

Supplementary Table 1. Average durations of mitotic stage (in hours) for HeLa, HaCaT, U-118, PHF, A549, PC-3 and 3T3 cell lines after treatment with 1-1000 nM doses of 3 MT drugs. For each cell line, T1 dose is colored in purple; durations of mitotic arrest in T2 and higher doses are colored in red (brick) for Nocodazole, green for Taxol and blue for Vinorelbine.

	Control	1 nM	3 nM	10 nM	30 nM	100 nM	300 nM	1000 nM
HeLa								
Nocodazole	0.64±0.22	0.76±0.30	0.98±0.53	1.08±0.74	6.09±4.41	10.97±4.58	14.38±4.77	14.34±5.69
Taxol	0.64±0.22	1.05±0.73	12.89±5.00	14.84±6.30	14.87±6.35	13.96±5.13	13.74±5.66	12.71±6.05
Vinorelbine	0.64±0.22	0.84±0.41	0.76±0.39	7.66±6.87	13.23±6.55	16.90±5.46	16.27±7.52	16.77±6.16
HaCaT								
Nocodazole	0.89±0.23	0.84±0.20	0.89±0.26	0.83±0.20	1,10±0.53	7.44±2.59	8.63±4.84	8.78±4.39
Taxol	0.89±0.23	1.15±0.50	1.50±0.43	4.46±1.94	7.49±3.03	7.44±3.62	8.72±3.95	10.37±5.33
Vinorelbine	0.89±0.23	1.18±0.50	1.21±0.47	5.23±1.81	7.36±2.49	8.82±4.10	9.19±5.16	11.72±6.36
U-118								
Nocodazole	1.22±0.40	1.18±0.46	1,30±0.44	1.58±0.65	3.20±2.30	12.12±6.50	12.15±5.14	15.36±7.17
Taxol	1.22±0.40	1.78±0.95	2.77±1.07	7.23±3.73	12.06±5.22	14.57±7.08	15.44±6.10	14.03±5.51
Vinorelbine	1.22±0.40	0.90±0.31	1.07±0.48	14.96±4.79	15.85±8.97	15.81±6.66	15.48±7.28	14.74±5.47
PHF								
Nocodazole	1.01±0.41	0.98±0.24	0.92±0.19	0.97±0.23	1.02±0.42	12.82±5.26	21.06±13.01	24.43±11.43
Taxol	1.01±0.39	0.93±0.22	3.08±1.17	4.61±1.6	6.55±4.01	10.03±6.36	15.41±6.95	16.28±6.77
Vinorelbine	1.01±0.39	0.87±0.19	0.89±0.15	0.97±0.18	0.97±0.36	3.48±2.17	13.65±6.27	25.45±15.37
A549								
Nocodazole	0.83±0.25	0,90±0.31	0.95±0.28	0.99±0.26	3.35±1.89	15.40±4.85	18.48±6.61	20.46±6.72
Taxol	0.83±0.25	0.88±0.30	0.73±0.26	3.28±1.60	15.27±5.25	15.72±4.66	18.41±5.31	19.56±4.94
Vinorelbine	0.83±0.25	0.84±0.36	0.73±0.31	6.07±5.42	20.15±7.19	21.7±9.48	22.15±7.83	21.83±6.56
PC-3								
Nocodazole	1.05±0.27	0.86±0.23	0.88±0.21	0.87±0.23	8.10±5.79	17.83±4.95	19.39±5.45	20.69±6.2
Taxol	1.05±0.27	0.88±0.23	0.93±0.29	7.85±3.87	15.69±6.31	17.97±6.27	20.11±5.84	19.49±7.57
Vinorelbine	1.05±0.27	0.73±0.28	0.76±0.24	1.04±0.62	17.12±4.93	20,00±5.40	19.33±5.73	20.37±7.12
3T3								
Nocodazole	0.98±0.37	0.88±0.30	0,90±0.25	0.97±0.28	0.96±0.28	3.20±1.05	8.77±2.74	7.06±2.62
Taxol	0.98±0.37	0.88±0.30	0.90±0.25	0.97±0.28	0.96±0.28	0.88±0.30	2.94±2.03	5.95±2.25
Vinorelbine	0.98±0.37	0.97±0.28	0.78±0.25	0.88±0.30	0.90±0.25	7.75±3.47	7.75±2.65	8.39±3.41

Supplementary Table 2. Average duration of mitotic arrest (in hours) in post-T2 doses of Nocodazole, Taxol and Vinorelbine for HeLa, HaCaT, U-118, PHF, A549, PC-3 and 3T3 cell lines. N= >100 cells for each treatment group.

