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**ARTICLE TYPE**

**Synthesis, structure, spectroscopy of four novel supramolecular complexes and cytotoxicity study by application of multiple parallel perfused microbioreactors**

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**Table S1** Selected bond lengths (Å) and angles (°) of the complexes **1-4**.

**Fig. S1** The Solid-state IR spectra of complex **1** at a room temperature.

**Fig. S2** The Solid-state IR spectra of complex **2** at a room temperature.

**Fig. S3** The Solid-state IR spectra of complex **3** at a room temperature.

**Fig. S4** The Solid-state IR spectra of complex **4** at a room temperature.

**Fig. S5** The UV-Vis spectra for complexes **1** and **2**.

**Fig. S6** The UV-Vis spectra for complexes **3** and **4**.

**Fig. S7** PXRD powder patterns: a experimental PXRD for complex **1**, b the simulated PXRD pattern calculated from single-crystal structure of complex **1**.

**Fig. S8** PXRD powder patterns: a experimental PXRD for complex **2**, b the simulated PXRD pattern calculated from single-crystal structure of complex **2**.

**Fig. S9** PXRD powder patterns: a experimental PXRD for complex **3**, b the simulated PXRD pattern calculated from single-crystal structure of complex **3**.

**Fig. S10** PXRD powder patterns: a experimental PXRD for complex **4**, b the simulated PXRD pattern calculated from single-crystal structure of complex **4**.

**Fig. S11** Solid-state photoluminescence spectra of complex **1** at room temperature.

**Fig. S12** Solid-state photoluminescence spectra of complex **2** at room temperature.

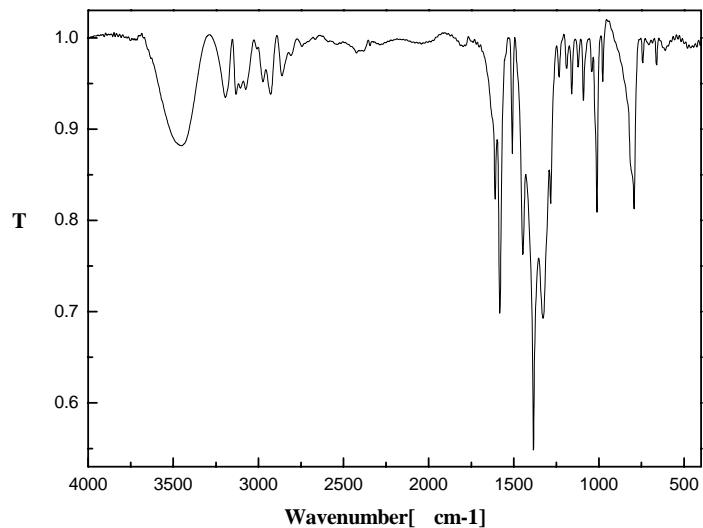
**Fig. S13** Solid-state photoluminescence spectra of complex **3** at room temperature.

**Fig. S14** Solid-state photoluminescence spectra of complex **4** at room temperature.

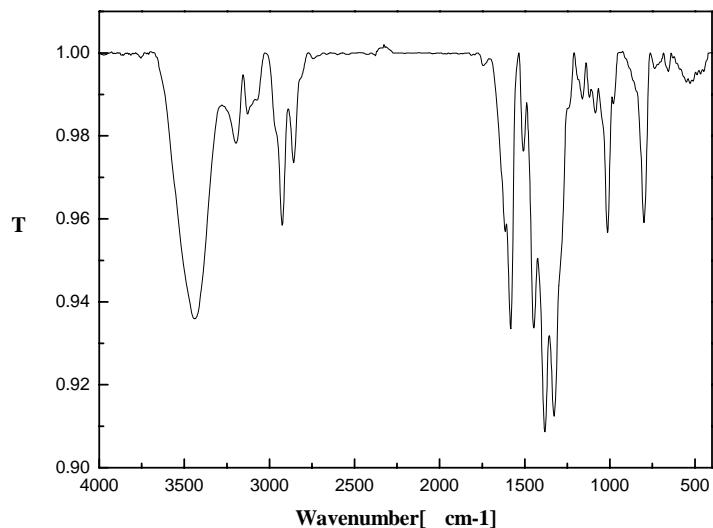
**Table S1** Selected bond lengths ( $\text{\AA}$ ) and angles ( $^\circ$ ) of the complexes **1-4**.

