

Cisplatin enhances cell stiffness and decreases invasiveness rate in prostate cancer cells by actin accumulation

Martina Raudenska^{1×}, Monika Kratochvilova^{1×}, Tomas Vicar^{2,3}, Jaromir Gumulec^{1,2,4}, Jan Balvan^{1,2,4}, Hana Polanska², Jan Pribyl⁵, and Michal Masarik^{1,2,4*}

¹Department of Physiology, Faculty of Medicine, Masaryk University / Kamenice 5, CZ-625 00 Brno, Czech Republic

²Department of Pathological Physiology, Faculty of Medicine, Masaryk University / Kamenice 5, CZ-625 00 Brno, Czech Republic

³Department of Biomedical Engineering, Faculty of Electrical Engineering and Communication, Brno University of Technology, Technicka 3058/10, CZ-616 00 Brno, Czech Republic

⁴Central European Institute of Technology, Brno University of Technology, Technicka 3058/10, CZ-616 00 Brno, Czech Republic

⁵Central European Institute of Technology, Masaryk University/ Kamenice 5, CZ-625 00 Brno, Czech Republic

*Dr. Michal Masarik, Department of Physiology and Pathological Physiology, Faculty of Medicine, Masaryk University, Kamenice 5, CZ-625 00 Brno, Czech Republic; E-mail: masarik@med.muni.cz Phone: +420-5-4949-3631; fax: +420-5-4949-4340

[×]Martina Raudenska and Monika Kratochvilova contributed equally to this work.

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Table S1: Summary of statistics used throughout the study. Values shown as median and interquartile range (IQR). Lilliefors test used for normality analysis. * indicates Kruskal-Wallis test used instead of ANOVA for this comparison. † for colony forming analysis, N reflects number of chamber wells instead of the number of analyzed cells as in the other analyses.

Untreated cells								
Modality	Cell line	median (IQR)	N	normality	ANOVA/KW p value			
				p	vs. 22Rv1	vs. LNCaP	vs. PC-3	
Young Modulus (kPa)								
	PNT1A	1.15 (0.64-1.53)	64	0.221	0.001	0.763	0.343	
	22Rv1	0.67 (0.39-0.81)	20	0.500		0.009	<0.001	
	LNCaP	0.95 (0.68-1.36)	68	0.003			0.053	
	PC-3	1.21 (0.78-1.74)	42	0.374				
Cell Mass (pg/μm ²)*								
	PNT1A	409.34 (358.62-517.73)	77	0.001	<0.001	0.019	0.889	
	22Rv1	196.06 (171.27-223.95)	99	0.001		<0.001	<0.001	
	LNCaP	344.46 (281.12-489.13)	104	0.001			0.786	
	PC-3	375.34 (362.25-419.63)	17	0.337				
Setpoint height (μm)*								
	PNT1A	11.03 (8.73-13.26)	64	0.001	0.698	0.001	<0.001	
	22Rv1	9.89 (7.48-11.61)	20	0.026		0.437	0.039	
	LNCaP	8.2 (6.88-11.05)	68	0.104			0.304	
	PC-3	7.52 (5.8-9.54)	42	0.237				
Treated cells cells								
Modality	treatment	Cell line	median (IQR)	N	normality	ANOVA/KW p value		
					p	vs. zinc	vs. cisplatin	vs. docetaxel
Circularity (0-1)								
	untreated	PNT1A	0.58 (0.54-0.63)	77	0.285	0.002	0.701	<0.001
	zinc	PNT1A	0.49 (0.44-0.55)	37	0.205		<0.001	<0.001
	cisplatin	PNT1A	0.57 (0.50-0.70)	33	0.372			0.025
	docetaxel	PNT1A	0.68 (0.58-0.77)	39	0.500			
	untreated	22Rv1	0.54 (0.45-0.66)	99	0.055	<0.001	<0.001	<0.001
	zinc	22Rv1	0.42 (0.33-0.52)	67	0.327		<0.001	<0.001
	cisplatin	22Rv1	0.80 (0.65-0.90)	187	0.001			0.752
	docetaxel	22Rv1	0.72 (0.64-0.81)	107	0.500			
	untreated	PC-3	0.60 (0.50-0.76)	17	0.500	0.608	0.305	1.000
	zinc	PC-3	0.58 (0.53-0.63)	61	0.500		<0.001	0.599
	cisplatin	PC-3	0.70 (0.57-0.83)	118	0.249			0.243
	docetaxel	PC-3	0.60 (0.54-0.72)	19	0.412			
Migration speed (μm/min)*								
	untreated	PNT1A	2.26 (1.84-2.90)	77	0.001	0.011	0.768	0.779
	zinc	PNT1A	3.19 (2.53-5.33)	37	0.001		0.003	0.003
	cisplatin	PNT1A	1.57 (0.55-5.07)	33	0.001			1.000
	docetaxel	PNT1A	2.1 (1.08-3.35)	39	0.005			
	untreated	22Rv1	3.11 (2.59-3.84)	99	0.001	0.961	<0.001	0.006
	zinc	22Rv1	3.16 (2.46-4.21)	67	0.001		<0.001	0.003
	cisplatin	22Rv1	0.73 (0.40-2.67)	187	0.001			<0.001
	docetaxel	22Rv1	2.00 (1.13-3.74)	107	0.001			

