Suppl. Table 1. Cell viability and cytotoxicity experiments.

Viability and cytotoxicity assays - iPSC-DSN >d40													
Drug	*Biological Replicates [n]*	*Age [d]*	*BIHi-005-A [n]*	*Direct/ Thawed*	*BIHi-004-B [n]*	*Direct/ Thawed*	*Wells analyzed [total]*	*Excluded Wells (predefined*) [n]*	*Excluded Wells (predefined*) [%]*	*Excluded Outlier** [wells]*	*Excluded Outlier*** [wells, in %]*	*Excluded wells [total]*	*Excluded wells [total, in %]*
Paclitaxel	7	41.3	3	3/0	4	1/3	224	1	0.45	9	4.02	10	4.46
Paclitaxel 72h	5	44.4	4	0/4	1	0/1	160	0	0.00	4	2.50	4	2.50
Bortezomib	9	42.1	6	3/3	3	2/1	288	24	8.33	2	0.69	26	9.03
Vincristine	11	41.7	6	3/3	5	3/2	352	15	4.26	9	2.56	24	6.82
Cisplatin	9	41.7	5	3/2	4	2/2	288	12	4.17	4	1.39	16	5.56
Doxorubicin	3	43.0	2	2/0	1	1/0	96	2	2.08	2	2.08	4	4.17
5-Fluorouracil	4	42.5	2	0/2	2	2/0	128	14	10.94	2	1.56	16	12.50
5-Fluorouracil 72h	3	45.0	3	0/3	0	0/0	96	0	0.00	4	4.17	4	4.17
Paclitaxel 100nM and Lithium	6	44.0	6	6/0	0	0/0	192	8	4.17	3	1.56	11	5.73
Viability and cytotoxicity assays - iPSC-DSN d13													
Paclitaxel	3	13	3	1/2	0	0/0	96	0	0	1	1.04	1	1.04
Bortezomib	4	13	4	3/1	0	0/0	128	0	0	0	0.00	0	0.00
Vincristine	6	13	6	3/3	0	0/0	192	0	0	2	1.04	2	1.04
Cisplatin	5	13	5	2/3	0	0/0	160	0	0	1	0.63	1	0.63
Doxorubicin	3	13	3	3/0	0	0/0	96	0	0	0	0.00	0	0.00
5-Fluorouracil	3	13	3	3/0	0	0/0	96	0	0	0	0.00	0	0.00
Total (>d40 iPSC-DSN)	**57**	42.9	37	20/17	20	11/9	1824	76	4.17	39	2.14	115	6.30
Total (d13 iPSC-DSN)	**24**	13	24	15/9	0	0/0	768	0	0.00	4	0.52	4	0.52
Total (All)	**81**		61	35/26	20	11/9	2592	76	2.93	43	**1.66**	119	4.59

Direct refers to directly differentiated neurons, without freezing on day 11, and Age refers to the maturation day after Differentiation was started (d00)

**predefined:* All wells were screened miscroscopically before the experiment, and excluded if detached, presence of proliferating cells or hints for contamination

Suppl. Table 2. Functional characterization.

						Cell response [n]					% Cell response		
	Cell line	Maturation day	Cells (n) with response	Cells (total)	% response	Profile 1	Profile 2	Profile 3	Total	Not associated	Profile 1	Profile 2	Profile 3
ATP 10…100 µM	BIHi-005-A ***thawed***	44	3	16	18.8	3	0	0	3		100.0	0.0	0.0
	BIHi-005-A ***thawed***	44	24	56	42.9	17	7	0	24		70.8	29.2	0.0
	BIHi-005-A ***thawed***	44	3	46	6.5	0	3	0	3		0.0	100.0	0.0
	BIHi-005-A ***thawed***	44	26	32	81.3	20	6	0	26		76.9	23.1	0.0
	BIHi-004-B ***thawed***	77	12	18	66.7	5	7	0	12		41.7	58.3	0.0
	BIHi-005-A	43	25	33	75.8	21	4	0	25		84.0	16.0	0.0
	BIHi-005-A	48	13	38	34.2	6	7	0	13		46.2	53.8	0.0
	BIHi-005-A	48	8	48	16.7	2	6	0	8		25.0	75.0	0.0
	BIHi-005-A ***thawed***	45	102	269	37.9	69	33	0	102		51.5	48.5	0.0
	BIHi-004-B ***thawed***	77	12	18	66.7	5	7	0	12		41.7	58.3	0.0
	Total	49	114	287	**42.8**	74	40	0	114		55.6	44.4	0.0
		± 11.5			± 28.75						± 33.3	± 33.3	± 0
Capsaicin 1… 10µM	BIHi-004-B ***thawed***	71	10	24	41.7	0	1	9	10	0	0.0	10.0	90.0
	BIHi-004-B ***thawed***	71	2	16	12.5	2	0	0	2	0	100.0	0.0	0.0
	BIHi-004-B ***thawed***	71	11	24	45.8	0	2	9	11	0	0.0	18.2	81.8
	BIHi-004-B ***thawed***	71	4	22	18.2	0	2	2	4	0	0.0	50.0	50.0
	BIHi-004-B ***thawed***	71	2	18	11.1	0	2	0	2	0	0.0	100.0	0.0
	BIHi-004-B ***thawed***	71	5	34	14.7	4	1	0	5	0	80.0	20.0	0.0
	BIHi-004-B ***thawed***	71	1	12	8.3	0	0	1	1	0	0.0	0.0	100.0
	BIHi-004-B ***thawed***	71	5	16	31.3	2	0	3	5	0	40.0	0.0	60.0
	BIHi-004-B ***thawed***	71	4	12	33.3	2	2	0	4	0	50.0	50.0	0.0
	BIHi-005-A	43	4	54	7.4	4	0	0	4	0	100.0	0.0	0.0
	BIHi-005-A	43	4	21	19.0	2	0	0	2	2	100.0	0.0	0.0
	BIHi-005-A	43	15	25	60.0	1	7	7	15	0	6.7	46.7	46.7
	BIHi-005-A	43	23	100	23.0	7	7	7	21	2	68.9	15.6	15.6
	BIHi-004-B	71	44	178	24.7	10	10	24	44	0	30.0	27.6	42.4
	Total	64	67	278	**25.3**	17	17	31	65	2	**41.1**	**24.6**	**35.7**
		± 12.7			± 16.98						± 44.3	± 31.3	± 40.2
Icilin 1…10 µM	BIHi-004-B	71	11	14	78.6	6	3	2	11	0	54.5	27.3	18.2
	BIHi-004-B	71	6	14	42.9	2	2	1	5	1	40.0	40.0	20.0
	BIHi-005-A	43	11	48	22.9	1	3	7	11	0	9.1	27.3	63.6
	BIHi-005-A	43	15	49	30.6	1	3	11	15	0	6.7	20.0	73.3
	BIHi-005-A	43	26	97	26.8	2	6	18	26	26	7.9	23.6	68.5
	BIHi-004-B	71	17	28	60.7	8	5	3	16	16	47.3	33.6	19.1
	Total	57	43	125	43.7	10	11	21	42	1	**27.6**	**28.6**	**43.8**
		± 16.2			± 24.6						± 23.5	± 8.3	± 28.8

