Electronic Supplementary Material (ESI) for RSC Advances

Supporting Information for:

New organometallic ruthenium(II) complexes containing chelidonic acid (4-oxo-4*H*-pyran-2,6-dicarboxylic acid): Synthesis, structure and in vitro biological activity

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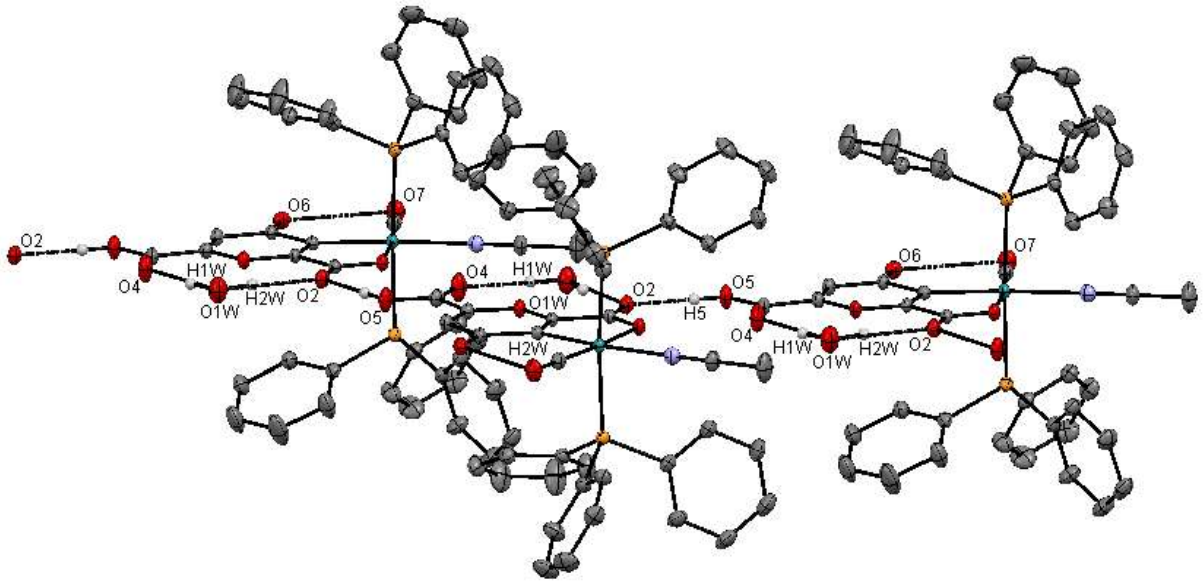