untreated	PC-3	5.06 (4.56-5.91)	17	0.011	0.005	<0.001	0.377
zinc	PC-3	2.79 (2.19-3.52)	61	0.001		<0.001	0.467
cisplatin	PC-3	1.66 (1.16-2.47)	118	0.001			<0.001
docetaxel	PC-3	5.78 (1.65-6.98)	19	0.379			
Colony-forming assay (% covered area)*†							
untreated	PNT1A	10.29 (5.50-15.90)	6	N/A	0.410	<0.001	0.001
zinc	PNT1A	0.85 (0.60-1.67)	6	N/A		0.069	0.126
cisplatin	PNT1A	0	6	N/A			0.994
docetaxel	PNT1A	0	6	N/A			
untreated	22Rv1	6.73 (5.78-6.87)	3	N/A	0.734	0.018	0.007
zinc	22Rv1	1.36 (0.96-2.26)	6	N/A		0.091	0.035
cisplatin	22Rv1	0.04 (0.01-0.09)	6	N/A			0.982
docetaxel	22Rv1	0.02 (0.00-0.08)	6	N/A			
untreated	PC-3	17.44 (14.19-17.71)	6	N/A	0.336	0.108	0.472
zinc	PC-3	27.68 (24.04-32.91)	6	N/A		<0.001	0.025
cisplatin	PC-3	0.04 (0.00-0.10)	6	N/A			0.978
docetaxel	PC-3	0.10 (0.03-0.19)	3	N/A			
Cell Mass (pg/μm ²)*							
Untreated	PNT1A	409.34 (358.62-517.73)	77	0.001	0.663	0.002	0.001
Zinc	PNT1A	386.18 (270.74-542.99)	37	0.382		0.125	0.111
Cisplatin	PNT1A	251.47 (180.42-445.67)	33	0.015			1.000
Docetaxel	PNT1A	292.58 (195.00-449.81)	39	0.37			
Untreated	22Rv1	196.06 (171.27-223.95)	99	0.001	<0.001	<0.001	0.435
Zinc	22Rv1	271.41 (211.34-548.02)	67	0.001		<0.001	<0.001
Cisplatin	22Rv1	100.35 (73.54-170.18)	187	0.001			<0.001
Docetaxel	22Rv1	179.13 (111.92-272.18)	107	0.001			
Untreated	PC-3	375.34 (362.25-419.63)	17	0.337	<0.001	<0.001	<0.001
Zinc	PC-3	492.55 (396.37-553.06)	61	0.001		0.997	0.656
Cisplatin	PC-3	416.27 (335.15-540.55)	118	0.004			0.853
Docetaxel	PC-3	569.54 (485.98-757.39)	19	0.182			
Untreated	together	304.14 (192.15-408.32)	193	0.001	<0.001	<0.001	0.014
Zinc	together	423.19 (266.39-553.06)	165	0.001		<0.001	<0.001
Cisplatin	together	226.93 (91.44-407.98)	338	0.001			0.951
Docetaxel	together	226.60 (130.55-354.48)	165	0.001			
Young Modulus (kPa)*							
Untreated	PNT1A	1.15 (0.64-1.53)	64	0.221	0.536	<0.001	<0.001
Zinc	PNT1A	0.85 (0.61-1.23)	23	0.150		<0.001	<0.001
Cisplatin	PNT1A	1.68 (1.24-2.09)	84	0.500			0.011
Docetaxel	PNT1A	2.72 (1.60-3.78)	61	0.001			
Untreated	22Rv1	0.67 (0.39-0.81)	20	0.500	0.275	<0.001	<0.001
Zinc	22Rv1	0.97 (0.71-1.21)	23	0.257		0.014	<0.001
Cisplatin	22Rv1	1.97 (1.01-3.00)	41	0.015			0.157
Docetaxel	22Rv1	2.42 (1.69-5.67)	26	0.001			
Untreated	PC-3	1.21 (0.78-1.74)	42	0.374	0.433	0.007	<0.001
Zinc	PC-3	1.65 (1.35-2.06)	23	0.500		0.483	0.009
Cisplatin	PC-3	1.98 (1.72-2.75)	27	0.500			0.432
Docetaxel	PC-3	2.88 (1.42-4.63)	83	0.009			
Untreated	together	1.11 (0.62-1.46)	126	0.030	0.961	<0.001	<0.001
Zinc	together	1.12 (0.71-1.52)	69	0.127		<0.001	<0.001

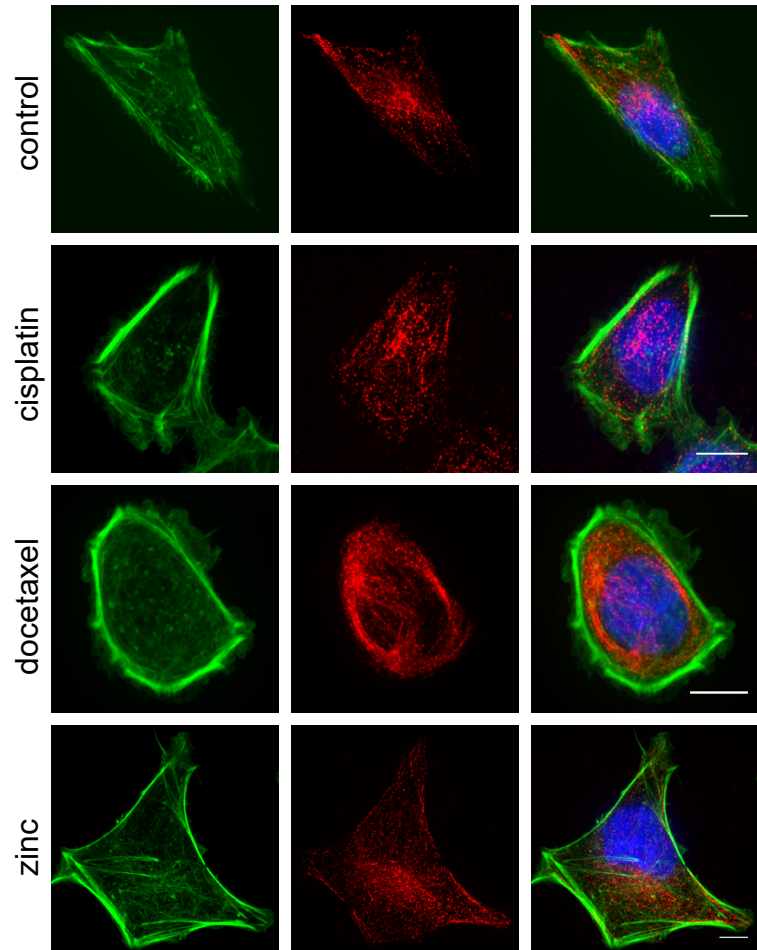
	Cisplatin	together	1.80 (1.21-2.43)	152	0.123			<0.001
	Docetaxel	together	2.70 (1.55-4.65)	170	0.001			
Setpoint height (μm)*								
	Untreated	PNT1A	11.03 (8.73-13.26)	64	0.001	<0.001	0.048	0.040
	Zinc	PNT1A	6.67 (3.71-9.37)	23	0.033		0.001	0.003
	Cisplatin	PNT1A	9.57 (7.95-11.28)	84	0.022			0.993
	Docetaxel	PNT1A	9.32 (8.33-10.89)	61	0.486			
	Untreated	22Rv1	9.89 (7.48-11.61)	20	0.026	0.709	0.799	0.087
	Zinc	22Rv1	8.95 (6.98-10.24)	23	0.134		0.991	0.563
	Cisplatin	22Rv1	9.54 (5.96-12.01)	41	0.053			0.275
	Docetaxel	22Rv1	8.54 (5.47-9.92)	26	0.083			
	Untreated	PC-3	7.52 (5.80-9.54)	42	0.237	0.784	0.895	0.503
	Zinc	PC-3	6.38 (5.24-9.20)	23	0.019		0.995	0.136
	Cisplatin	PC-3	8.29 (5.57-8.91)	27	0.002			0.196
	Docetaxel	PC-3	8.43 (6.44-10.13)	83	0.377			
	Untreated	all	9.56 (7.33-12.39)	126	0.018	<0.001	0.680	0.092
	Zinc	all	7.32 (5.49-9.65)	69	0.062		0.002	0.038
	Cisplatin	all	8.96 (7.58-11.16)	152	0.132			0.597
	Docetaxel	all	8.85 (6.79-10.42)	170	0.018			