Suppl. Table 3. z-score.

1	Vehicle	Full kill
Mean	100	0.00
Median	95.82	0.01
SD	11.08	0.03
Z-Score	0.66693016	

2	Vehicle	Full kill
Mean	100	0.03
Median	96.88	0.01
SD	12.44	0.06
Z-Score	0.62482325	

3	Vehicle	Full kill
Mean	100	0.20635095
Median	97.0690383	0.20538007
SD	9.19472741	0.06420116
Z-Score	0.72165778	

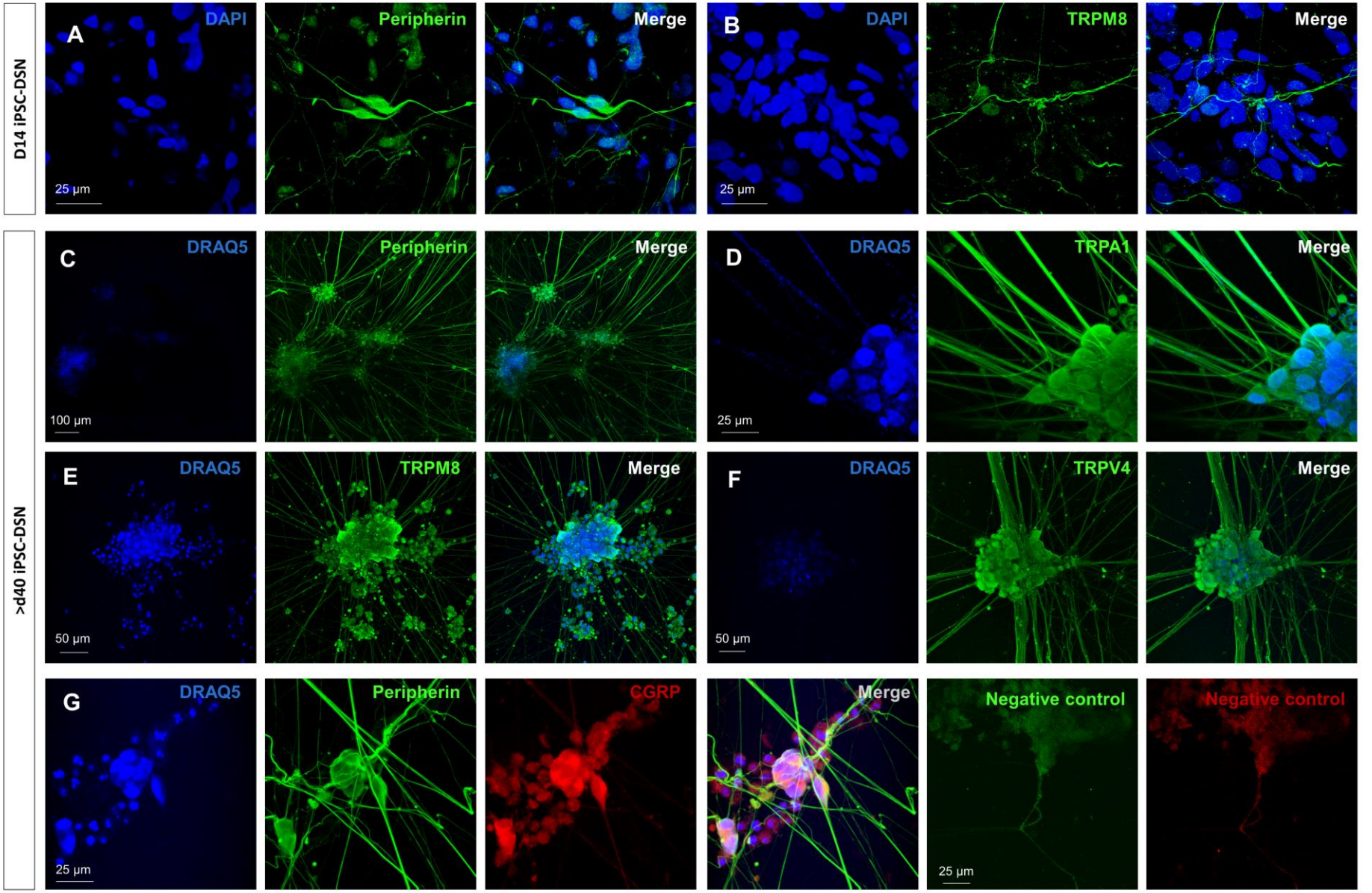
4	Vehicle	Full kill
Mean	100	0.20
Median	101.36	0.18
SD	4.33	0.09
Z-Score	0.86690182	

