Inhibition of Cathepsin Activity in a Cell-Based Assay by a Light-Activated Ruthenium Compound

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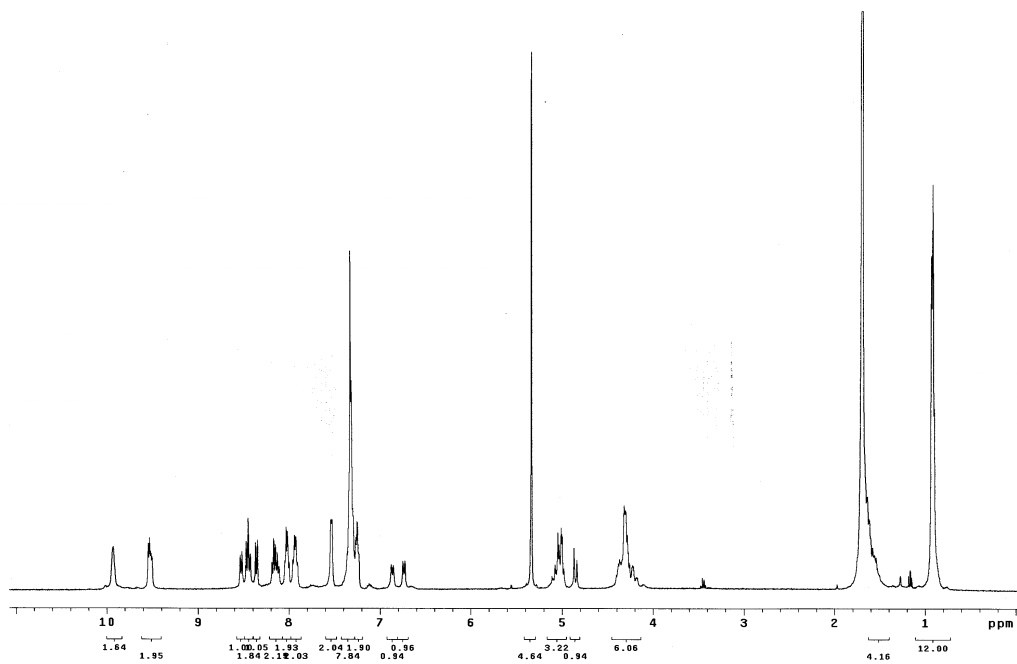[3] Department of Chemistry and Biochemistry, The Ohio State University, Columbus, Ohio 43210

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Supporting Information

(7 Pages)

For complex **4** X = Cl and L =

For complex **5** X = BF$_4$ and L =
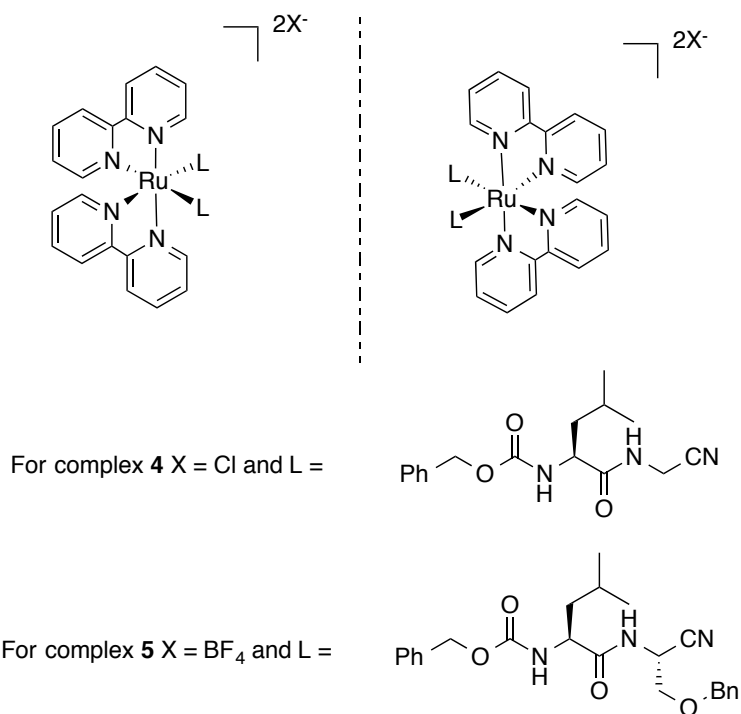
Figure S1. Δ-cis [Ru(bpy)$_2$(L)$_2$]X$_2$ and Λ-cis [Ru(bpy)$_2$(L)$_2$]X$_2$

