

## Electronic Supporting Information (ESI)

# Cytotoxicity and Biodistribution Studies of Luminescent Au(I) and Ag(I) N-Heterocyclic Carbenes. Searching for New New Biological Targets

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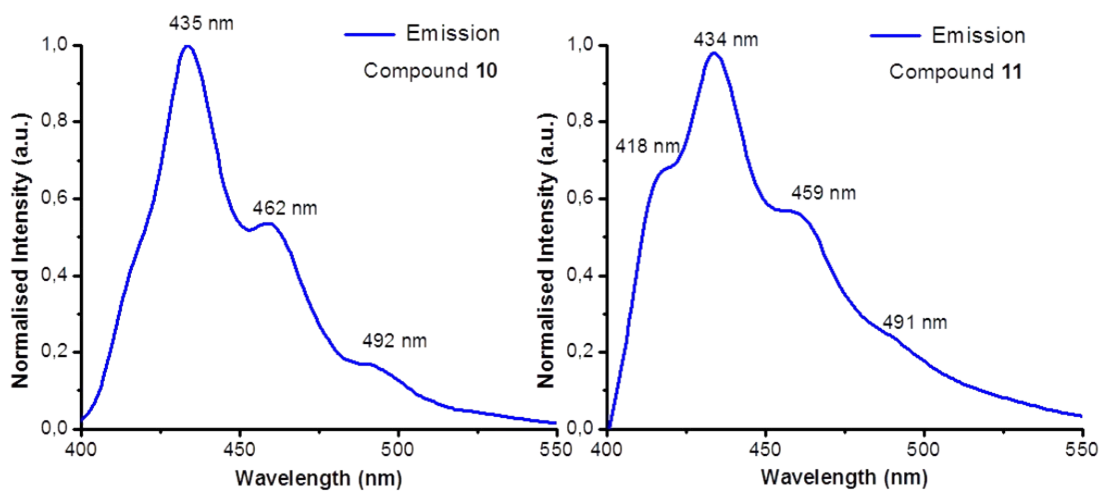
<b><u>Table of contents</u></b>	<b><u>Page</u></b>
<b>Table S1.</b> X-ray Crystallographic data for complex <b>10</b>	3
<b>Table S2.</b> Selected bond lengths (Å) and angles (deg) for complex <b>10</b>	4
<b>Figure S1.</b> Normalised emission spectra of complexes <b>10</b> and <b>11</b>	5
<b>Figure S2.</b> Cytotoxicity assay of complexes <b>1 – 12</b>	5
<b>Figure S3.</b> Images of A549 cells incubated with complexes <b>1, 5, 10, 11</b> and <b>12</b> and MitoTracker for 24 h (C = 1/2 of IC <sub>50</sub> )	6
<b>Figure S4.</b> Images of A549 cells incubated with complexes <b>1, 5, 8</b> and <b>12</b> and LisoTracker for 24 h (C = 1/2 of IC <sub>50</sub> )	6
<b>Figure S5.</b> Bright field of A549 cells incubated with complexes <b>1, 5, 6, 8, 10, 11</b> and <b>12</b> and a control	7

**Table S1.** X-ray Crystallographic data for complex **10**.

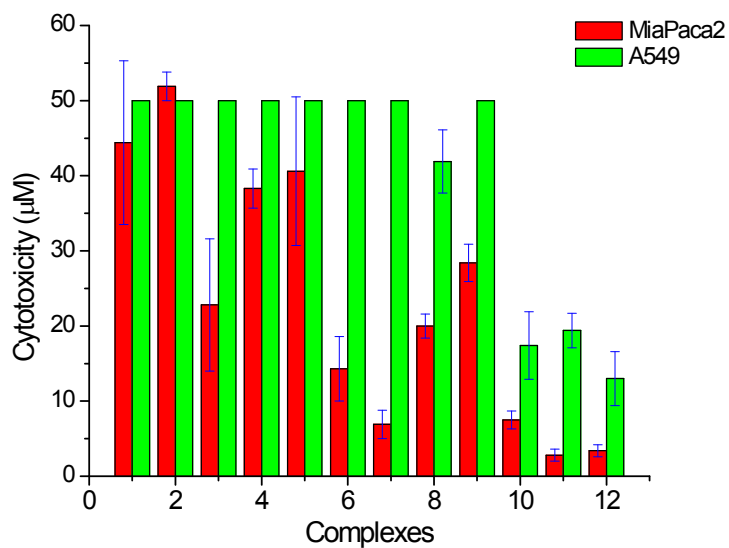
Complex	<b>10</b>		
Formula	C <sub>27</sub> H <sub>20</sub> AuN <sub>5</sub> S	$\mu$ (mm <sup>-1</sup> )	6.458
$M_r$	643.51	$F(000)$	1248
Habit	pale yellow tablet	$T$ (°C)	-173(2)
Crystal size (mm)	0.42x0.23x0.20	$2\theta_{\max}$	51
Crystal system	Monoclinic	No. of refl.:	
Space group	P21/n	measured	53563
Cell constants:		independent	4293
$a$ (Å)	11.8017(3)	Transmissions	0.9265-0.3063
$b$ (Å)	12.0237(2)	$R_{\text{int}}$	0.0397
$c$ (Å)	17.0165(4)	Parameters	307
$\alpha$ (°)	90	Restraints	0
$\beta$ (°)	106.109(2)	Goodness of fit on $F^2$	1.049
$\gamma$ (°)	90	$wR(F^2, \text{all Refl.})$	0.0562
$V$ (Å <sup>3</sup> )	2319.83(9)	$R(I > 2\sigma(I))$	0.0223
$Z$	4	max. $\Delta\rho$ (e Å <sup>-3</sup> )	1.089
$D_x$ (Mg m <sup>-3</sup> )	1.842		