Complex 1					
Cd-N4	2.290(8)	Cd-N7	2.311(7)	Cd-N8	2.331(16)
Cd-N3	2.296(18)	Cd-N9	2.359(8)	Cd-N2	2.364(9)
N4-Cd-N7	97.6(3)	N4-Cd-N8	109.3(3)	N7-Cd-N8	70.6(3)
N4-Cd-N3	72.4(3)	N7-Cd-N3	115.2(3)	N8-Cd-N3	173.9(2)
N4-Cd-N9	96.5(3)	N7-Cd-N9	140.6(3)	N8-Cd-N9	70.0(3)
N3-Cd-N9	104.1(3)	N4-Cd-N2	140.9(3)	N7-Cd-N2	98.0(3)
N8-Cd-N2	109.7(3)	N3-Cd-N2	68.5(3)	N9-Cd-N2	93.8(3)
Complex 2					
Cd-N3	2.339(17)	Cd-N9	2.305(8)	Cd-N7	2.309(9)
Cd-N8	2.256(16)	Cd-N4	2.335(8)	Cd-N2	2.369(8)
N3-Cd-N9	116.5(3)	N3-Cd-N7	103.4(3)	N9-Cd-N7	140.1(3)
N3-Cd-N8	175.1(3)	N9-Cd-N8	68.3(3)	N7-Cd-N8	71.8(3)
N3-Cd-N4	69.9(3)	N9-Cd-N4	98.6(3)	N7-Cd-N4	93.7(3)
N8-Cd-N4	109.4(3)	N3-Cd-N2	70.9(3)	N9-Cd-N2	98.7(3)
N7-Cd-N2	95.1(3)	N8-Cd-N2	109.7(3)	N4-Cd-N2	140.7(3)
Complex 3					
Zn-N6	2.0269(17)	Zn-N3	2.0729(18)	Zn-N2	2.168(2)
Zn-O3	2.2155(15)	Zn-O2	2.2206(16)	Zn-N4	2.241(2)
N6-Zn-N3	170.98(8)	N6-Zn-N2	110.68(8)	N3-Zn-N2	76.25(8)
N6-Zn-O3	75.56(6)	N3-Zn-O3	98.65(6)	N2-Zn-O3	93.51(7)
N6-Zn-O2	75.78(6)	N3-Zn-O2	109.92(6)	N2-Zn-O2	95.56(7)
O3-Zn-O2	151.32(6)	N6-Zn-N4	98.66(7)	N3-Zn-N4	74.54(8)
N2-Zn-N4	150.66(8)	O3-Zn-N4	93.54(8)	O2-Zn-N4	91.75(8)
Complex 4					
Zn1-N8	2.056(7)	Zn1-N3	2.071(7)	Zn1-N4	2.117(7)
Zn1-N7	2.137(7)	Zn1-N9	2.190(7)	Zn1-N2	2.199(7)
Zn2-O12	2.055(7)	Zn2-O8	2.088(6)	Zn2-O4	2.132(6)
Zn2-N13	2.167(7)	Zn2-N12	2.166(7)	Zn2-N11	2.181(7)
Zn3-O19	2.071(6)	Zn3-O24	2.074(7)	Zn3-N14	2.100(8)
Zn3-O16	2.114(6)	Zn3-N16	2.160(7)	Zn3-N15	2.170(8)
N8-Zn1-N3	173.6(3)	N8-Zn1-N4	106.4(3)	N3-Zn1-N4	76.0(3)
N8-Zn1-N7	76.0(3)	N3-Zn1-N7	109.9(3)	N4-Zn1-N7	94.9(3)
N8-Zn1-N9	75.2(3)	N3-Zn1-N9	98.9(3)	N4-Zn1-N9	93.0(3)
N7-Zn1-N9	151.2(3)	N8-Zn1-N2	101.9(3)	N3-Zn1-N2	75.6(3)
N4-Zn1-N2	151.6(3)	N7-Zn1-N2	94.4(3)	N9-Zn1-N2	91.7(3)
O12-Zn2-O8	95.0(3)	O12-Zn2-O4	94.3(3)	O8-Zn2-O4	165.8(3)
O12-Zn2-N13	78.7(3)	O8-Zn2-N13	104.7(3)	O4-Zn2-N13	87.6(3)
O12-Zn2-N12	168.7(3)	O8-Zn2-N12	78.0(3)	O4-Zn2-N12	94.3(3)
N13-Zn2-N12	94.4(3)	O12-Zn2-N11	99.5(3)	O8-Zn2-N11	91.6(3)
O4-Zn2-N11	76.3(3)	N13-Zn2-N11	163.6(3)	N12-Zn2-N11	89.6(3)