5	Vehicle	Full kill
	100	0.10
	100.50	0.10
	2.84	0.04
Z-Score	0.91357648	

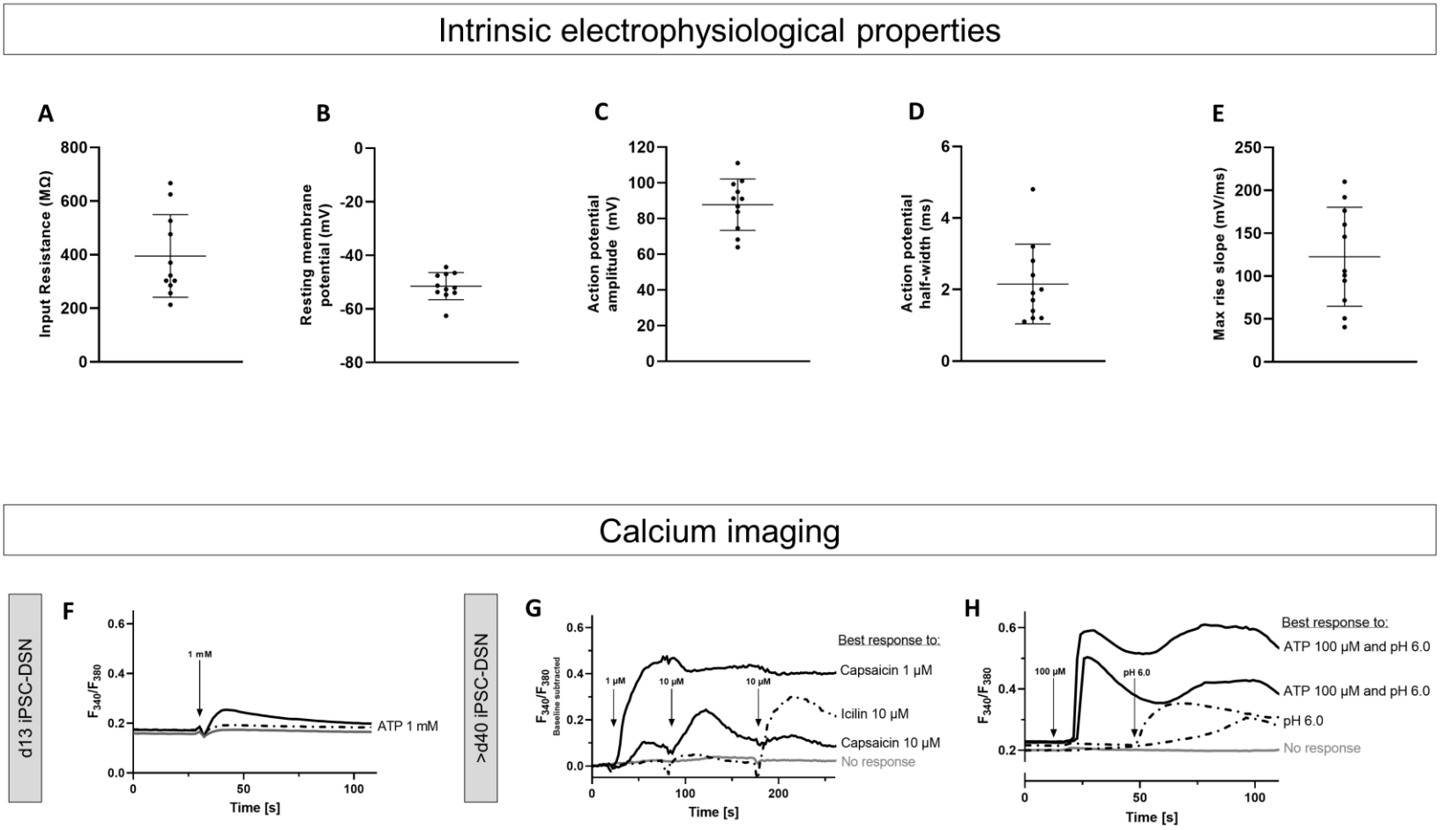
Mean z-score	0.76
SD	0.13

Assays used		
1	Paclitaxel Pre-Experiment	
2	Suppl. Mat. 1	Bortezomib, Figure 14 C
3	Suppl. Mat. 1	Vincristine, Figure 15 C
4	Suppl. Mat. 1	Cisplatin, Figure 16,B
5	Suppl. Mat. 1	5-Fluorouracil, Figure 18 C