KW, Kruskal-Wallis test, Lilliefors test used for normality analysis. * indicate Kruskal-Wallis test used instead of ANOVA for this comparison. † for colony-forming analysis, N reflect number of chamber wells instead of number of analyzed cells as in other analyses.

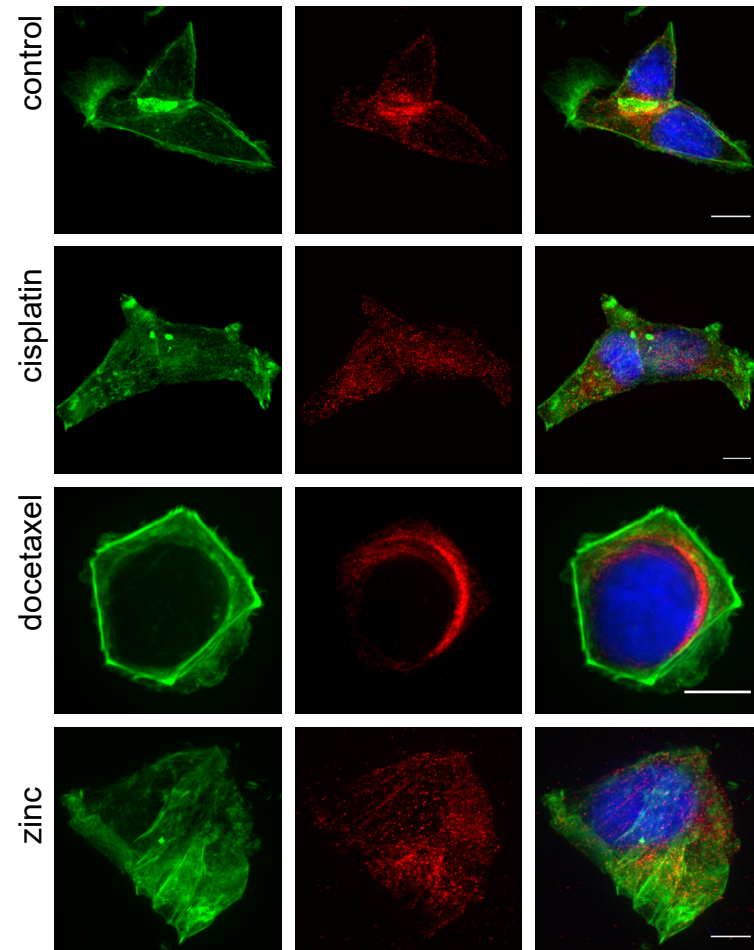
Figure S1: Confocal microscopy of cell lines exposed to cisplatin, docetaxel and zinc. Max intensity projections of representative cells. Scalebar represents 20 μm .