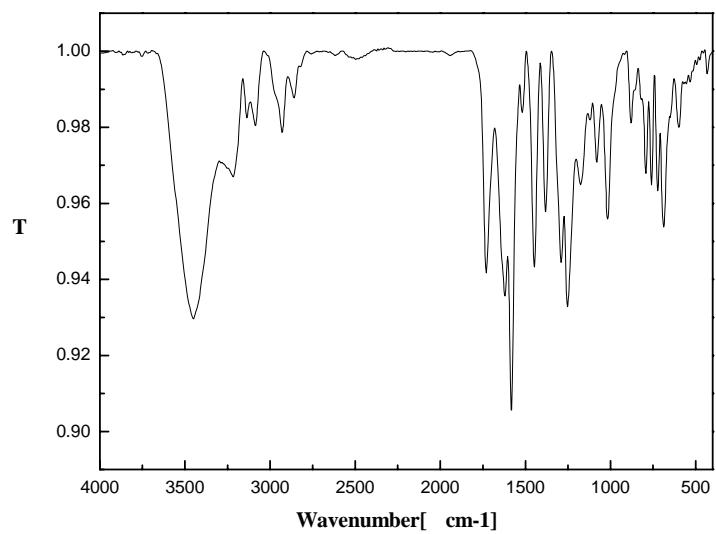
O19-Zn3-O24	89.2(3)	O19-Zn3-N14	101.5(3)	O24-Zn3-N14	93.5(3)
O19-Zn3-O16	175.4(3)	O24-Zn3-O16	95.2(3)	N14-Zn3-O16	76.9(3)
O19-Zn3-N16	89.9(3)	O24-Zn3-N16	77.4(3)	N14-Zn3-N16	165.4(3)
O16-Zn3-N16	92.4(3)	O19-Zn3-N15	78.5(3)	O24-Zn3-N15	163.6(3)
N14-Zn3-N15	99.6(3)	O16-Zn3-N15	97.4(3)	N16-Zn3-N15	91.5(3)



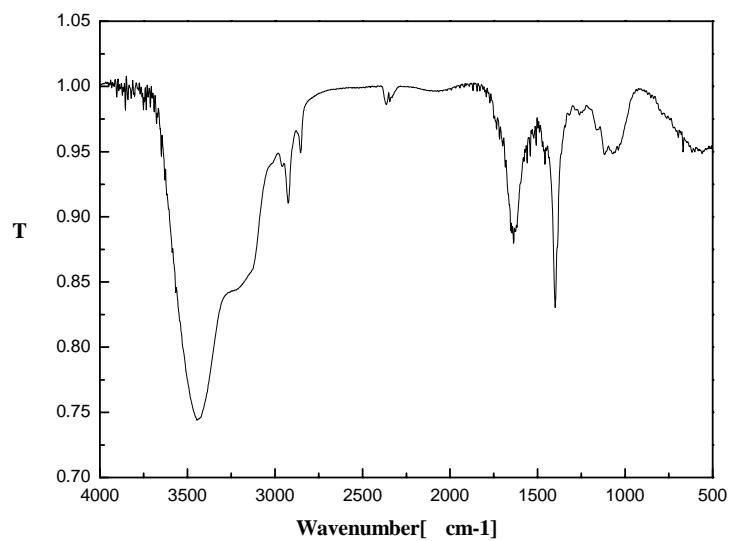
**Fig. S1** The Solid-state IR spectra of complex **1** at a room temperature.



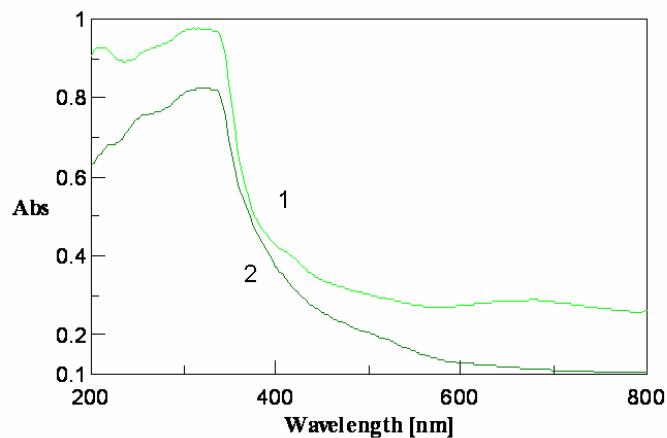
**Fig. S2** The Solid-state IR spectra of complex **2** at a room temperature.