Figure S2. ^{1}H NMR spectrum for (**4**)
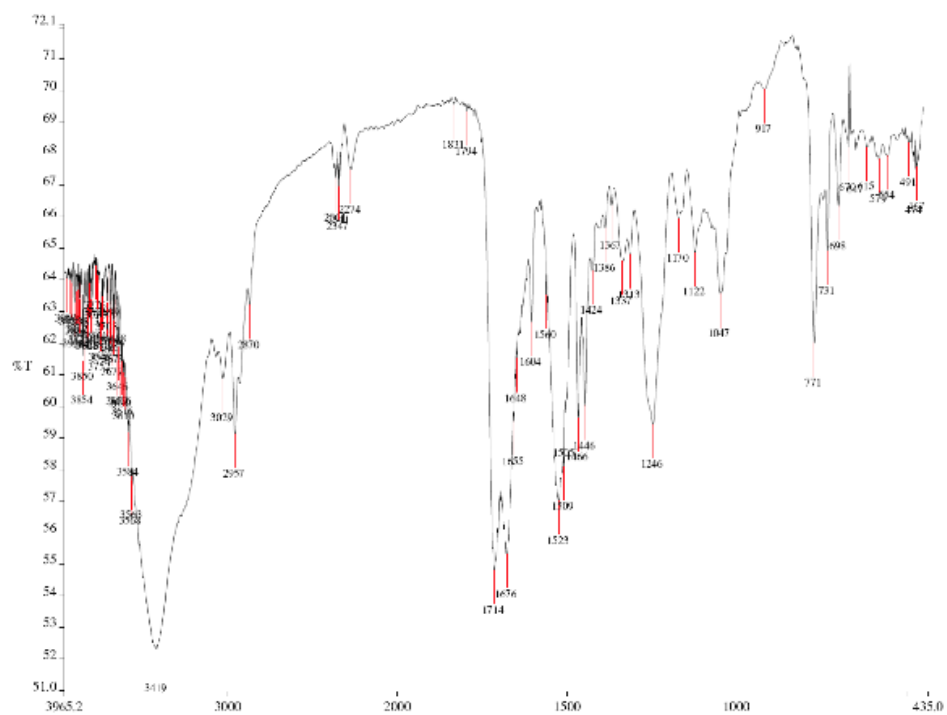
Figure S3. IR spectrum for (**4**)
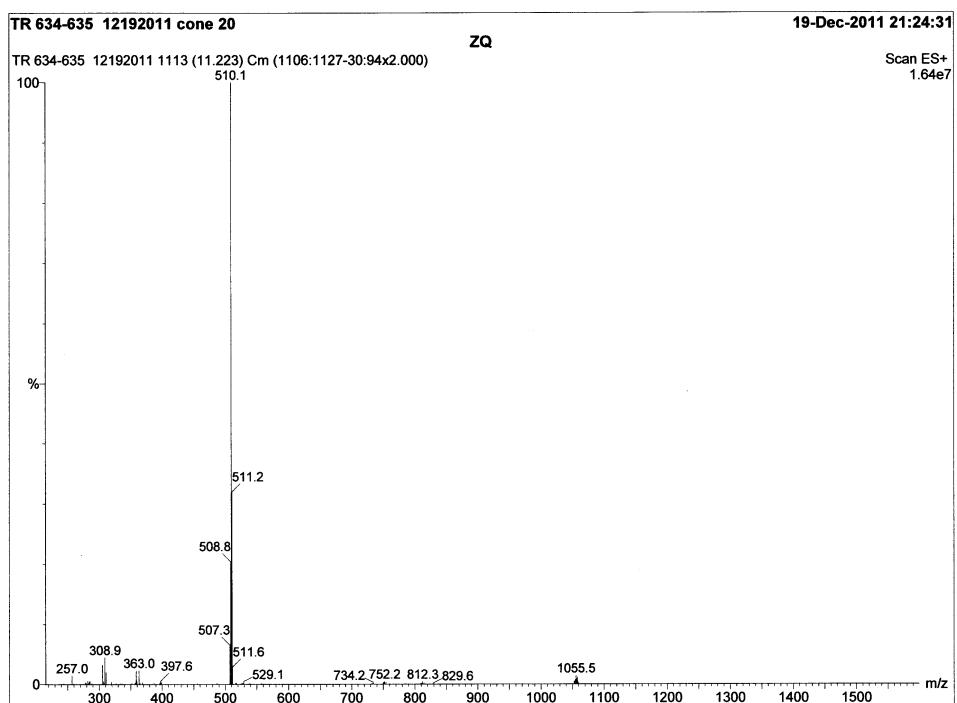