Fig. S1 ORTEP diagram of **3** with hydrogen bonding

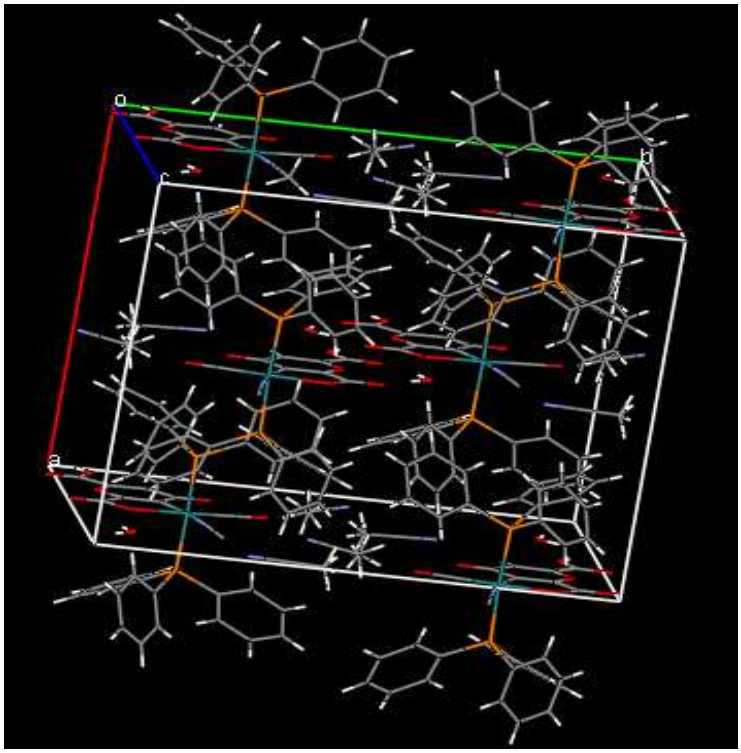

Fig. S2 Packing diagram of the unit cell for complex **3**

Table S1 Selected bond lengths (Å) and angles (°) for **3**

Complex **3**	
Interatomic distances (Å)	
Ru(1)–C(2)	2.033(2)
Ru(1)–O(1)	2.143(2)
Ru(1)–C(8)	1.845(2)
Ru(1)–N(1)	2.119(2)
Ru(1)–P(1)	2.3897(3)
C(5) –C(4)	1.351(3)
C(1) –C(2)	1.359(3)
C(3) –O(6)	1.244(3)
Bond angles(°)	
C(8)–Ru(1)–N(1)	94.53(9)
C(8)–Ru(1)–P(1)	91.71(7)
C(8)–Ru(1)–O(1)	174.35(8)
C(8)–Ru(1)–C(2)	95.83(10)0
C(2)–Ru(1)–O(1)	78.52(7)
C(2)–Ru(1)–P(1)	91.30(6)
C(2)–Ru(1)–N(1)	169.65(8)
O(1)–Ru(1)–P(1)	88.45(5)
O(1)–Ru(1)–N(1)	91.13(7)
N(1)–Ru(1)–P(1)	88.39(6)
P(1)–Ru(1)–P′(1)	175.48(2)

Hydrogen-bonding distances (Å) and angles (°) for **3**

Complex	D-H. . .A	D-H	H. . .A	D. . .A	D-H. . .A
3	O5—H5···O2^{i}	0.85	1.79	2.639 (2)	180
	O1*W*—H1*W*···O4	0.94 (5)	1.91 (5)	2.832 (3)	170 (4)
	O1*W*—H2*W*···O2	1.03 (5)	1.85 (5)	2.867 (3)	167 (4)

Symmetry code: (i) -*x*, -*y*, *z*-1/2.