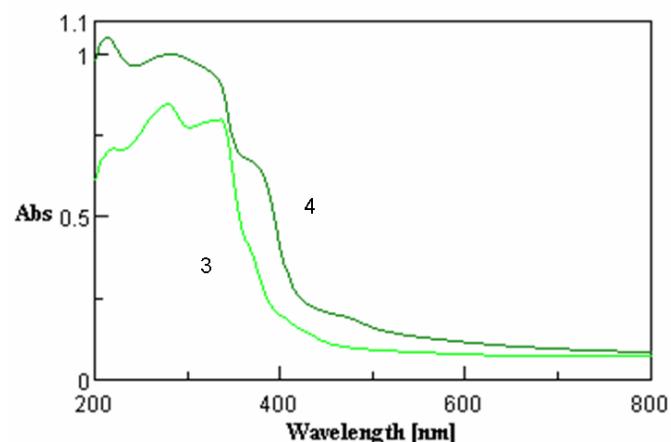
**Fig. S3** The Solid-state IR spectra of complex **3** at a room temperature.



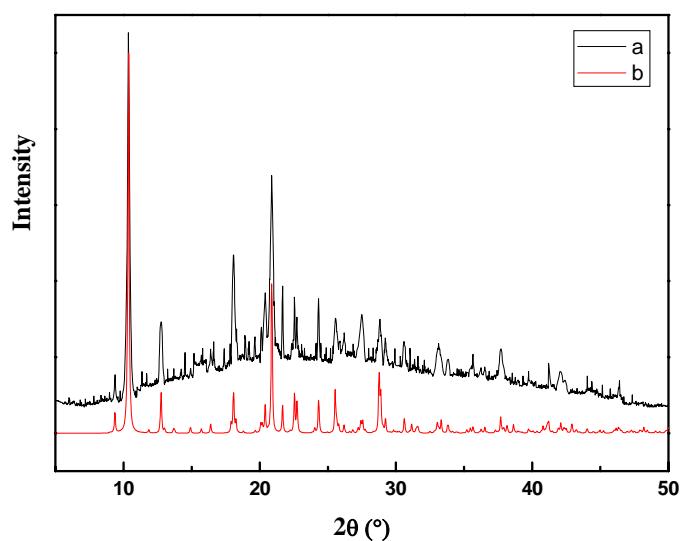
**Fig. S4** The Solid-state IR spectra of complex **4** at a room temperature.



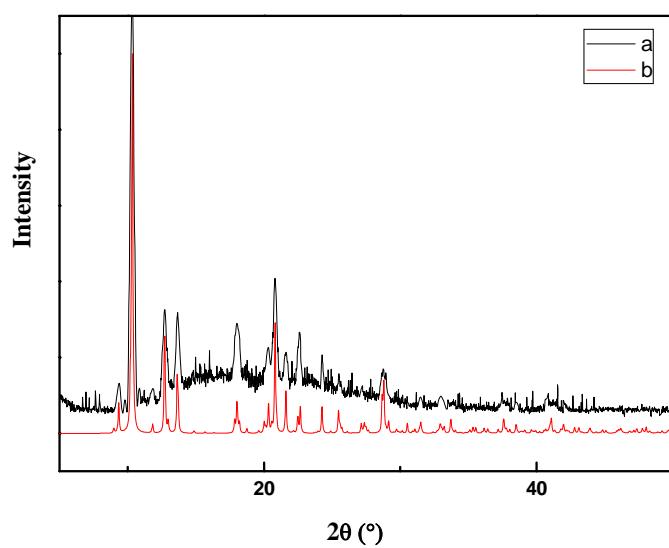
**Fig. S5** The UV-Vis spectra for complexes **1** and **2**.



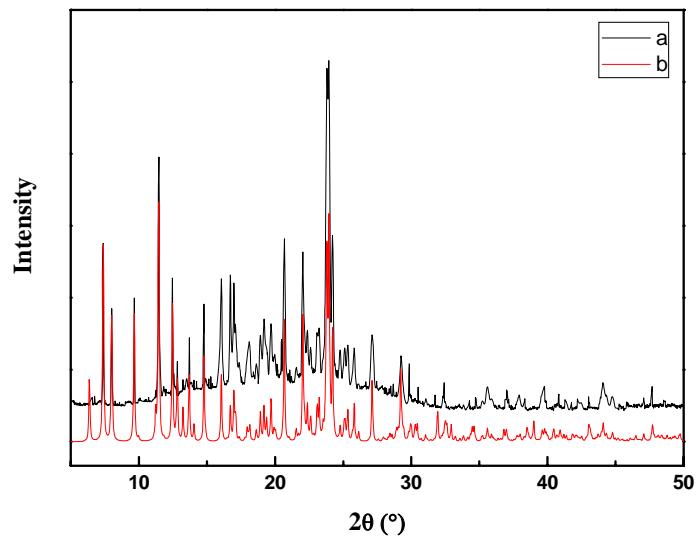
**Fig. S6** The UV-Vis spectra for complexes **3** and **4**.