	Nocodazole	Taxol	Vinorelbine
HeLa	13.23±5.25	13.82±5.82	15.79±6.59
HaCaT	8.28±4.08	8.48±4.19	9.27±4.97
U-118	13.21±6.47	14.02±6.1	15.26±6.71
PHF	22.75±12.3	15.85±6.845	19.55±13.1
A549	18.11±6.43	16.94±5.22	21.45±7.82
PC-3	17.39±7.25	16.99±7.49	19.37±6.08
3T3	7.91±2.8	5.95±2.35	7.96±3.19

Supplementary Table 3. Comparison of durations of mitotic arrest within the same cell line after treatment with post-T2 doses of Nocodazole (N), Taxol (T) or Vinorelbine (V). Results obtained by ANOVA analysis.

	Significant?	p-value
N HeLa vs. T HeLa	No	0.6302
N HeLa vs. V HeLa	Yes	0.0002
T HeLa vs. V HeLa	Yes	0.003
N HaCaT vs. T HaCaT	No	0.9159
N HaCaT vs. V HaCaT	No	0.1011
T HaCaT vs. V HaCaT	No	0.1784
N U-118 vs. T U-118	No	0.474
N U-118 vs. V U-118	Yes	0.0061
T U-118 vs. V U-118	No	0.107
N PHF vs. T PHF	Yes	<0.0001
N PHF vs. V PHF	No	0.1051
T PHF vs. V PHF	Yes	0.0489
N A549 vs. T A549	No	0.1863
N A549 vs. V A549	Yes	<0.0001
T A549 vs. V A549	Yes	<0.0001
N PC-3 vs. T PC-3	No	0.8565
N PC-3 vs. V PC-3	Yes	0.0303
T PC-3 vs. V PC-3	Yes	0.0044
N 3T3 vs. T 3T3	Yes	<0.0001
N 3T3 vs. V 3T3	No	0.9908
T 3T3 vs. V 3T3	Yes	<0.0001

Supplementary Table 4. Results from ANOVA analysis. Comparison of durations of mitotic arrest between different cell lines after treatment with post-T2 doses of Nocodazole, Taxol or Vinorelbine.

	Nocodazole		Taxol		Vinorelbine	
	Significant?	p-value	Significant?	p-value	Significant?	p-value
HeLa vs. HaCaT	Yes	<0.0001	Yes	<0.0001	Yes	<0.0001
HeLa vs. U-118	No	>0.9999	No	0.9998	No	0.9853
HeLa vs. A549	Yes	<0.0001	Yes	<0.0001	Yes	<0.0001
HeLa vs. PC-3	Yes	<0.0001	Yes	<0.0001	Yes	<0.0001
HeLa vs. 3T3	Yes	<0.0001	Yes	<0.0001	Yes	<0.0001
HeLa vs. PHF	Yes	<0.0001	No	0.0535	Yes	0.0002
HaCaT vs. U-118	Yes	<0.0001	Yes	<0.0001	Yes	<0.0001
HaCaT vs. A549	Yes	<0.0001	Yes	<0.0001	Yes	<0.0001
HaCaT vs. PC-3	Yes	<0.0001	Yes	<0.0001	Yes	<0.0001
HaCaT vs. 3T3	No	0.9995	Yes	0.003	No	0.5929
HaCaT vs. PHF	Yes	<0.0001	Yes	<0.0001	Yes	<0.0001
U-118 vs. A549	Yes	<0.0001	Yes	<0.0001	Yes	<0.0001
U-118 vs. PC-3	Yes	<0.0001	Yes	<0.0001	Yes	<0.0001
U-118 vs. 3T3	Yes	<0.0001	Yes	<0.0001	Yes	<0.0001
U-118 vs. PHF	Yes	<0.0001	No	0.1167	Yes	<0.0001
A549 vs. PC-3	No	0.9646	No	>0.9999	No	0.0742
A549 vs. 3T3	Yes	<0.0001	Yes	<0.0001	Yes	<0.0001
A549 vs. PHF	Yes	<0.0001	No	0.6723	No	0.2838
PC-3 vs. 3T3	Yes	<0.0001	Yes	<0.0001	Yes	<0.0001
PC-3 vs. PHF	Yes	<0.0001	No	0.6666	No	>0.9999
3T3 vs. PHF	Yes	<0.0001	Yes	<0.0001	Yes	<0.0001

Supplementary Table 5. Average durations of mitotic arrest (in hours) for A549,PC-3, HeLa and HaCaT cell lines after treatment with 1 uM Taxol (T) in combination with 10 uM Navitoclax (NVTX), Venetoclax (VNTX), S63845 (S) or A-1155463 (A). N > 30 cells for each treatment group.