Figure S4. LRMS (ESMS) of (**4**)
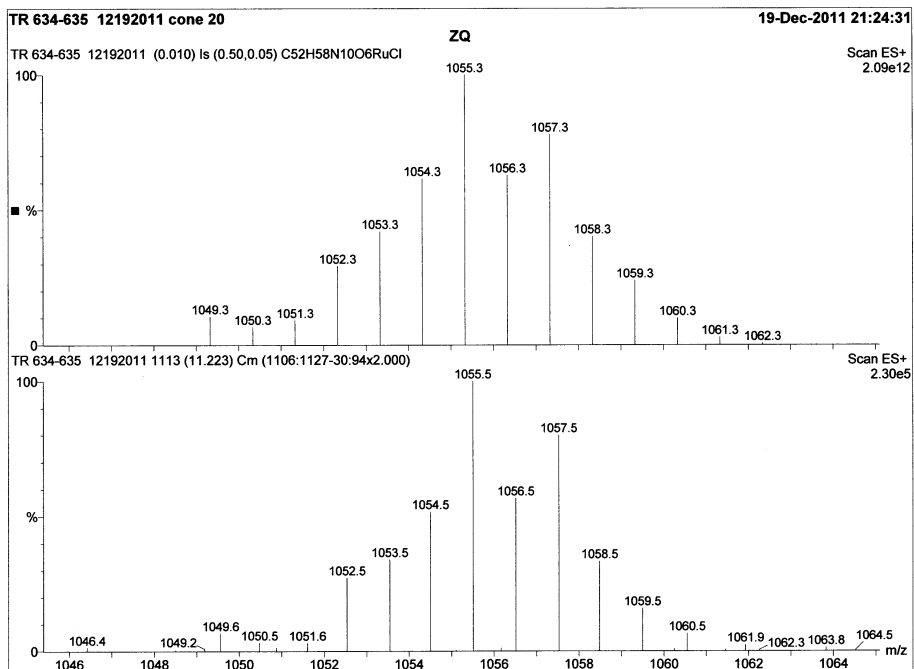
Figure S5. LRMS (ESMS) of (**4**): Isotope pattern