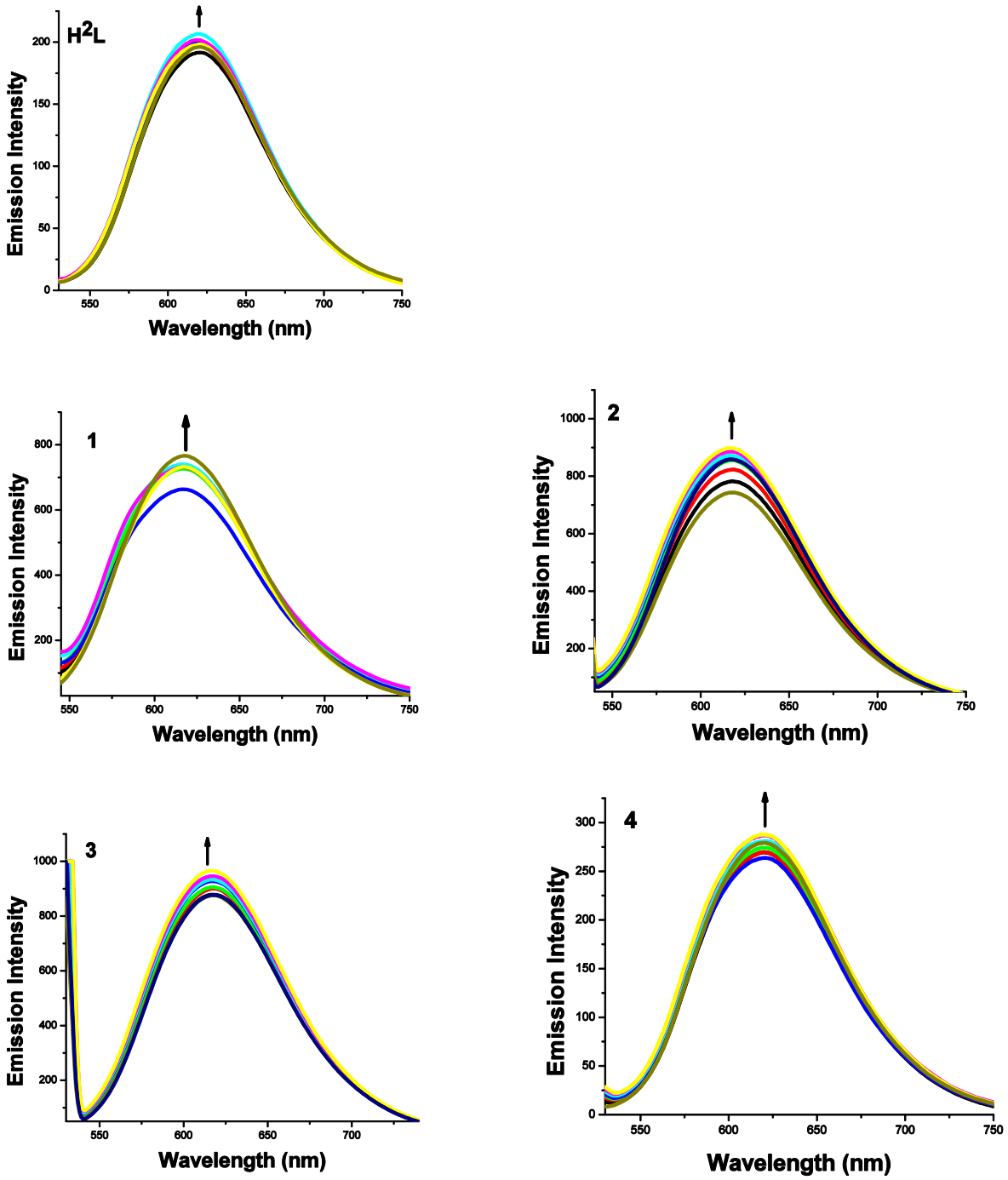

Fig. S3 The emission spectra of the DNA–EB system (λ_{exc} = 515 nm, λ_{em} = 530–750 nm), in the presence of **H^{2}L** and complexes **1**-**4**. [DNA] = 10 μM, [Complex] = 0–50 μM, [EB] = 10 μM. The arrow shows the emission intensity changes upon increasing complex concentration.

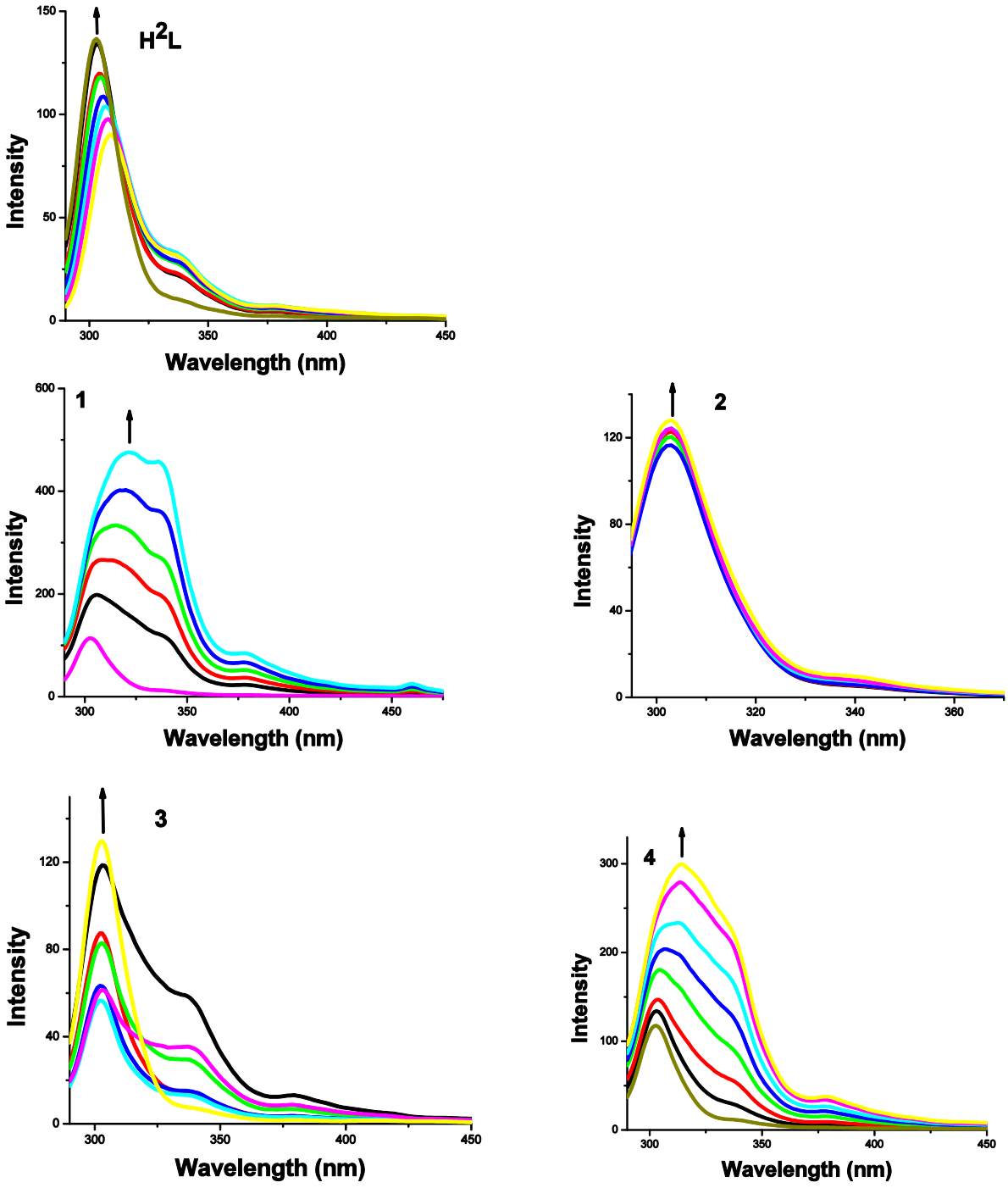

Fig. S4 Synchronous spectra of BSA (1 μM) in the presence of increasing amounts of **H^{2}L** and complexes **1-4** (0 – 40 μM) for a wavelength difference of Δλ = 15 nm. The arrow shows the emission intensity changes upon increasing concentration of compound