	T	T+NVTX	T+VNTX	T+S	T+A-1155	T+A-1331
A549	16.4±4.31	7.02±1.56	16.8±6.46	15.6±5.49	10.2±2.41	8.4±3.12
PC-3	19.5±7.65	8.71±4.44	18±6.31	19.8±5.74	11.5±4.48	6.79±3.33
PHF	16.3±6.78	11.2±4.99	17.6±7.57	15.5±7.08	12.8±3.65	11.2±3.53
HeLa	12.7±6.04	7.29±2.72	9.1±3.38	8.18±3.56	8±3.69	6.75±3.25
HaCaT	9.87±5.13	5.02±2.62	7.45±2.87	8.15±2.35	3.79±2.75	4.33±1.6

Supplementary Table 6. Statistical significance of the between duration of mitotic arrest between Taxol only and Taxo +Bcl-2 inhibitor treated cells. Results from ANOVA analysis.

	T vs. T+NVTX		T vs. T+VNTX		T vs. T+S63		T vs. T+A-1155		T vs. T+A-1331	
	Significant?	p-value	Significant?	p-value	Significant?	p-value	Significant?	p-value	Significant?	p-value
A549	Yes	<0.0001	No	0.9875	No	0.8678	Yes	<0.0001	Yes	<0.0001
PC-3	Yes	<0.0001	No	0.517	No	0.9986	Yes	<0.0001	Yes	<0.0001
PHF	Yes	<0.0001	No	0.7019	No	0.9478	Yes	0.0115	Yes	<0.0001
HeLa	Yes	<0.0001	Yes	<0.0001	Yes	<0.0001	Yes	<0.0001	Yes	<0.0001
HaCaT	Yes	<0.0001	Yes	0.0003	Yes	0.0198	Yes	<0.0001	Yes	<0.0001

Supplementary Table 7. Average durations of mitotic arrest (in hours) of slippage prone A549 and PC-3 cell lines after the treatment with 1 uM doses of Nocodazole, Taxol or Vinorelbine in combination with 10-10000 nM doses of A-1155463.

A-1155463	0	10 nM	30 nM	100 nM	300 nM	1000 nM	3000 nM	10000 nM
A549								
Nocodazole	20.43±7.35	19.76±6.24	15.43±5.75	13.04±5.3	11.05±3.3	10.56±4.11	11.1±5.45	9.88±3.88
Taxol	19.77±4.75	14.82±4.91	13.36±4.69	13.08±3.56	10.94±3.32	11.25±3.95	11.39±2.71	9.26±3.53
Vinorelbine	22.68±6.62	18.79±5.75	16.91±5.23	14.64±5.22	13.01±3.73	10.5±4.38	10.71±3.53	9.39±3.33
PC-3								
Nocodazole	20.52±6.14	19.34±6.46	17.33±5.02	16.68±3.81	15.54±4.79	13.83±5.51	14.8±4.82	12.8±5.26
Taxol	19.51±7.65	16.51±5.14	15.84±5.11	14.57±4.19	14.45±5.27	16.7±5.35	13.44±4.78	11.47±4.48
Vinorelbine	20.37±7.12	17.48±5.91	17.14±6.3	14.83±4.12	14.92±5.91	14.9±5.93	12.14±4.13	10.23±5.21

Supplementary Table 8. Average durations of mitotic arrest (in hours) of slippage prone A549 and PC-3 cell lines after the treatment with 1 uM doses of Nocodazole, Taxol or Vinorelbine in combination with 10-10000 nM doses of Navitoclax.

Navitoclax	0	10 nM	30 nM	100 nm	300 nM	1000 nM	3000 nM	10000 nM
A549								
Nocodazole	23.82±6.79	22.01±5.95	21.12±6.4	20.15±5.36	16.35±4.18	12.48±3.35	10.9±3.8	9.15±4.09
Taxol	17.4±4.02	15.43±4.81	15.3±4.79	12.67±3.7	12.21±3.2	9.86±3.02	9.98±2.29	7.11±1.46
Vinorelbine	25.41±8.01	27.4±9.51	25.96±7.75	20.51±5.63	17.51±5.92	14.98±6.46	10.77±5.18	9.43±4.84
PC-3								
Nocodazole	20.04±5.84	19.56±5.35	19.56±5.99	19.35±6.6	17.36±4.97	16.8±5.43	11.61±5.43	7.93±3.5
Taxol	19.8±6.74	21.56±5.42	18.86±4.81	19.03±7.48	19.25±6.03	16.86±6.7	12.59±4.87	8.71±4.44
Vinorelbine	19.86±6.46	21.36±5.9	20.15±5.93	19.79±6.13	17.98±6.56	15.64±5.53	13.58±5.2	6.9±3.32

Supplementary Table 9. Average durations of mitotic arrest (in hours) of slippage prone A549 and PC-3 cell lines after the treatment with 1 μ M doses of Nocodazole, Taxol or Vinorelbine in combination with 10-10000 nM doses of A-1331852.