Actin/Tubulin/Hoechst 33342

PNT1A



22Rv1



PC-3

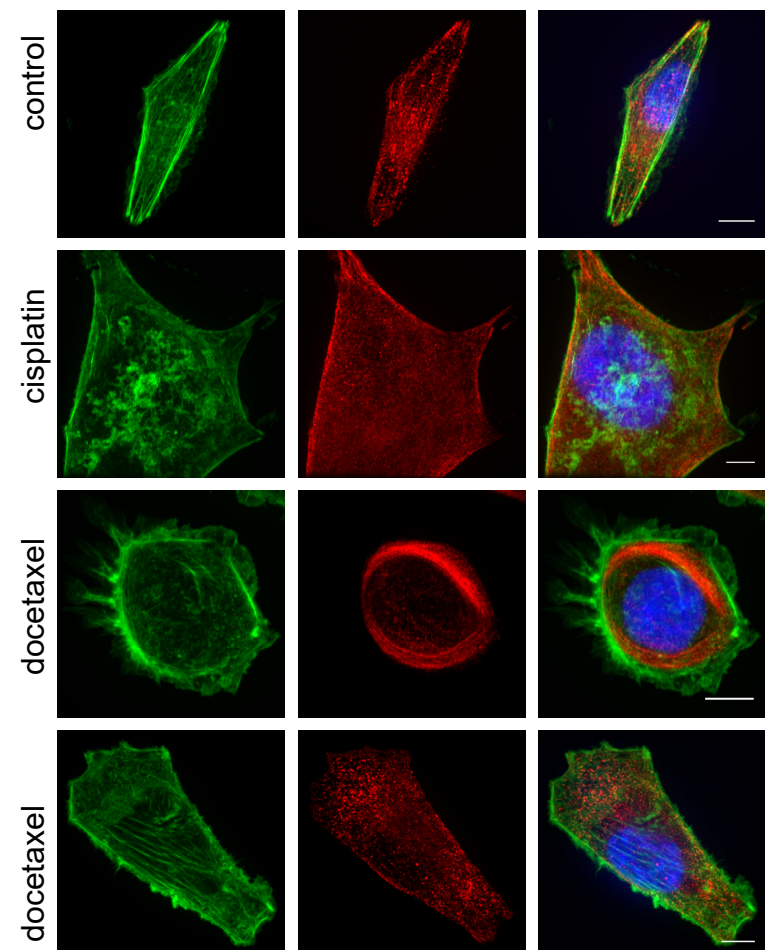


Figure S1: Confocal microscopy of cell lines exposed to cisplatin, docetaxel and zinc. Max intensity projections of representative cells. Scalebar represents 20 μm .

Table S2: Changes of actin and tubulin, analysis of confocal microscopy. Results of linear model of actin and tubulin staining for following cellular regions: whole cell, cell periphery (defined by a range 4 μm from the cell border), and fibers. SD of angle, standard deviation of actin fiber angles standardized to the mean angle. For description of measured factors, see Methods section of article. “Estimate” shown as relative change compared to intercept – control, untreated cells.

Cell line	structure	substructure	factor	level	Estimate	Std. Error	Pr(> t)
all	actin	cell	Integrated density	control	894145.0	121694.0	0.000
all	actin	cell	Integrated density	cisplatin	417669.0	156832.0	0.008
all	actin	cell	Integrated density	docetaxel	109809.0	149208.0	0.462
all	actin	cell	Integrated density	Zn	169941.0	156832.0	0.279
all	actin	cell	Median intensity	control	289.1	14.5	< 2e-16
all	actin	cell	Median intensity	cisplatin	4.0	18.7	0.829
all	actin	cell	Median intensity	docetaxel	50.4	17.8	0.005
all	actin	cell	Median intensity	Zn	-1.6	18.7	0.932
all	actin	fibers	Number of fibers	control	2.0	0.3	0.000
all	actin	fibers	Number of fibers	cisplatin	2.0	0.4	0.000
all	actin	fibers	Number of fibers	docetaxel	-0.4	0.4	0.240
all	actin	fibers	Number of fibers	Zn	0.4	0.4	0.358
all	actin	fibers	SD of angle	control	21.3	2.7	0.000
all	actin	fibers	SD of angle	cisplatin	2.9	3.1	0.365
all	actin	fibers	SD of angle	docetaxel	0.3	3.2	0.917
all	actin	fibers	SD of angle	Zn	-0.9	3.2	0.776
all	actin	fibers	Fiber lenght (μm)	control	4.7	0.5	< 2e-16
all	actin	fibers	Fiber lenght (μm)	cisplatin	1.9	0.6	0.002
all	actin	fibers	Fiber lenght (μm)	docetaxel	3.3	0.6	0.000
all	actin	fibers	Fiber lenght (μm)	Zn	3.5	0.6	0.000
all	actin	fibers	Integrated density	control	732.1	130.5	0.000
all	actin	fibers	Integrated density	cisplatin	358.5	159.8	0.026
all	actin	fibers	Integrated density	docetaxel	919.9	159.5	0.000
all	actin	fibers	Integrated density	Zn	635.2	161.5	0.000
all	actin	fibers	Mean intensity	control	400.4	29.5	< 2e-16
all	actin	fibers	Mean intensity	cisplatin	25.4	36.1	0.482
all	actin	fibers	Mean intensity	docetaxel	121.1	36.0	0.001
all	actin	fibers	Mean intensity	Zn	21.0	36.5	0.565
all	actin	periphery	Integrated density	control	596532.0	51021.0	< 2e-16
all	actin	periphery	Integrated density	cisplatin	228582.0	65753.0	0.001
all	actin	periphery	Integrated density	docetaxel	100667.0	62557.0	0.108
all	actin	periphery	Integrated density	Zn	92588.0	65753.0	0.160
all	actin	periphery	Median intensity	control	305.2	16.6	< 2e-16
all	actin	periphery	Median intensity	cisplatin	11.4	21.3	0.593
all	actin	periphery	Median intensity	docetaxel	69.2	20.3	0.001
all	actin	periphery	Median intensity	Zn	5.5	21.3	0.796
all	actin	periphery	Periphery/cell integrated density ratio	control	0.8	0.0	< 2e-16
all	actin	periphery	Periphery/cell integrated density ratio	cisplatin	-0.1	0.0	0.002
all	actin	periphery	Periphery/cell integrated density ratio	docetaxel	0.0	0.0	0.192
all	actin	periphery	Periphery/cell integrated density ratio	Zn	0.0	0.0	0.100
all	morphology	cell	Aspect ratio	control	2.1	0.1	<2e-16
all	morphology	cell	Aspect ratio	cisplatin	0.2	0.1	0.275