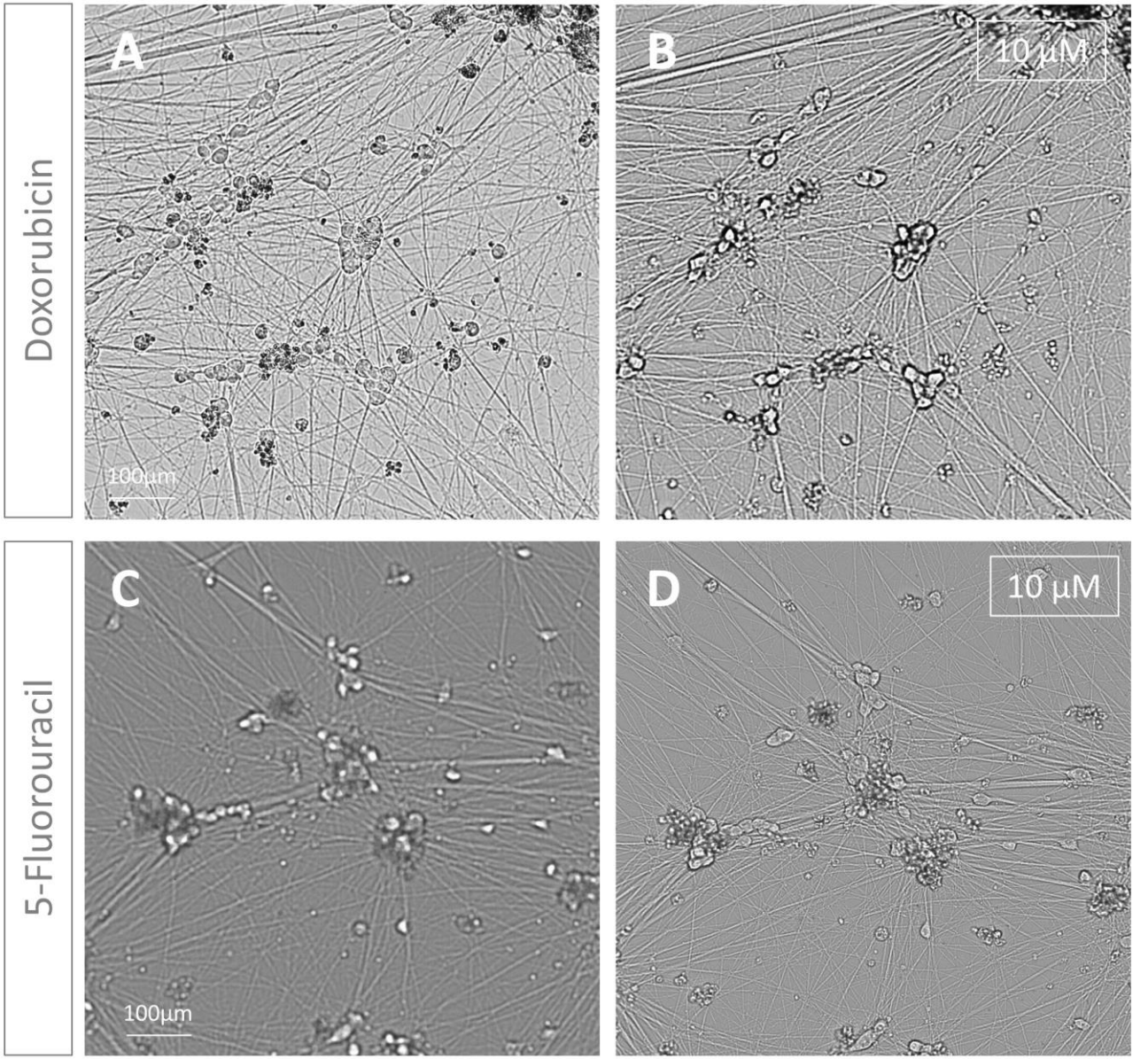
Suppl. Figure 1. Staining.



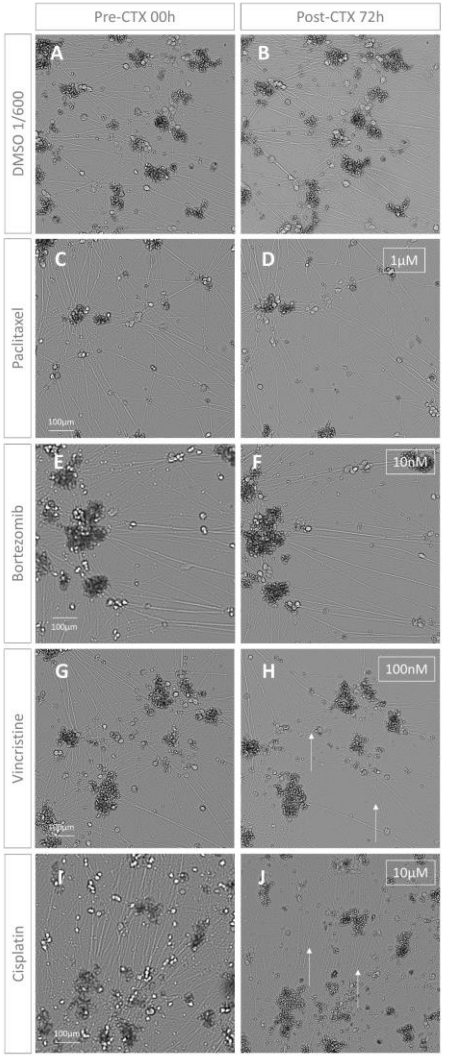
Suppl. Figure 2. Intrinsic electrophysiological properties.