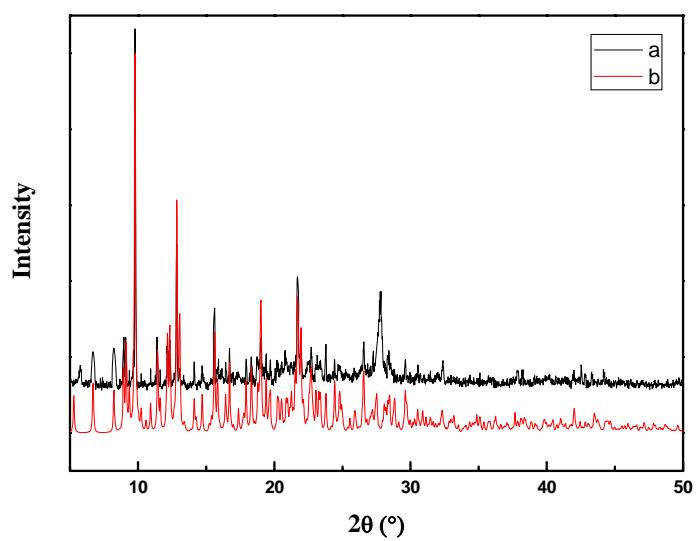
**Fig. S7** PXRD powder patterns: a experimental PXRD for complex **1**, b the simulated PXRD pattern calculated from single-crystal structure of complex **1**.



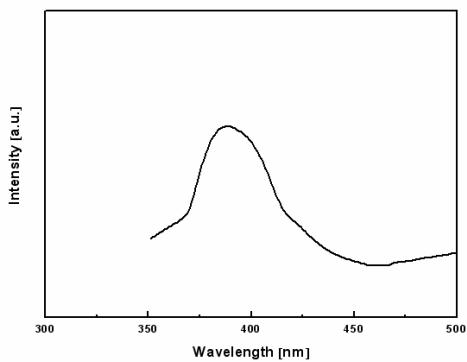
**Fig. S8** PXRD powder patterns: a experimental PXRD for complex **2**, b the simulated PXRD pattern calculated from single-crystal structure of complex **2**.



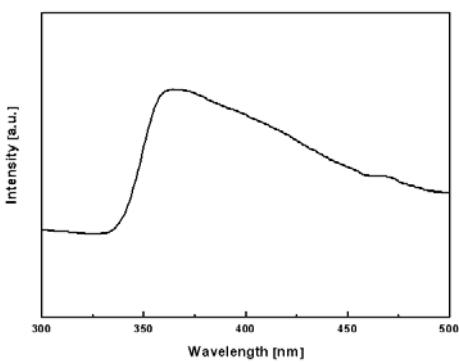
**Fig. S9** PXRD powder patterns: a experimental PXRD for complex **3**, b the simulated PXRD pattern calculated from single-crystal structure of complex **3**.



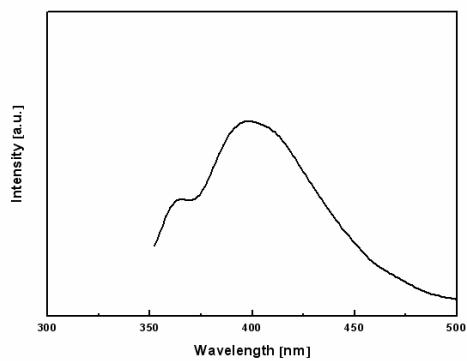
**Fig. S10** PXRD powder patterns: a experimental PXRD for complex **4**, b the simulated PXRD pattern calculated from single-crystal structure of complex **4**.



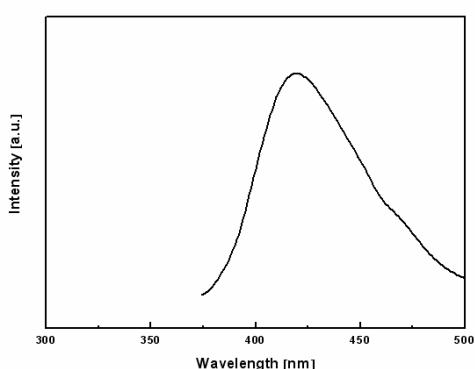
**Fig. S11** Solid-state photoluminescence spectra of complex **1** at room temperature.



**Fig. S12** Solid-state photoluminescence spectra of complex **2** at room temperature.



**Fig. S13** Solid-state photoluminescence spectra of complex **3** at room temperature.



**Fig. S14** Solid-state photoluminescence spectra of complex **4** at room temperature.