all	morphology	cell	Aspect ratio	docetaxel	-0.2	0.1	0.170
all	morphology	cell	Aspect ratio	Zn	0.1	0.1	0.695
all	morphology	cell	Cell area (μm^2)	control	462.4	54.4	0.000
all	morphology	cell	Cell area (μm^2)	cisplatin	189.8	70.1	0.007
all	morphology	cell	Cell area (μm^2)	docetaxel	-35.1	66.7	0.599
all	morphology	cell	Cell area (μm^2)	Zn	48.6	70.1	0.489
all	morphology	cell	Maximum caliper (μm)	control	13.7	0.7	< 2e-16
all	morphology	cell	Maximum caliper (μm)	cisplatin	3.4	0.9	0.000
all	morphology	cell	Maximum caliper (μm)	docetaxel	-0.7	0.8	0.392
all	morphology	cell	Maximum caliper (μm)	Zn	1.2	0.9	0.165
all	morphology	cell	Roundness	control	0.6	0.0	<2e-16
all	morphology	cell	Roundness	cisplatin	0.0	0.0	0.183
all	morphology	cell	Roundness	docetaxel	0.0	0.0	0.107
all	morphology	cell	Roundness	Zn	0.0	0.0	0.917
all	tubulin	cell	Integrated density	control	623027.0	80495.0	0.000
all	tubulin	cell	Integrated density	cisplatin	29510.0	103738.0	0.776
all	tubulin	cell	Integrated density	docetaxel	110807.0	98695.0	0.262
all	tubulin	cell	Integrated density	Zn	25846.0	103738.0	0.803
all	tubulin	cell	Median intensity	control	178.8	10.7	< 2e-16
all	tubulin	cell	Median intensity	cisplatin	-32.8	13.8	0.018
all	tubulin	cell	Median intensity	docetaxel	69.8	13.1	0.000
all	tubulin	cell	Median intensity	Zn	3.3	13.8	0.812
all	tubulin	periphery	Integrated density	control	352467.0	26859.0	< 2e-16
all	tubulin	periphery	Integrated density	cisplatin	5896.0	34615.0	0.865
all	tubulin	periphery	Integrated density	docetaxel	100400.0	32932.0	0.002
all	tubulin	periphery	Integrated density	Zn	28983.0	34615.0	0.403
all	tubulin	periphery	Median intensity	control	174.8	11.5	< 2e-16
all	tubulin	periphery	Median intensity	cisplatin	-30.6	14.8	0.039
all	tubulin	periphery	Median intensity	docetaxel	75.0	14.1	0.000
all	tubulin	periphery	Median intensity	Zn	2.8	14.8	0.850
all	tubulin	periphery	Periphery/cell integrated density ratio	control	0.8	0.0	< 2e-16
all	tubulin	periphery	Periphery/cell integrated density ratio	cisplatin	-0.1	0.0	0.002
all	tubulin	periphery	Periphery/cell integrated density ratio	docetaxel	0.0	0.0	0.174
all	tubulin	periphery	Periphery/cell integrated density ratio	Zn	0.0	0.0	0.064
22Rv1	actin	cell	Integrated density	control	192318.0	131008.0	0.145
22Rv1	actin	cell	Integrated density	cisplatin	1307564.0	178279.0	0.000
22Rv1	actin	cell	Integrated density	docetaxel	355896.0	157336.0	0.025
22Rv1	actin	cell	Integrated density	Zn	310299.0	167715.0	0.067
22Rv1	actin	cell	Median intensity	control	149.8	20.9	0.000
22Rv1	actin	cell	Median intensity	cisplatin	168.0	28.4	0.000
22Rv1	actin	cell	Median intensity	docetaxel	76.1	25.1	0.003
22Rv1	actin	cell	Median intensity	Zn	73.0	26.7	0.007
22RV1	actin	fibers	Number of fibers	control	0.3	0.4	0.450
22RV1	actin	fibers	Number of fibers	cisplatin	2.3	0.5	0.000
22RV1	actin	fibers	Number of fibers	docetaxel	0.5	0.4	0.282
22RV1	actin	fibers	Number of fibers	Zn	1.1	0.5	0.019
22Rv1	actin	fibers	SD of angle	control	41.0	16.3	0.016
22Rv1	actin	fibers	SD of angle	cisplatin	-11.5	16.9	0.500

22Rv1	actin	fibers	SD of angle	docetaxel	-12.7	17.0	0.460
22Rv1	actin	fibers	SD of angle	Zn	-15.0	17.0	0.383
22Rv1	actin	fibers	Fiber length (μm)	control	4.8	1.2	0.000
22Rv1	actin	fibers	Fiber length (μm)	cisplatin	0.2	1.3	0.856
22Rv1	actin	fibers	Fiber length (μm)	docetaxel	3.6	1.3	0.008
22Rv1	actin	fibers	Fiber length (μm)	Zn	1.1	1.3	0.407
22Rv1	actin	fibers	Integrated density	control	326.7	307.6	0.293
22Rv1	actin	fibers	Integrated density	cisplatin	887.4	350.0	0.014
22Rv1	actin	fibers	Integrated density	docetaxel	739.2	350.0	0.040
22Rv1	actin	fibers	Integrated density	Zn	588.6	350.0	0.099
22Rv1	actin	fibers	Mean intensity	control	192.8	96.0	0.050
22Rv1	actin	fibers	Mean intensity	cisplatin	382.1	109.2	0.001
22Rv1	actin	fibers	Mean intensity	docetaxel	113.7	109.2	0.302
22Rv1	actin	fibers	Mean intensity	Zn	184.2	109.2	0.097
22Rv1	actin	periphery	Integrated density	control	182771.0	74559.0	0.016
22Rv1	actin	periphery	Integrated density	cisplatin	768006.0	101462.0	0.000
22Rv1	actin	periphery	Integrated density	docetaxel	211428.0	89542.0	0.020
22Rv1	actin	periphery	Integrated density	Zn	182966.0	95450.0	0.057
22Rv1	actin	periphery	Median intensity	control	152.6	21.0	0.000
22Rv1	actin	periphery	Median intensity	cisplatin	184.1	28.5	0.000
22Rv1	actin	periphery	Median intensity	docetaxel	81.6	25.2	0.002
22Rv1	actin	periphery	Median intensity	Zn	73.8	26.8	0.007
22Rv1	actin	periphery	Periphery/cell integrated density ratio	control	1.0	0.0	< 2e-16
22Rv1	actin	periphery	Periphery/cell integrated density ratio	cisplatin	-0.2	0.0	0.000
22Rv1	actin	periphery	Periphery/cell integrated density ratio	docetaxel	-0.2	0.0	0.000
22Rv1	actin	periphery	Periphery/cell integrated density ratio	Zn	-0.1	0.0	0.000
22Rv1	morphology	cell	Aspect ratio	control	2.2	0.2	<2e-16
22Rv1	morphology	cell	Aspect ratio	cisplatin	-0.1	0.3	0.639
22Rv1	morphology	cell	Aspect ratio	docetaxel	-0.3	0.2	0.172
22Rv1	morphology	cell	Aspect ratio	Zn	-0.3	0.2	0.150
22Rv1	morphology	cell	Cell area (μm^2)	control	178.9	69.5	0.011
22Rv1	morphology	cell	Cell area (μm^2)	cisplatin	519.9	94.6	0.000
22Rv1	morphology	cell	Cell area (μm^2)	docetaxel	196.9	83.4	0.020
22Rv1	morphology	cell	Cell area (μm^2)	Zn	164.8	88.9	0.066
22Rv1	morphology	cell	Maximum caliper (μm)	control	9.9	1.1	0.000
22Rv1	morphology	cell	Maximum caliper (μm)	cisplatin	7.9	1.5	0.000
22Rv1	morphology	cell	Maximum caliper (μm)	docetaxel	2.6	1.3	0.047
22Rv1	morphology	cell	Maximum caliper (μm)	Zn	1.6	1.4	0.239
22Rv1	morphology	cell	Roundness	control	0.5	0.0	<2e-16
22Rv1	morphology	cell	Roundness	cisplatin	0.0	0.1	0.538
22Rv1	morphology	cell	Roundness	docetaxel	0.1	0.1	0.042
22Rv1	morphology	cell	Roundness	Zn	0.1	0.1	0.118
22Rv1	tubulin	cell	Integrated density	control	126047.0	59525.0	0.036
22Rv1	tubulin	cell	Integrated density	cisplatin	419973.0	81003.0	0.000
22Rv1	tubulin	cell	Integrated density	docetaxel	321173.0	71487.0	0.000
22Rv1	tubulin	cell	Integrated density	Zn	244625.0	76203.0	0.002
22Rv1	tubulin	cell	Median intensity	control	111.3	13.3	0.000
22Rv1	tubulin	cell	Median intensity	cisplatin	8.6	18.1	0.635