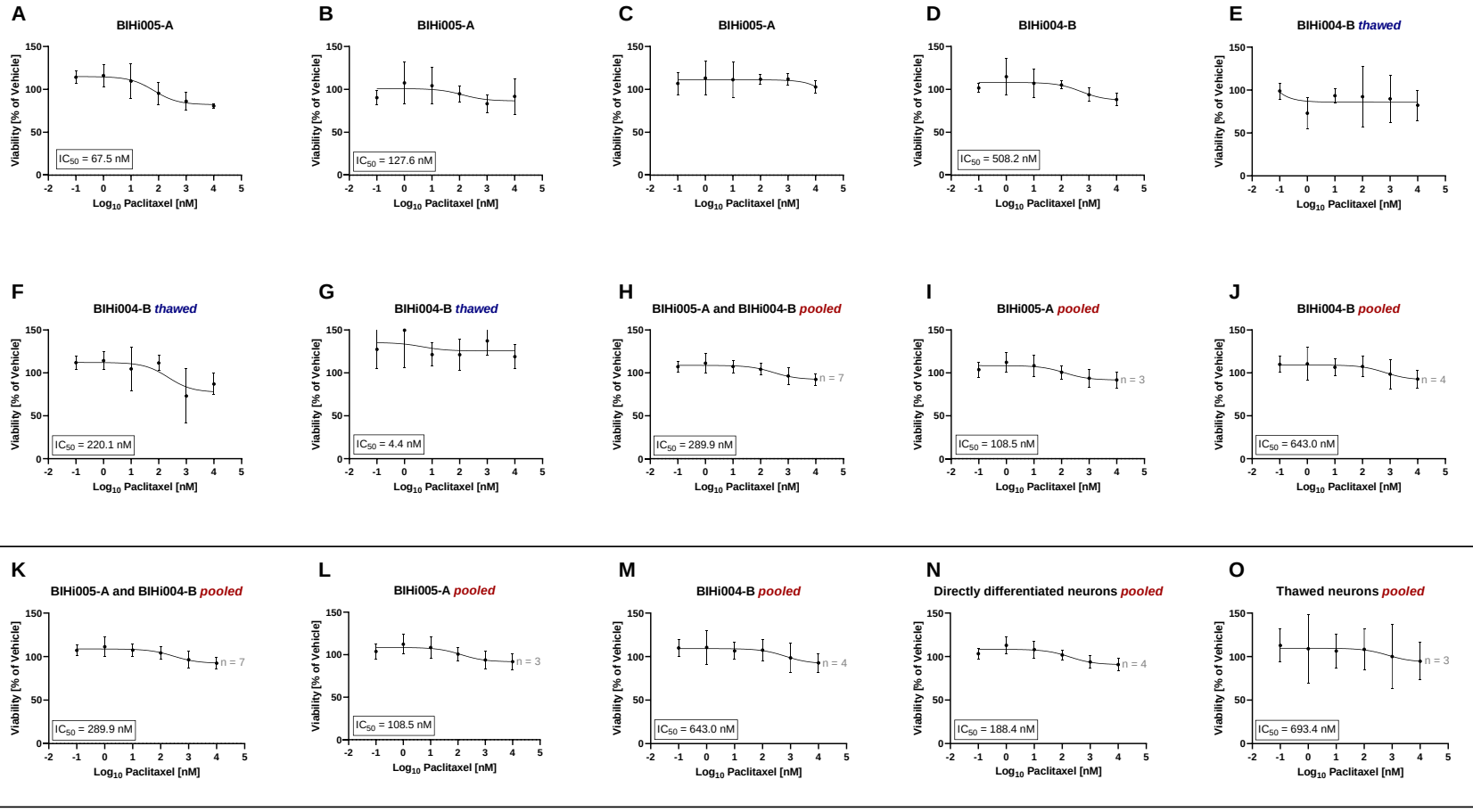
Suppl. Figure 3. Assessment of iPSC-DSN morphology upon 24h-treatment with the non-neurotoxic drugs doxorubicin and 5-fluorouracil.