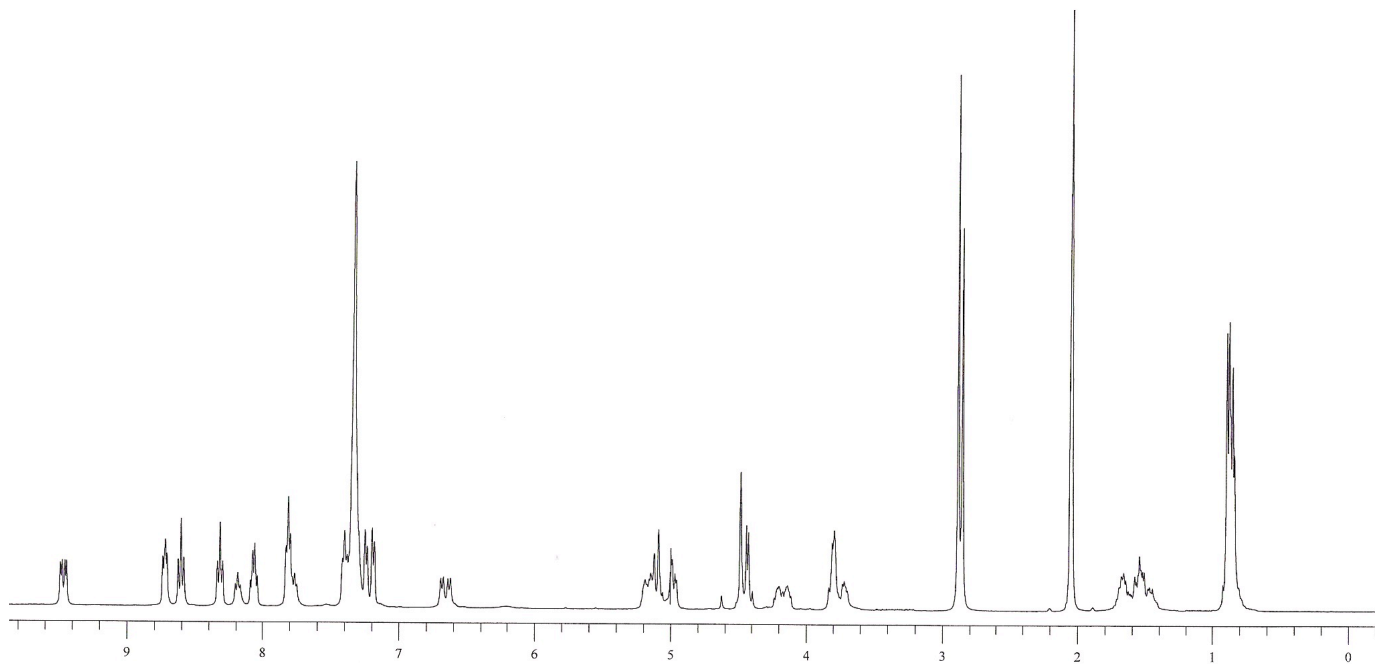
Figure S6. ^{1}H NMR spectrum for (**5**)
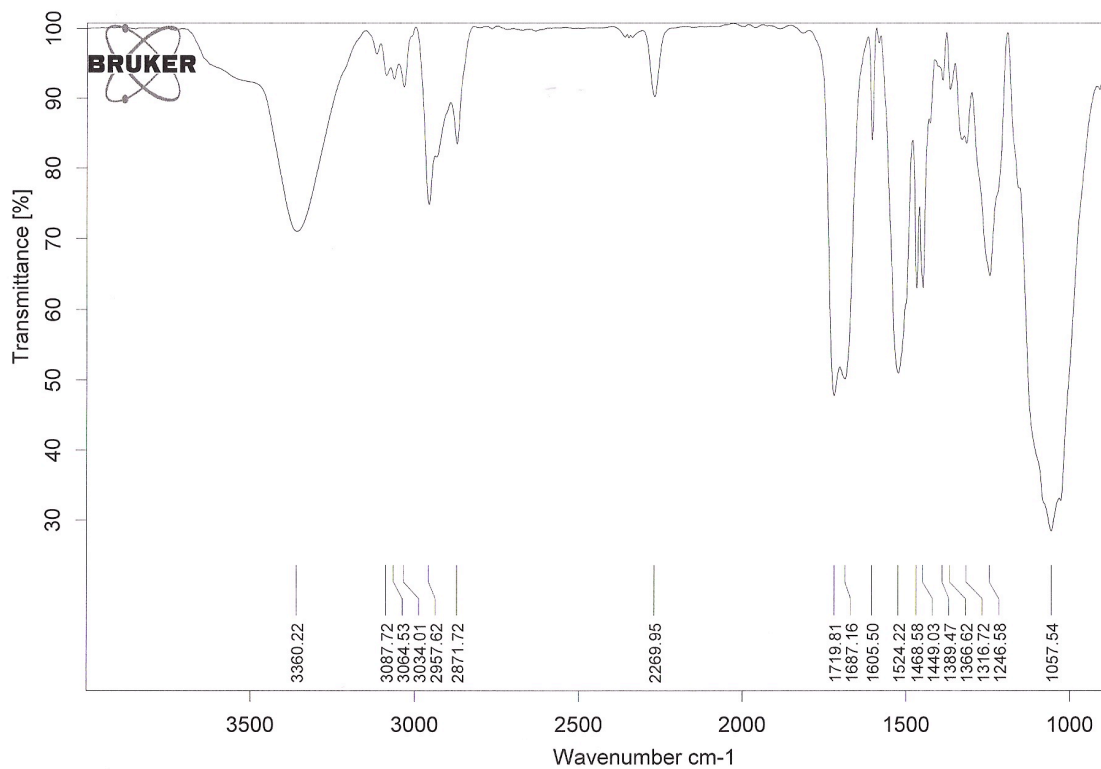
Figure S7. IR spectrum for (**5**)

