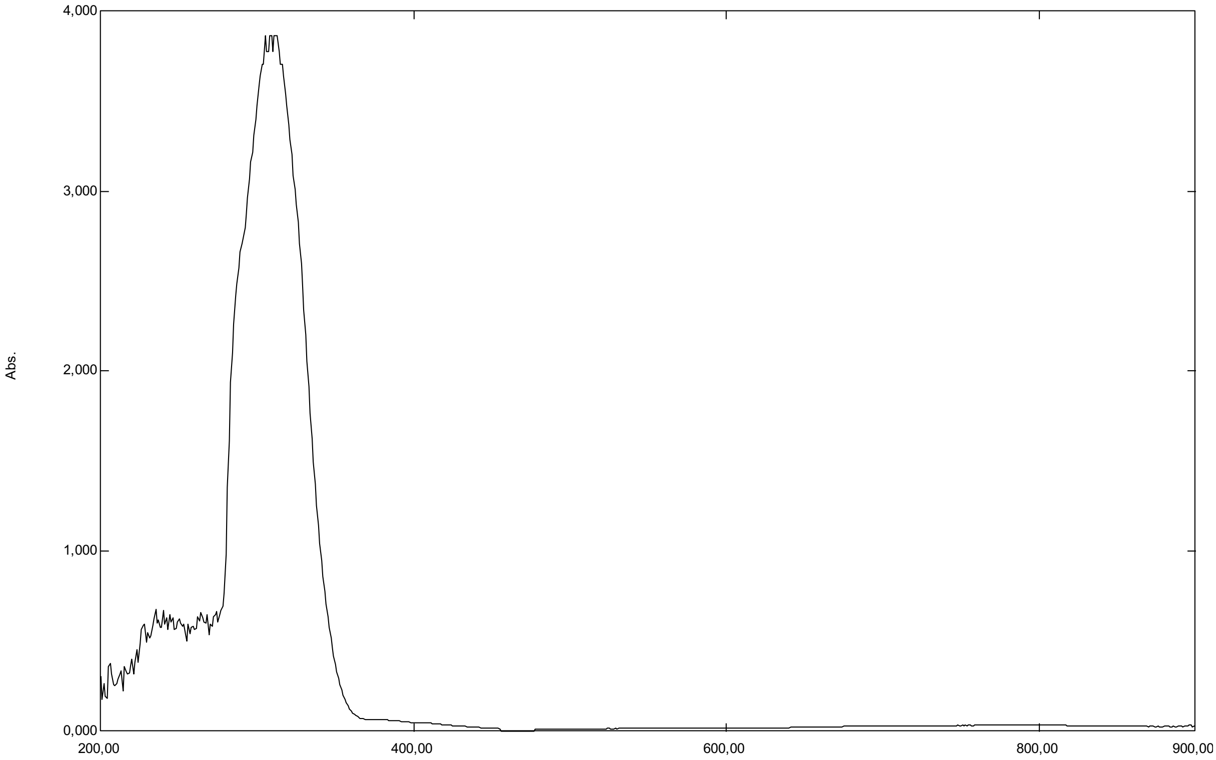

Fig. S24. UV-vis spectrum of **9**.

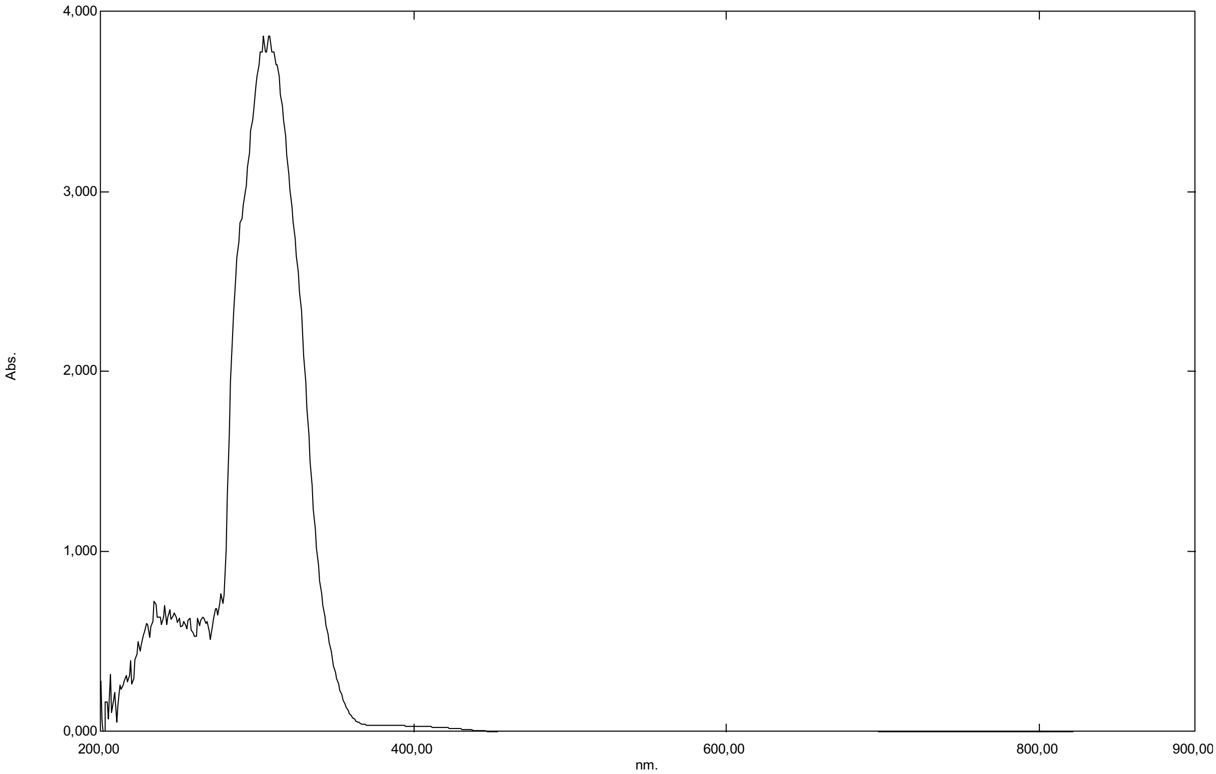

Fig. S25. UV-vis spectrum of **10**.