22Rv1	tubulin	cell	Median intensity	docetaxel	71.3	16.0	0.000
22Rv1	tubulin	cell	Median intensity	Zn	50.0	17.0	0.004
22Rv1	tubulin	periphery	Integrated density	control	117907.0	25984.0	0.000
22Rv1	tubulin	periphery	Integrated density	cisplatin	190527.0	35359.0	0.000
22Rv1	tubulin	periphery	Integrated density	docetaxel	197143.0	31206.0	0.000
22Rv1	tubulin	periphery	Integrated density	Zn	139005.0	33264.0	0.000
22Rv1	tubulin	periphery	Median intensity	control	111.4	13.0	0.000
22Rv1	tubulin	periphery	Median intensity	cisplatin	8.4	17.7	0.634
22Rv1	tubulin	periphery	Median intensity	docetaxel	69.2	15.6	0.000
22Rv1	tubulin	periphery	Median intensity	Zn	47.7	16.6	0.005
22Rv1	tubulin	periphery	Periphery/cell integrated density ratio	control	0.9	0.0	< 2e-16
22Rv1	tubulin	periphery	Periphery/cell integrated density ratio	cisplatin	-0.3	0.0	0.000
22Rv1	tubulin	periphery	Periphery/cell integrated density ratio	docetaxel	-0.2	0.0	0.000
22Rv1	tubulin	periphery	Periphery/cell integrated density ratio	Zn	-0.1	0.0	0.001
PC-3	actin	cell	Integrated density	control	1490356.0	368906.0	0.000
PC-3	actin	cell	Integrated density	cisplatin	909408.0	528193.0	0.088
PC-3	actin	cell	Integrated density	docetaxel	44589.0	459674.0	0.923
PC-3	actin	cell	Integrated density	Zn	603765.0	505145.0	0.235
PC-3	actin	cell	Median intensity	control	307.3	29.2	< 2e-16
PC-3	actin	cell	Median intensity	cisplatin	-17.8	41.8	0.670
PC-3	actin	cell	Median intensity	docetaxel	141.7	36.4	0.000
PC-3	actin	cell	Median intensity	Zn	72.1	40.0	0.074
PC-3	actin	fibers	Number of fibers	control	2.8	0.6	0.000
PC-3	actin	fibers	Number of fibers	cisplatin	-0.1	0.9	0.870
PC-3	actin	fibers	Number of fibers	docetaxel	-0.8	0.8	0.290
PC-3	actin	fibers	Number of fibers	Zn	-0.8	0.8	0.318
PC-3	actin	fibers	SD of angle	control	19.8	4.5	0.000
PC-3	actin	fibers	SD of angle	cisplatin	8.7	6.6	0.193
PC-3	actin	fibers	SD of angle	docetaxel	7.9	6.1	0.196
PC-3	actin	fibers	SD of angle	Zn	9.2	6.8	0.182
PC-3	actin	fibers	Fiber lenght (µm)	control	4.7	0.4	0.000
PC-3	actin	fibers	Fiber lenght (µm)	cisplatin	0.0	0.6	0.992
PC-3	actin	fibers	Fiber lenght (µm)	docetaxel -	0.0	0.6	0.991
PC-3	actin	fibers	Fiber lenght (µm)	Zn	1.0	0.6	0.126
PC-3	actin	fibers	Integrated density	control	716.1	124.5	0.000
PC-3	actin	fibers	Integrated density	cisplatin	104.3	182.3	0.569
PC-3	actin	fibers	Integrated density	docetaxel	322.9	160.8	0.049
PC-3	actin	fibers	Integrated density	Zn	379.8	182.3	0.041
PC-3	actin	fibers	Mean intensity	control	388.3	50.2	0.000
PC-3	actin	fibers	Mean intensity	cisplatin	61.1	73.5	0.409
PC-3	actin	fibers	Mean intensity	docetaxel	155.6	64.8	0.019
PC-3	actin	fibers	Mean intensity	Zn	101.7	73.5	0.171
PC-3	actin	periphery	Integrated density	control	791526.0	110027.0	0.000
PC-3	actin	periphery	Integrated density	cisplatin	284031.0	157535.0	0.074
PC-3	actin	periphery	Integrated density	docetaxel	144596.0	137099.0	0.294
PC-3	actin	periphery	Integrated density	Zn	291084.0	150661.0	0.056
PC-3	actin	periphery	Median intensity	control	329.4	32.0	< 2e-16
PC-3	actin	periphery	Median intensity	cisplatin	-9.8	45.9	0.831