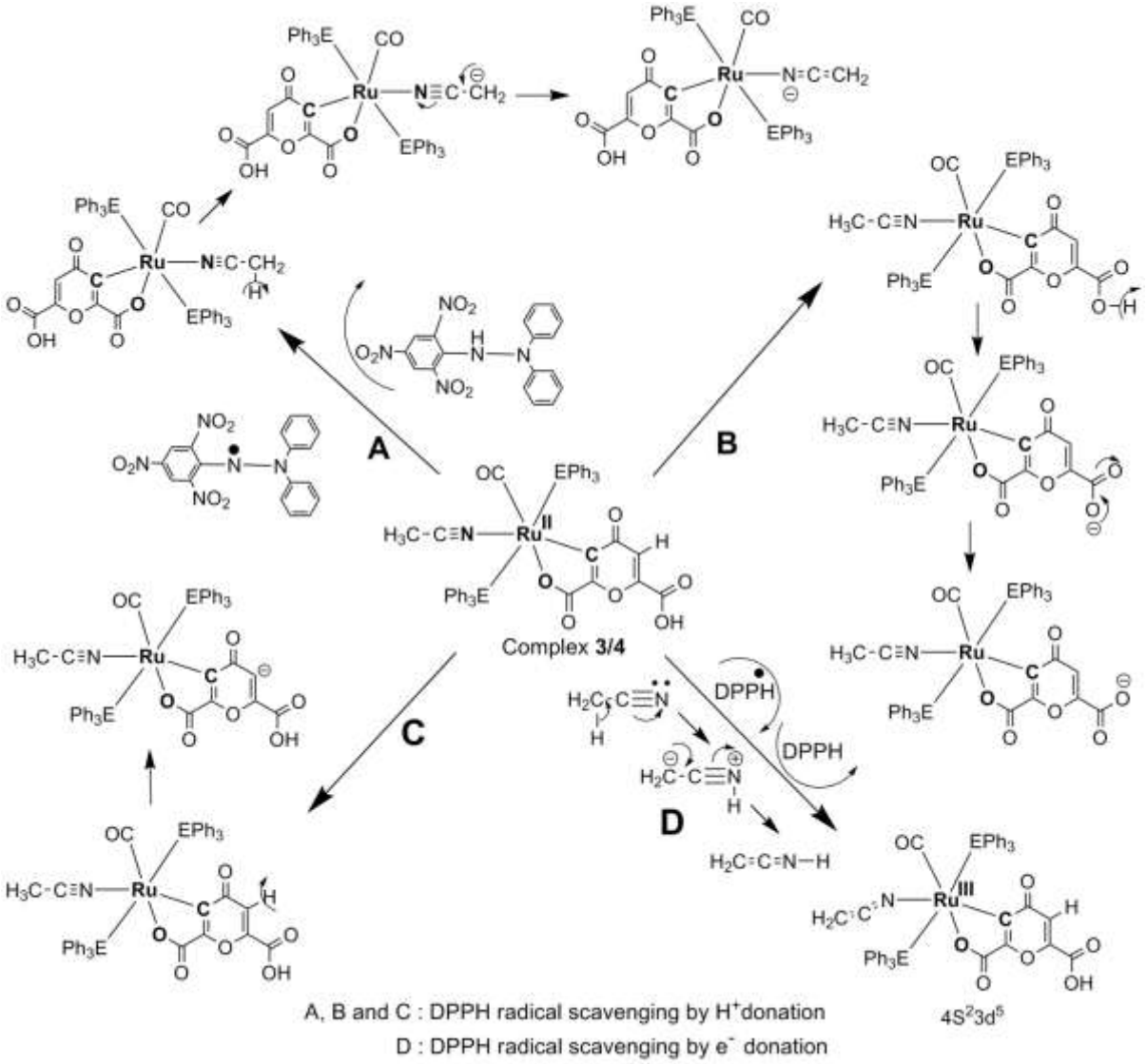

Fig. S5 Plausible mechanisms for DPPH radical scavenging activity