**Table S2.** Selected bond lengths (Å) and angles (deg) for complex **10**.

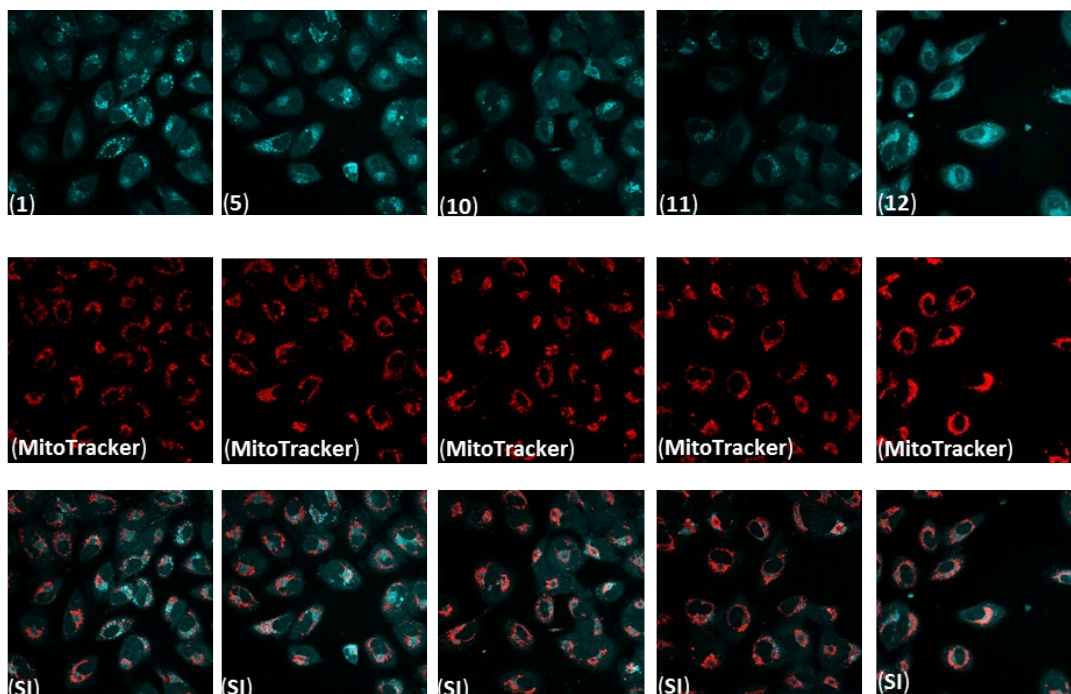
Au(1)-C(1)	2.003(3)	C(1)-Au(1)-S(1)	178.44(10)
Au(1)-S(1)	2.2840(10)	C(23)-S(1)-Au(1)	107.64(12)
S(1)-C(23)	1.760(4)	C(1)-N(1)-C(2)	111.0(3)
N(1)-C(1)	1.340(4)	C(1)-N(1)-C(4)	124.0(3)
N(1)-C(2)	1.378(5)	C(2)-N(1)-C(4)	124.8(3)
N(1)-C(4)	1.462(5)	C(1)-N(2)-C(3)	111.2(3)
N(2)-C(1)	1.350(4)	C(1)-N(2)-C(10)	123.4(3)
N(2)-C(3)	1.388(4)	C(3)-N(2)-C(10)	124.9(3)
N(2)-C(10)	1.446(4)	C(5)-N(3)-C(9)	116.3(4)
N(3)-C(5)	1.340(5)	C(16)-N(4)-C(17)	117.8(3)
N(3)-C(9)	1.371(7)	C(23)-N(5)-C(27)	117.6(3)
N(4)-C(16)	1.344(4)	N(1)-C(1)-N(2)	104.7(3)
N(4)-C(17)	1.349(4)	N(1)-C(1)-Au(1)	129.9(3)
N(5)-C(23)	1.338(5)	N(2)-C(1)-Au(1)	125.3(2)
N(5)-C(27)	1.340(5)	C(3)-C(2)-N(1)	107.4(3)
C(2)-C(3)	1.340(6)	C(2)-C(3)-N(2)	105.7(3)
C(4)-C(5)	1.514(6)	N(1)-C(4)-C(5)	114.6(3)
C(5)-C(6)	1.379(5)	N(3)-C(5)-C(6)	123.9(4)
C(6)-C(7)	1.357(6)	N(3)-C(5)-C(4)	113.6(4)
C(7)-C(8)	1.379(6)	C(6)-C(5)-C(4)	122.5(3)
C(8)-C(9)	1.381(8)	C(7)-C(6)-C(5)	118.6(3)
C(10)-C(22)	1.390(4)	C(6)-C(7)-C(8)	120.1(4)