PC-3	actin	periphery	Median intensity	docetaxel	196.8	39.9	0.000
PC-3	actin	periphery	Median intensity	Zn	101.9	43.9	0.022
PC-3	actin	periphery	Periphery/cell integrated density ratio	control	0.6	0.0	<2e-16
PC-3	actin	periphery	Periphery/cell integrated density ratio	cisplatin	-0.1	0.1	0.014
PC-3	actin	periphery	Periphery/cell integrated density ratio	docetaxel	0.1	0.0	0.046
PC-3	actin	periphery	Periphery/cell integrated density ratio	Zn	0.0	0.0	0.793
PC-3	morphology	cell	Aspect ratio	control	2.0	0.2	< 2e-16
PC-3	morphology	cell	Aspect ratio	cisplatin	-0.2	0.3	0.548
PC-3	morphology	cell	Aspect ratio	docetaxel	-0.6	0.2	0.006
PC-3	morphology	cell	Aspect ratio	Zn	-0.4	0.2	0.099
PC-3	morphology	cell	Cell area (µm ²)	control	866.7	160.4	0.000
PC-3	morphology	cell	Cell area (µm ²)	cisplatin	439.0	229.7	0.059
PC-3	morphology	cell	Cell area (µm ²)	docetaxel	-358.5	199.9	0.076
PC-3	morphology	cell	Cell area (µm ²)	Zn	-7.1	219.7	0.974
PC-3	morphology	cell	Maximum caliper (µm)	control	17.7	1.3	< 2e-16
PC-3	morphology	cell	Maximum caliper (µm)	cisplatin	4.0	1.9	0.039
PC-3	morphology	cell	Maximum caliper (µm)	docetaxel	-5.8	1.7	0.001
PC-3	morphology	cell	Maximum caliper (µm)	Zn	-1.4	1.8	0.437
PC-3	morphology	cell	Roundness	control	0.6	0.0	< 2e-16
PC-3	morphology	cell	Roundness	cisplatin	0.0	0.1	0.786
PC-3	morphology	cell	Roundness	docetaxel	0.1	0.0	0.008
PC-3	morphology	cell	Roundness	Zn	0.1	0.1	0.168
PC-3	tubulin	cell	Integrated density	control	1220513.0	245560.0	0.000
PC-3	tubulin	cell	Integrated density	cisplatin	306931.0	351588.0	0.385
PC-3	tubulin	cell	Integrated density	docetaxel	178744.0	305979.0	0.560
PC-3	tubulin	cell	Integrated density	Zn	7317.0	336246.0	0.983
PC-3	tubulin	cell	Median intensity	control	208.2	29.8	0.000
PC-3	tubulin	cell	Median intensity	cisplatin	-18.3	42.6	0.668
PC-3	tubulin	cell	Median intensity	docetaxel	202.5	37.1	0.000
PC-3	tubulin	cell	Median intensity	Zn	21.8	40.8	0.594
PC-3	tubulin	periphery	Integrated density	control	551481.0	60615.0	0.000
PC-3	tubulin	periphery	Integrated density	cisplatin	68363.0	86788.0	0.433
PC-3	tubulin	periphery	Integrated density	docetaxel	188511.0	75530.0	0.014
PC-3	tubulin	periphery	Integrated density	Zn	21700.0	83001.0	0.794
PC-3	tubulin	periphery	Median intensity	control	208.2	29.8	0.000
PC-3	tubulin	periphery	Median intensity	cisplatin	-18.3	42.6	0.668
PC-3	tubulin	periphery	Median intensity	docetaxel	202.5	37.1	0.000
PC-3	tubulin	periphery	Median intensity	Zn	21.8	40.8	0.594
PC-3	tubulin	periphery	Periphery/cell integrated density ratio	control	0.6	0.0	<2e-16
PC-3	tubulin	periphery	Periphery/cell integrated density ratio	cisplatin	-0.1	0.1	0.040
PC-3	tubulin	periphery	Periphery/cell integrated density ratio	docetaxel	0.0	0.1	0.386
PC-3	tubulin	periphery	Periphery/cell integrated density ratio	Zn	0.0	0.1	0.519
PNT1A	actin	cell	Integrated density	control	1007319.0	94594.0	<2e-16
PNT1A	actin	cell	Integrated density	cisplatin	-90165.0	114712.0	0.433
PNT1A	actin	cell	Integrated density	docetaxel	54353.0	116799.0	0.642
PNT1A	actin	cell	Integrated density	Zn	-25196.0	118971.0	0.832
PNT1A	actin	cell	Median intensity	control	399.1	19.4	< 2e-16
PNT1A	actin	cell	Median intensity	cisplatin	-91.3	23.6	0.000