IR peaks: 3360.22, 3087.72, 3064.53, 3034.01, 2957.62, 2871.72, 2269.95, 1719.81, 1687.16, 1605.50, 1524.22, 1468.58, 1449.03, 1389.47, 1366.62, 1316.72, 1246.58, 1057.54

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ZQ
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13:58:38

140116_8333 (0.018) Is (1.00,1.00) RuC68H74N10O8BF4
Scan ES+
2.08e12

1347.5
1346.5
1348.5
1345.5
1349.5
1344.5
1350.5
1343.5
1351.5

140116_8333 263 (4.861) Cm (255:281-34:238x2.000)
Scan ES+
1.25e5

1347.9
1346.9
1348.9
1345.9
1349.9
1344.9
1350.9
1344.0
1351.8
1323.6 1334.0 1336.0 1352.9 1368.1 1387.8 1392.8 1402.5 1404.9 1412.0 m/z

Figure S8. LRMS (ESMS) of (**5**): Isotope pattern

(A)

(B)

(C)
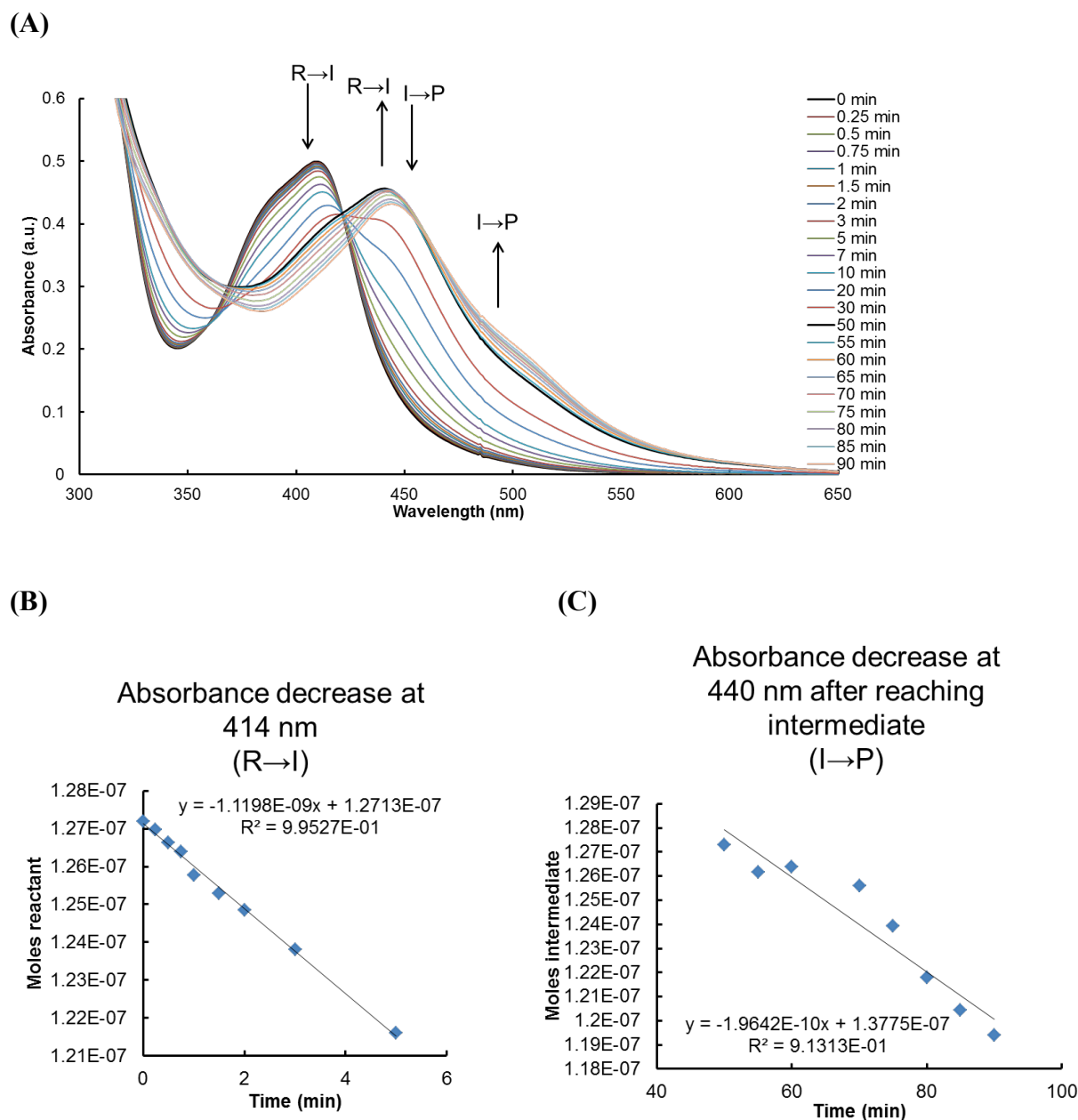
