

SUPPLEMENTARY MATERIAL TO
**Antimicrobial, antioxidant and DNA-binding studies of
palladium(II) complexes with different chelate ligands
containing nitrogen donor atoms**

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J. Serb. Chem. Soc. 83 (11) (2018) 1229–1242

CHARACTERISATION DATA FOR C1–C4

[Pd(terpy)Cl]Cl·3H₂O (C1). Yield: 0.977 g, 85 %; Anal. Calcd. for C₁₅H₁₁Cl₂N₃Pd (*FW*: 410.59): C, 43.88; H, 2.70; N, 10.23 %. Found: C, 43.64; H, 2.55; N, 10.20 %; ¹H-NMR (200 MHz, CD₃OD, δ / ppm): 8.29 (2H, *d*, *J*_{HH} = 7.0 Hz), 8.18 (2H, *d*, *J*_{HH} = 7.0 Hz), 8.09 (2H, *s*), 7.97 (2H, *d*, *J*_{HH} = 7.3 Hz), 7.48 (2H, *t*, *J*_{HH} = 7.2 Hz), 7.27 (1H, *dd*, *J*_{HH} = 7.0 Hz); UV/Vis (H₂O; λ_{max} / nm): 249, 277, 326, 344.

[Pd(en)Cl₂] (C2). Yield: 0.543 g, 81.65 %; Anal. Calcd. for C₂H₈Cl₂N₂Pd (*FW*: 237.42): C, 10.12; H, 3.40; N, 11.80 %. Found: C, 9.98; H, 3.42; N, 11.12 %; ¹H-NMR (200 MHz, CD₃OD, δ / ppm): 2.68–2.79 (*m*, enCH₂).

[Pd(DMEAlm^{iPr})Cl₂] (C3). Yield: 0.1254 g, 83.66 %; Anal. Calcd. for C₁₅H₃₀Cl₂N₄Pd (*FW*: 443.75): C, 40.60; H, 6.81; N, 12.63 %. Found: C: 39.99; H: 6.88; N: 12.54 %; ¹H-NMR (300 MHz, CDCl₃, δ / ppm): 5.30 (2H, *sept*, *J*_{HH} = 7.0 Hz, CHMe₂), 2.73 (2H, *t*, *J*_{HH} = 7.3 Hz, C=NCH₂CH₂), 2.35 (2H, *t*, *J*_{HH} = 7.3 Hz, CH₂CH₂NMe₂), 2.75 (6H, *s*, N(CH₃)₂), 2.05 (6H, *s*, CCH₃), 1.65 (6H, *d*, *J*_{HH} = 7.0 Hz, CH(CH₃)₂), 1.52 (6H, *d*, *J*_{HH} = 7.0 Hz, CH(CH₃)₂).

[Pd(dach)Cl₂] (C4) Yield: 0.772 g, 94.6 %; Anal. Calcd. for C₆H₁₄Cl₂N₂Pd (*FW*: 291.51): C, 29.88; H, 6.27; N, 8.71 %. Found: C, 30.10; H, 6.18; N, 8.67 %; ¹H-NMR (200 MHz, CD₃OD, δ / ppm): 1.17–1.62 (*m*, 4H, dachCH₂), 1.76–2.08 (*m*, 4H, dachCH₂), 2.45–2.61 (*m*, 2H, dach CH).

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TABLE S-I. The antimicrobial activities ($\mu\text{g mL}^{-1}$) of the positive controls; *MIC* – minimal inhibitory concentration; *MMC* – minimal microbicidal concentration