PNT1A	actin	cell	Median intensity	docetaxel	0.5	24.0	0.984
PNT1A	actin	cell	Median intensity	Zn	-85.7	24.4	0.001
PNT1A	actin	fibers	Number of fibers	control	2.7	0.5	0.000
PNT1A	actin	fibers	Number of fibers	cisplatin	2.4	0.6	0.000
PNT1A	actin	fibers	Number of fibers	docetaxel	-0.6	0.6	0.294
PNT1A	actin	fibers	Number of fibers	Zn	0.5	0.6	0.388
PNT1A	actin	fibers	SD of angle	control	21.1	3.1	0.000
PNT1A	actin	fibers	SD of angle	cisplatin	0.6	3.6	0.877
PNT1A	actin	fibers	SD of angle	docetaxel	-4.4	3.8	0.247
PNT1A	actin	fibers	SD of angle	Zn	-4.0	3.6	0.275
PNT1A	actin	fibers	Fiber length (μm)	control	4.6	0.7	0.000
PNT1A	actin	fibers	Fiber length (μm)	cisplatin	3.0	0.8	0.000
PNT1A	actin	fibers	Fiber length (μm)	docetaxel	4.9	0.8	0.000
PNT1A	actin	fibers	Fiber length (μm)	Zn	5.0	0.8	0.000
PNT1A	actin	fibers	Integrated density	control	840.8	192.2	0.000
PNT1A	actin	fibers	Integrated density	cisplatin	281.6	227.1	0.217
PNT1A	actin	fibers	Integrated density	docetaxel	1372.1	233.6	0.000
PNT1A	actin	fibers	Integrated density	Zn	765.7	230.4	0.001
PNT1A	actin	fibers	Mean intensity	control	459.0	32.1	< 2e-16
PNT1A	actin	fibers	Mean intensity	cisplatin	-87.3	37.9	0.023
PNT1A	actin	fibers	Mean intensity	docetaxel	133.4	39.0	0.001
PNT1A	actin	fibers	Mean intensity	Zn	-41.9	38.5	0.277
PNT1A	actin	periphery	Integrated density	control	765959.0	59110.0	<2e-16
PNT1A	actin	periphery	Integrated density	cisplatin	-64400.0	71682.0	0.370
PNT1A	actin	periphery	Integrated density	docetaxel	40700.0	72986.0	0.578
PNT1A	actin	periphery	Integrated density	Zn	-36874.0	74343.0	0.620
PNT1A	actin	periphery	Median intensity	control	399.1	19.4	< 2e-16
PNT1A	actin	periphery	Median intensity	cisplatin	-91.3	23.6	0.000
PNT1A	actin	periphery	Median intensity	docetaxel	0.5	24.0	0.984
PNT1A	actin	periphery	Median intensity	Zn	-85.7	24.4	0.001
PNT1A	actin	periphery	Periphery/cell integrated density ratio	control	0.8	0.0	<2e-16
PNT1A	actin	periphery	Periphery/cell integrated density ratio	cisplatin	0.0	0.0	0.828
PNT1A	actin	periphery	Periphery/cell integrated density ratio	docetaxel	0.0	0.0	0.568
PNT1A	actin	periphery	Periphery/cell integrated density ratio	Zn	0.0	0.0	0.712
PNT1A	morphology	cell	Aspect ratio	control	2.0	0.2	<2e-16
PNT1A	morphology	cell	Aspect ratio	cisplatin	0.4	0.2	0.091
PNT1A	morphology	cell	Aspect ratio	docetaxel	0.2	0.2	0.502
PNT1A	morphology	cell	Aspect ratio	Zn	0.5	0.2	0.029
PNT1A	morphology	cell	Cell area (μm^2)	control	400.9	42.4	<2e-16
PNT1A	morphology	cell	Cell area (μm^2)	cisplatin	40.6	51.4	0.431
PNT1A	morphology	cell	Cell area (μm^2)	docetaxel	20.0	52.3	0.702
PNT1A	morphology	cell	Cell area (μm^2)	Zn	67.4	53.3	0.207
PNT1A	morphology	cell	Maximum caliper (μm)	control	13.8	1.0	<2e-16
PNT1A	morphology	cell	Maximum caliper (μm)	cisplatin	1.7	1.2	0.159
PNT1A	morphology	cell	Maximum caliper (μm)	docetaxel	0.3	1.2	0.811
PNT1A	morphology	cell	Maximum caliper (μm)	Zn	2.7	1.2	0.028
PNT1A	morphology	cell	Roundness	control	0.6	0.0	<2e-16
PNT1A	morphology	cell	Roundness	cisplatin	-0.1	0.0	0.036

PNT1A	morphology	cell	Roundness	docetaxel	0.0	0.0	0.276
PNT1A	morphology	cell	Roundness	Zn	-0.1	0.0	0.043
PNT1A	tubulin	cell	Integrated density	control	588131.0	55432.0	<2e-16
PNT1A	tubulin	cell	Integrated density	cisplatin	-150627.0	67222.0	0.026
PNT1A	tubulin	cell	Integrated density	docetaxel	-24497.0	68445.0	0.721
PNT1A	tubulin	cell	Integrated density	Zn	-9799.0	69718.0	0.888
PNT1A	tubulin	cell	Median intensity	control	208.6	8.9	< 2e-16
PNT1A	tubulin	cell	Median intensity	cisplatin	-65.2	10.8	0.000
PNT1A	tubulin	cell	Median intensity	docetaxel	-0.3	11.0	0.976
PNT1A	tubulin	cell	Median intensity	Zn	-34.5	11.3	0.002
PNT1A	tubulin	periphery	Integrated density	control	390453.0	28542.0	<2e-16
PNT1A	tubulin	periphery	Integrated density	cisplatin	-89172.0	34612.0	0.011
PNT1A	tubulin	periphery	Integrated density	docetaxel	1031.0	35242.0	0.977
PNT1A	tubulin	periphery	Integrated density	Zn	-11153.0	35897.0	0.756
PNT1A	tubulin	periphery	Median intensity	control	198.5	9.1	< 2e-16
PNT1A	tubulin	periphery	Median intensity	cisplatin	-58.1	11.0	0.000
PNT1A	tubulin	periphery	Median intensity	docetaxel	10.0	11.2	0.373
PNT1A	tubulin	periphery	Median intensity	Zn	-31.6	11.5	0.006
PNT1A	tubulin	periphery	Periphery/cell integrated density ratio	control	0.7	0.0	<2e-16
PNT1A	tubulin	periphery	Periphery/cell integrated density ratio	cisplatin	0.0	0.0	0.925
PNT1A	tubulin	periphery	Periphery/cell integrated density ratio	docetaxel	0.0	0.0	0.861
PNT1A	tubulin	periphery	Periphery/cell integrated density ratio	Zn	0.0	0.0	0.688