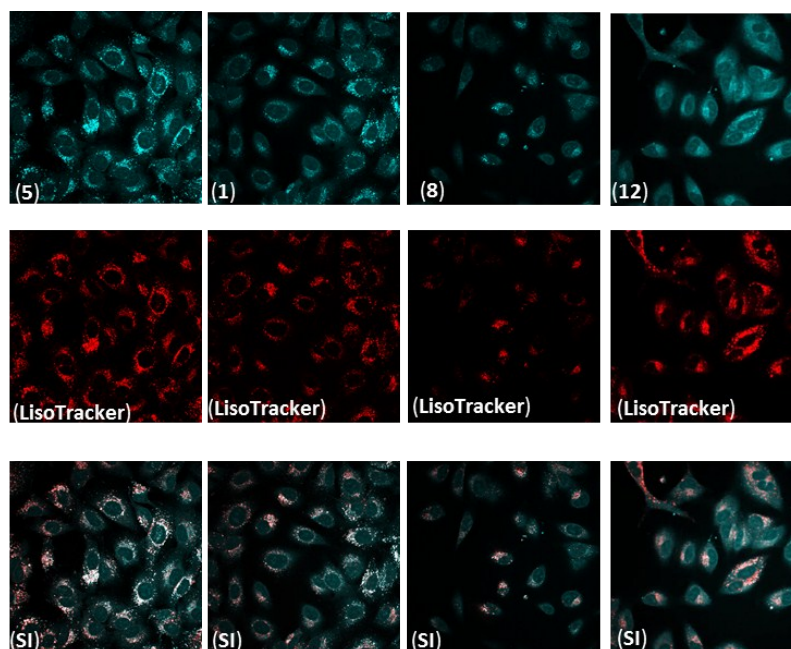
**Figure S1.** Normalized emission spectra of complexes **10** and **11**



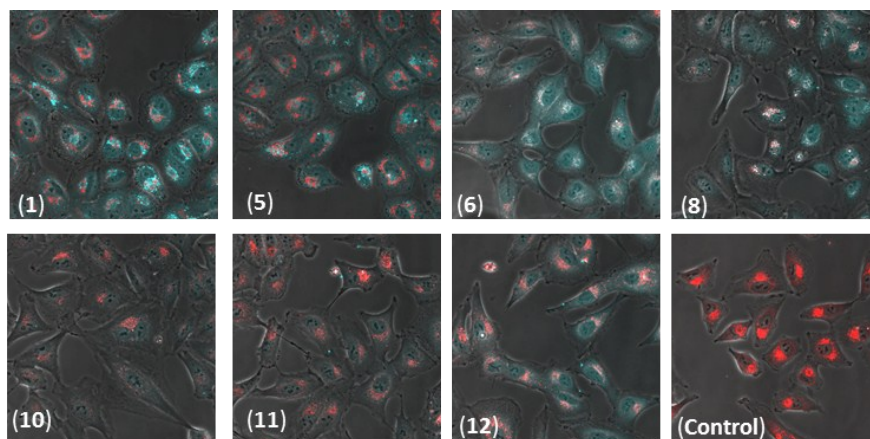
**Figure S2.** Cytotoxicity assay of complexes **1 - 12**



**Figure S3.** Images of A549 cells incubated with complexes **1**, **5**, **10**, **11** and **12** and MitoTracker for 24 h ( $C = 1/2$  of  $IC_{50}$ ). Excitation at 405: emission from complexes (blue emission) and at 577 nm: emission from the MitoTracker (red emission). SI: superimposition image of complexes and marker.



**Figure S4.** Images of A549 cells incubated with complexes **1**, **5**, **8** and **12** and LisoTracker for 24 h ( $C = 1/2$  of  $IC_{50}$ ). Excitation at 405: emission from complexes (blue emission) and at 577 nm: emission from the LisoTracker (red emission). SI: superimposition image of complexes and marker



**Figure S5.** Bright field of A549 cells incubated with complexes **1, 5, 6, 8, 10, 11** and **12** to ascertain the cell viability during the fluorescence microscopy experiment.