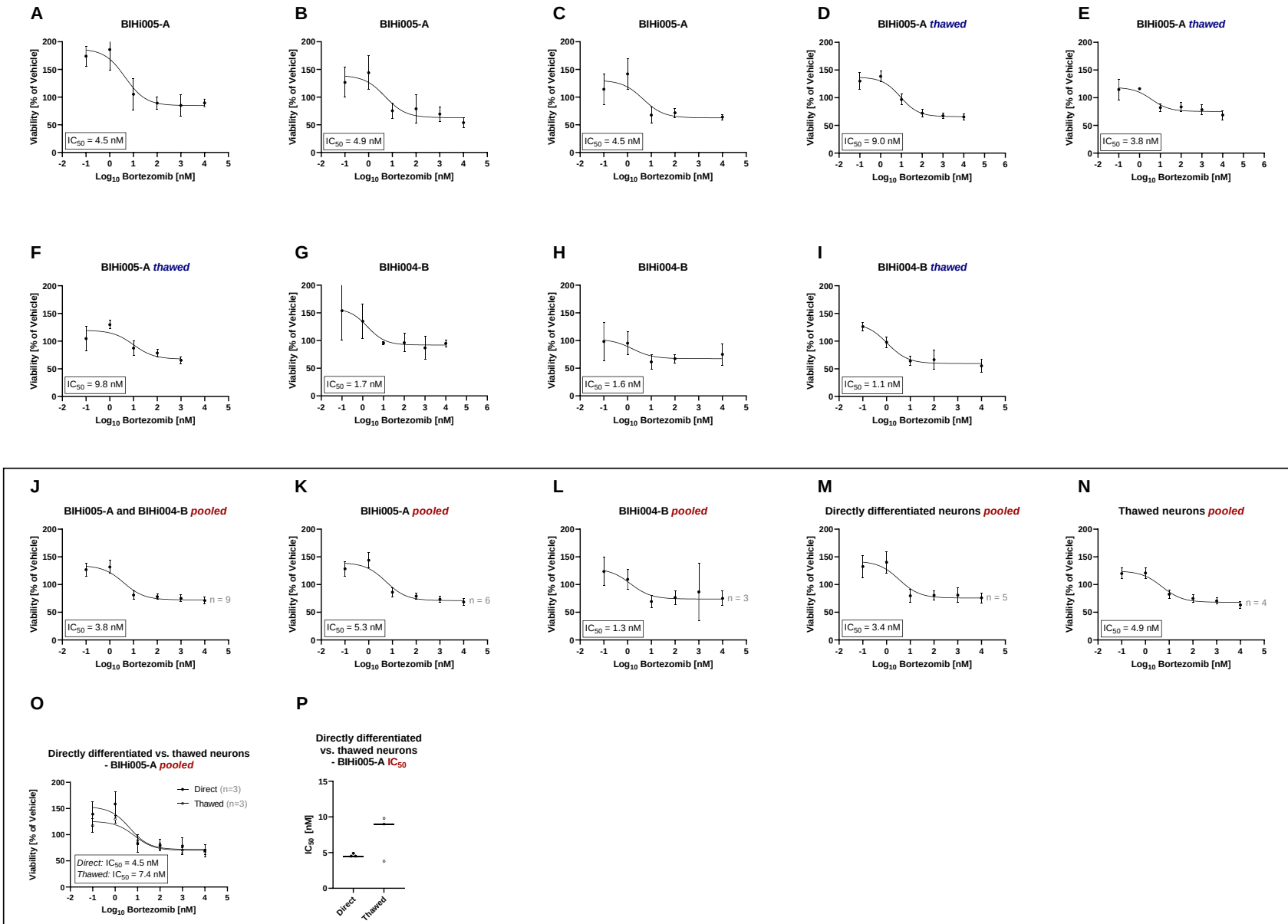
Suppl. Figure 4. Morphological changes of iPSC-DSN 72h after 24h-treatment with neurotoxic drugs.



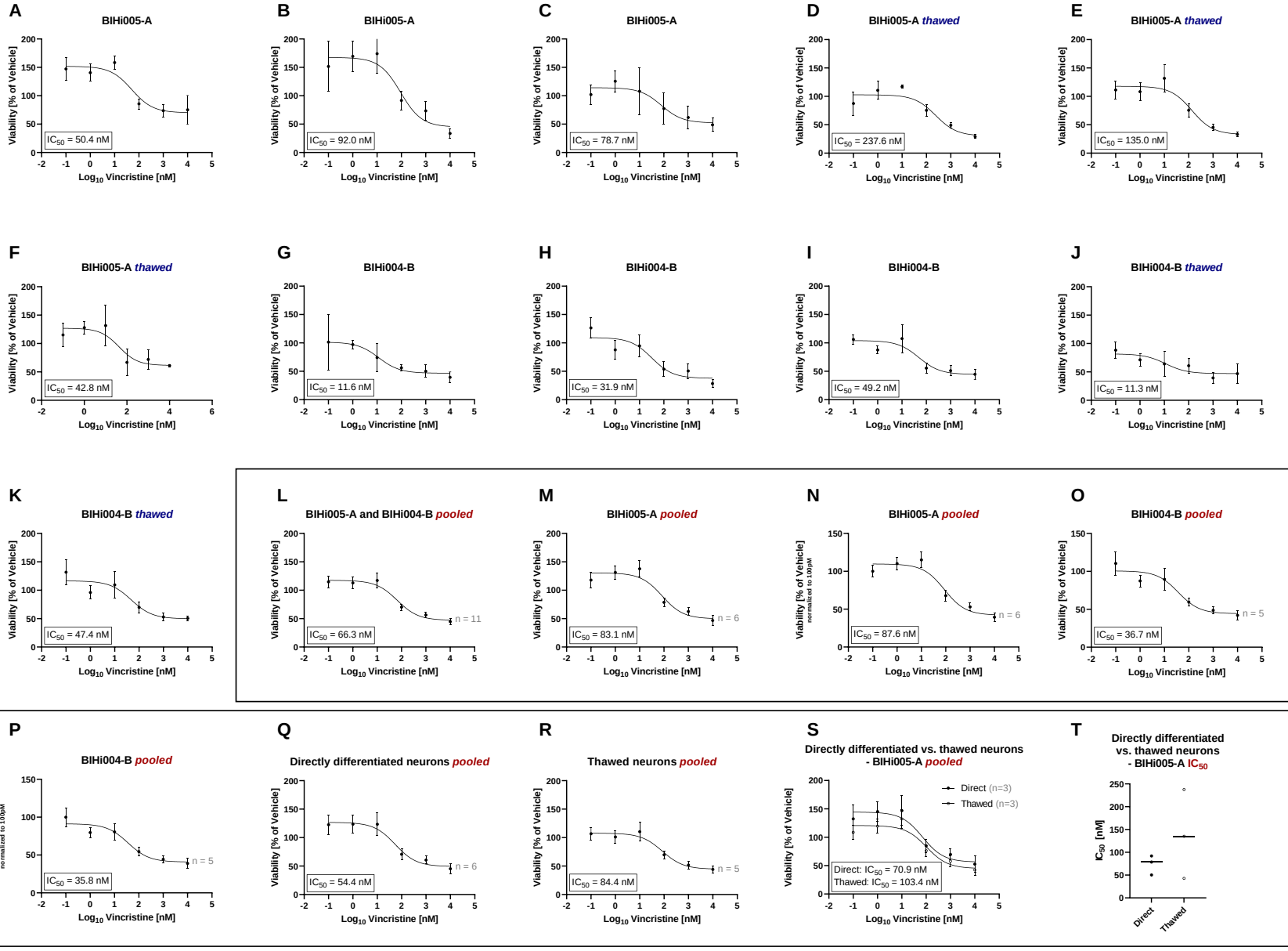
Suppl. Figure 5. Paclitaxel – iPSC-DSN >d40.