Tested bacteria and fungi	Tetracycline		Ceftriaxone		Vancomycin	
	<i>MIC</i>	<i>MMC</i>	<i>MIC</i>	<i>MMC</i>	<i>MIC</i>	<i>MMC</i>
Bacteria						
<i>B. subtilis</i>	0.98	1.96	31.25	31.25	1.96	1.96
<i>B. subtilis</i> ATCC 6633	1.96	15.63	31.25	31.25	0.98	1.96
<i>S. aureus</i> ATCC 25923	<0.49	1.96	1.96	3.91	0.49	0.98
<i>P. mirabilis</i> ATCC 12453	15.62	31.25	<0.98	<0.98	31.25	31.25
<i>P. aeruginosa</i> ATCC 27853	7.81	62.5	7.81	15.62	250	>250
<i>E. coli</i>	1.96	3.91	<0.98	<0.98	125	125
<i>E. coli</i> ATCC 25922	0.98	3.91	<0.98	<0.98	125	250
<i>S. enterica</i>	0.49	3.91	<0.49	<0.49	250	250
Fungi						
<i>R. mucilaginosa</i>	31.25	500	<0.49	<0.49	<0.098	0.39
<i>C. albicans</i> ATCC 10231	31.25	62.5	1.96	1.96	<0.098	<0.098
<i>S. boulardii</i>	7.81	31.25	1.96	1.96	<0.098	<0.098
<i>P. italicum</i>	250	500	<0.49	<0.49	<0.098	1.56
<i>P. chrysogenum</i>	1000	1000	31.25	62.5	0.195	0.39
<i>M. mucedo</i> ATCC 20094	250	250	7.81	7.81	<0.098	0.39
<i>T. asperellum</i> ATCC 13233	500	1000	62.5	125	0.78	1.56
<i>A. flavus</i> ATCC 9170	500	500	<0.49	1.96	0.39	0.78
<i>A. fumigatus</i> ATCC 204305	1000	1000	62.5	125	0.195	0.195
<i>A. brasiliensis</i> ATCC 16404	1000	1000	31.25	62.5	0.195	0.39

TABLE S-II. Antibiofilm activity (biofilm inhibitory concentration, *BIC*_{50/90} / $\mu\text{g mL}^{-1}$) of ligand **L1**, complex **C1** and the positive controls (the values represent the lowest concentration of antibiotics (tetracycline, ceftriaxone and vancomycin))

Tested species	<i>BIC</i> ₅₀					<i>BIC</i> ₉₀				
	L1	C1	Tetra- cycline	Ceftri- axone	Van- comy- cin	L1	C1	Tetra- cycline	Ceftri- axone	Van- comy- cin
<i>P. mirabilis</i> ATCC 12453	570	>1000	420	>1000	156	250	231	>1000	785	>1000
<i>P. aeruginosa</i> ATCC 27853	>1000	>1000	>1000	>1000	156	305	116	>1000	734	>1000
<i>S. aureus</i> ATCC 25923	630	>1000	249	530	250	300	475	>1000	63	>1000

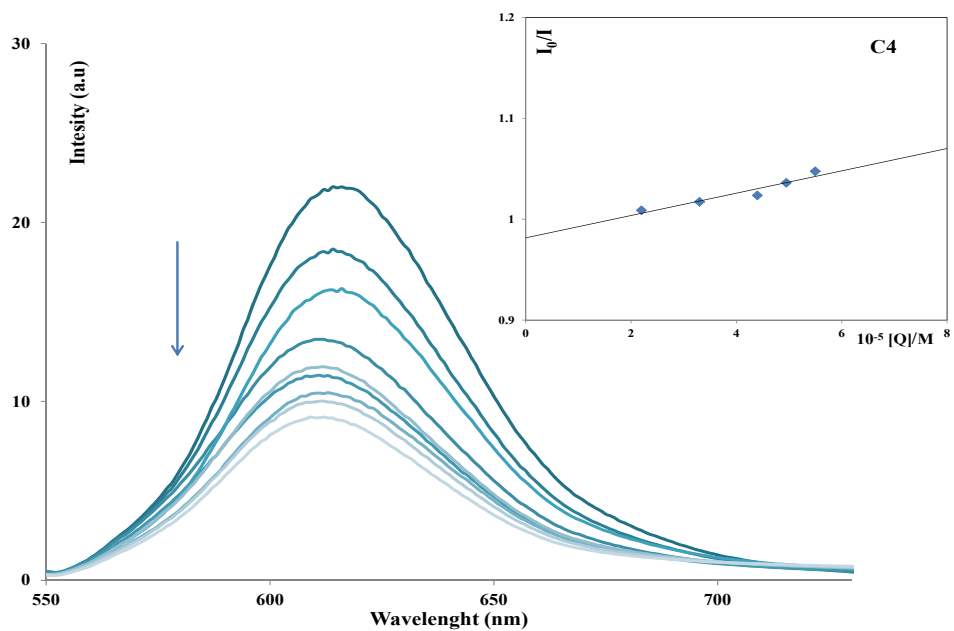


Fig. S-1. Fluorescence titration spectra of EthBr–DNA and of EthBr (10 μ M) bound to DNA (10 μ M) in the presence of varying amounts of complex C4. (Arrow shows changes in the fluorescence intensity upon increasing the concentration of C4 (0–20 μ M)).
Inset: Stern–Volmer plot for EthBr–DNA fluorescence titration with C4.