A-1331852	0	10 nM	30 nM	100 nm	300 nM	1000 nM	3000 nM	10000 nM
A549								
Nocodazole	24.99 \pm 9.83	14.16 \pm 6.602	13.16 \pm 4.81	11.08 \pm 4.34	10.03 \pm 5.62	10.38 \pm 4.33	9.63 \pm 5.17	9.81 \pm 7.05
Taxol	17.26 \pm 4.61	13.11 \pm 4.1	12.91 \pm 3.99	11.65 \pm 4.17	11.03 \pm 4.51	10.81 \pm 3.73	9.64 \pm 3.17	8.40 \pm 3.13
Vinorelbine	20.30 \pm 5.90	15.90 \pm 7.52	13.73 \pm 5.97	11.18 \pm 5.52	11.12 \pm 5.48	11.08 \pm 4.68	9.843 \pm 4.26	9.29 \pm 5.31
PC-3								
Nocodazole	20.52 \pm 6.14	12.90 \pm 5.51	11.51 \pm 3.87	11.19 \pm 4.66	11.75 \pm 4.03	10.55 \pm 4.69	9.51 \pm 4.39	8.17 \pm 4.48
Taxol	19.80 \pm 6.74	13.21 \pm 5.61	13.27 \pm 6.16	10.41 \pm 3.62	11.36 \pm 4.43	10.91 \pm 4.78	9.26 \pm 4.29	6.79 \pm 3.33
Vinorelbine	19.86 \pm 6.46	12.11 \pm 4.47	12.28 \pm 4.74	11.86 \pm 4.72	12.49 \pm 3.90	10.58 \pm 4.75	9.86 \pm 3.99	6.78 \pm 3.53

Supplementary Table 10. Average durations of events (in hours) for A549, PC-3 and HaCaT cell lines after the treatment with 1 μ M Taxol (T) + 10 μ M A-1155463 (A) for A549 and PC-3 cells + 100 μ M Z-VAD-FMK (ZVAD).

	Duration of mitotic arrest before MOMP	Duration of mitotic arrest after MOMP	Total duration of mitotic arrest	Duration of post-slippage interphase
A549 (T+A+ZVAD)	11.17 \pm 3.17	8.27 \pm 3.55	19.37 \pm 4.2	21.08 \pm 5.63
PC-3 (T+A+ZVAD)	8.86 \pm 4.42	7.54 \pm 3.38	16.06 \pm 3.84	18.67 \pm 9.26
HaCaT (T+ZVAD)	7.27 \pm 3.9	6.55 \pm 3.86	13.51 \pm 4.18	24.13 \pm 6.96

Supplementary Table 11. Average durations of mitotic arrest (in hours) for HeLa and HaCaT cells after treatment with Barasertib, Taxol + Barasertib simultaneously, Taxol followed by Barasertib (sequentially) and Taxol only.

	Barasertib	Taxol + Barasertib together	Taxol + Barasertib sequentially	Taxol
HeLa	1.15 \pm 0.31	6.57 \pm 3.1	8.73 \pm 4.28	12.71 \pm 6.04
HaCaT	0.93 \pm 0.32	6.29 \pm 4.45	8.29 \pm 3.35	11.31 \pm 5.12

Supplementary Table 12. Average durations of mitotic arrest (in hours) for sensitized A549 and PC-3 cells after treatment with Barasertib + A-1155463 (B+A), Taxol + A-1155463 + Barasertib together (T+A+B tog.), Taxol+ A-1155463 + Barasertib sequentially (T+A+B seq.) and Taxol + A-1155463 (T+A).

	B+A	T+A+B tog.	T+A+B seq.	T+A
A549	1.13 \pm 0.65	3.55 \pm 3.23	6.83 \pm 3.3	10.77 \pm 4.29
PC-3	1.38 \pm 0.42	3.44 \pm 1.37	6.94 \pm 3.4	10.22 \pm 3.87

Supplementary Table 13. Fates of A549 cells after sequential treatment with mitotic inhibitors (1 μ M of Nocodazole, Taxol, or Vinorelbine) followed by 1 μ M of A-1155463 (number of cells survived/died)

	Nothing added	Added after 4 h	Added after 20 h
Nocodazole	114/1	63/77	78/0
Taxol	77/6	16/131	20/47
Vinorelbine	57/1	20/113	49/18