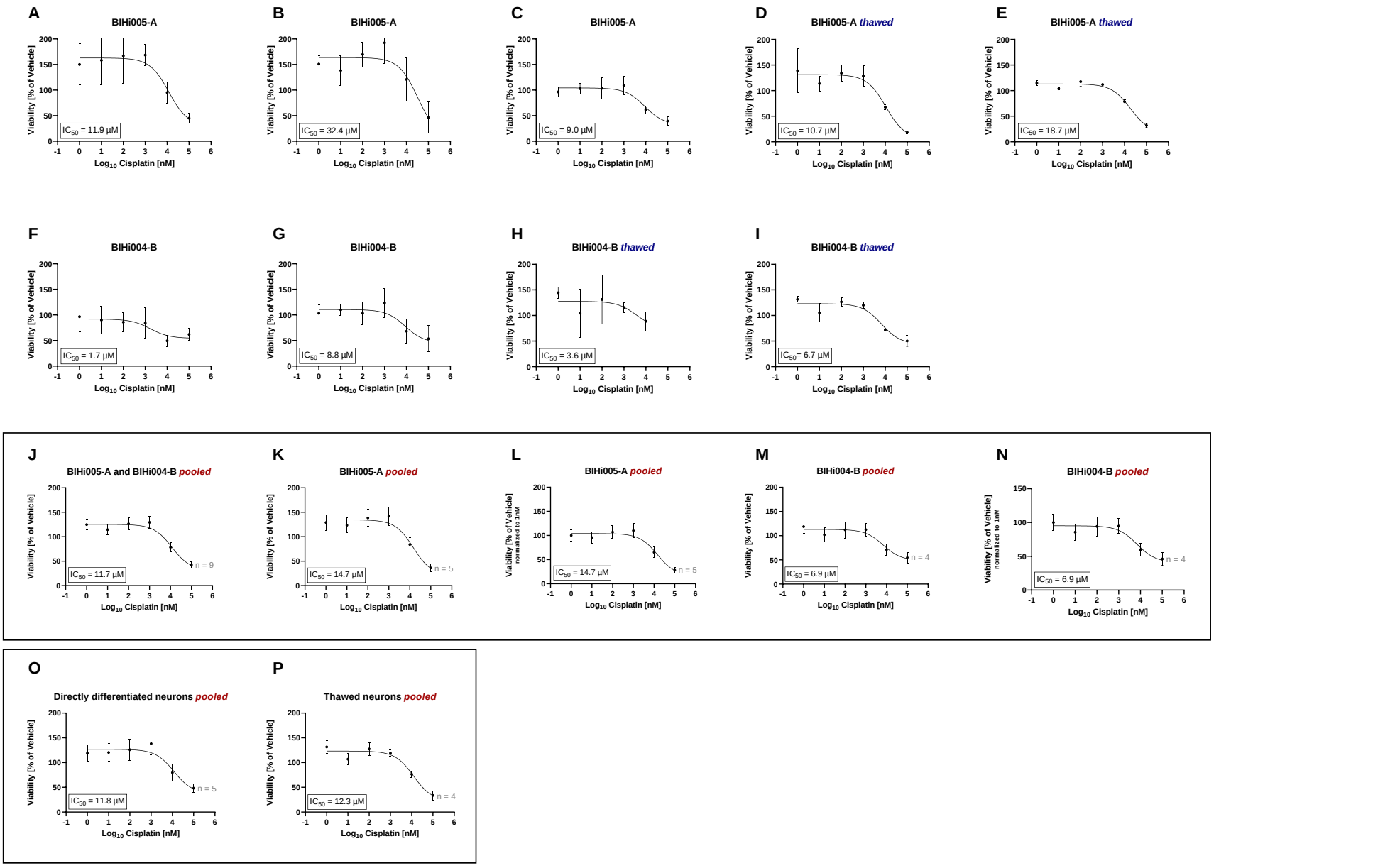
Suppl. Figure 6. Bortezomib – iPSC-DSN >d40.