Figure S9. (A) Electronic absorption spectra of **5** in H_2O (2 % acetone) irradiated with a 150 W Xe arc lamp using a 345 nm long-pass filter and a 400 nm bandpass filter (5.34×10^{-8} mol photons/min). R = reactant (*cis*-$[Ru(bpy)_2(3)]^{2+}$), I = intermediate ($[Ru(bpy)_2(3)(OH_2)]^{2+}$), P = product (*cis*-$[Ru(bpy)_2(OH_2)_2]^{2+}$). The absorbance at early times was used to determine the moles of reactant (B) or intermediate (C) consumed, and the slopes of the lines represent the rate of consumption (mol/min). (B) and (C) represent one of three trials.
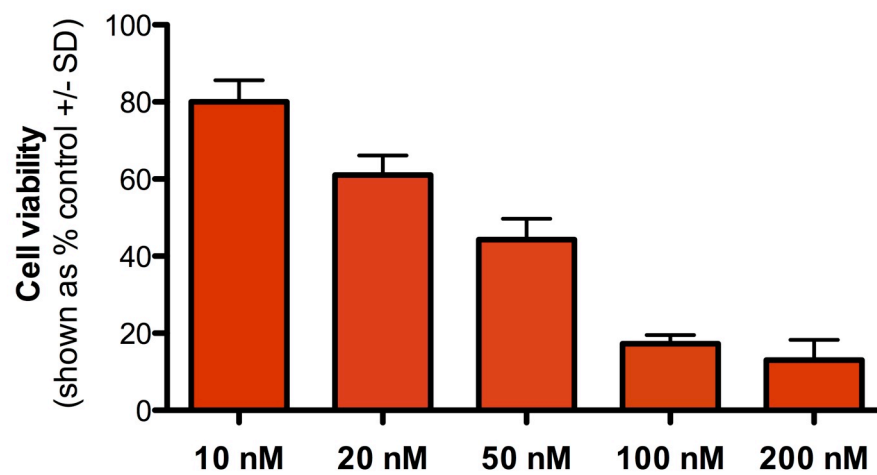
Figure S10. Positive control for cell viability experiments in Figure 4 of the manuscript. PC3 cells were exposed to increasing concentrations (10 nM – 200 nM) of the known cytotoxic agent Docetaxel. See Figure 4 for additional experimental details.