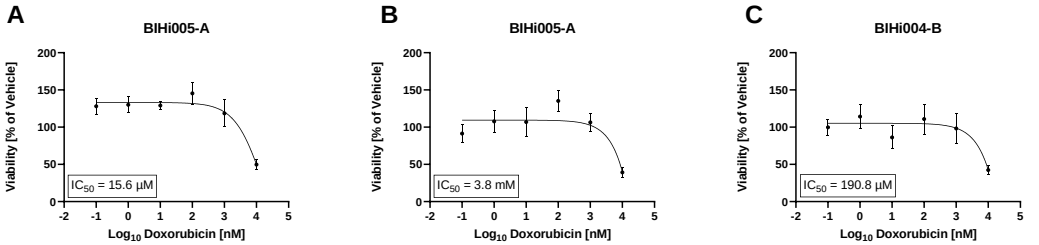
Suppl. Figure 7. Vincristine – iPSC-DSN >d40.

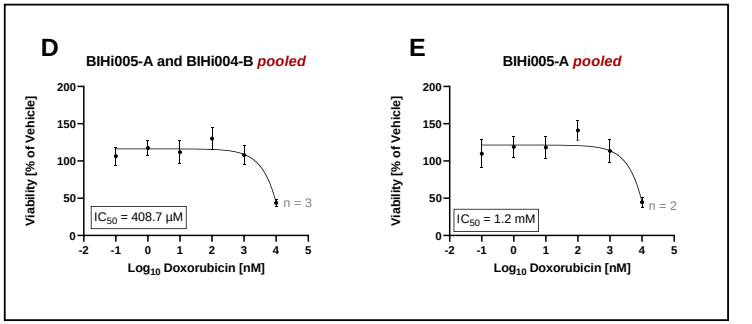


Suppl. Figure 8. Cisplatin – iPSC-DSN >d40.

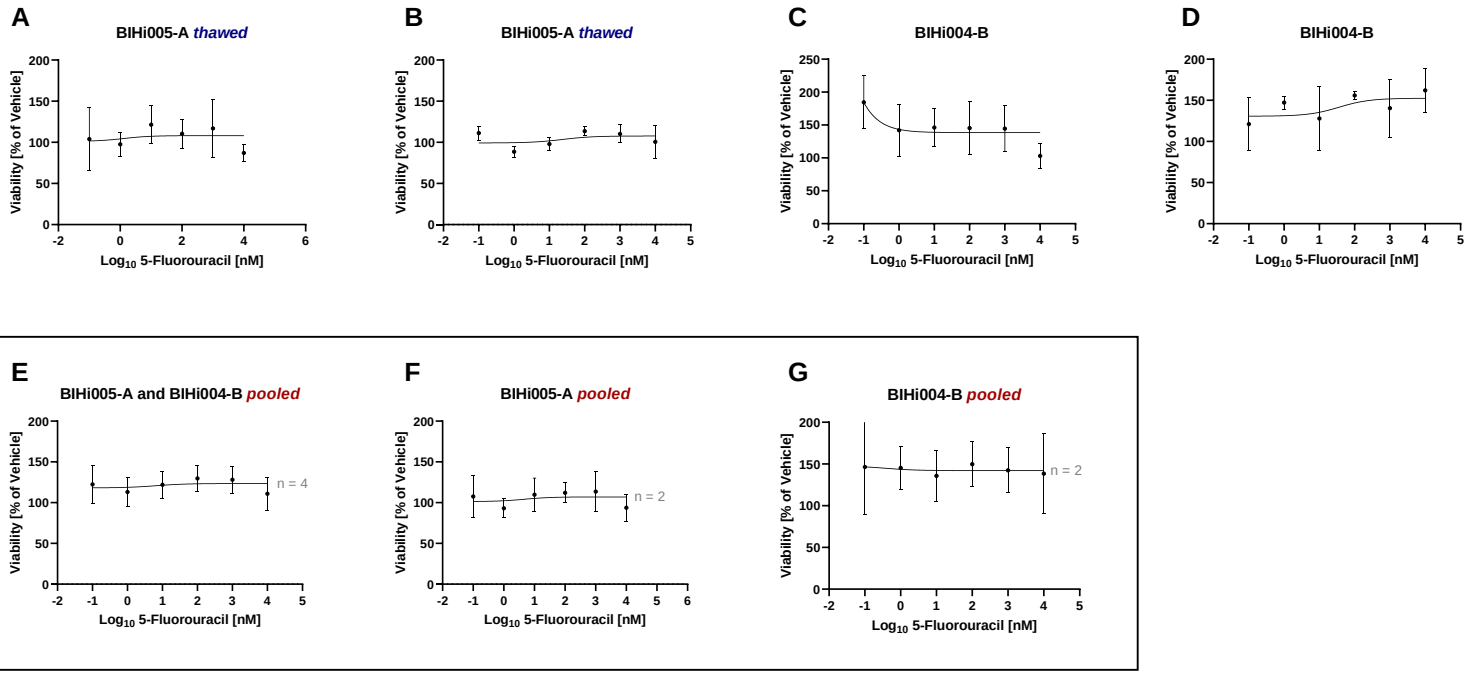


Suppl. Figure 9. Doxorubicin – iPSC-DSN >d40.

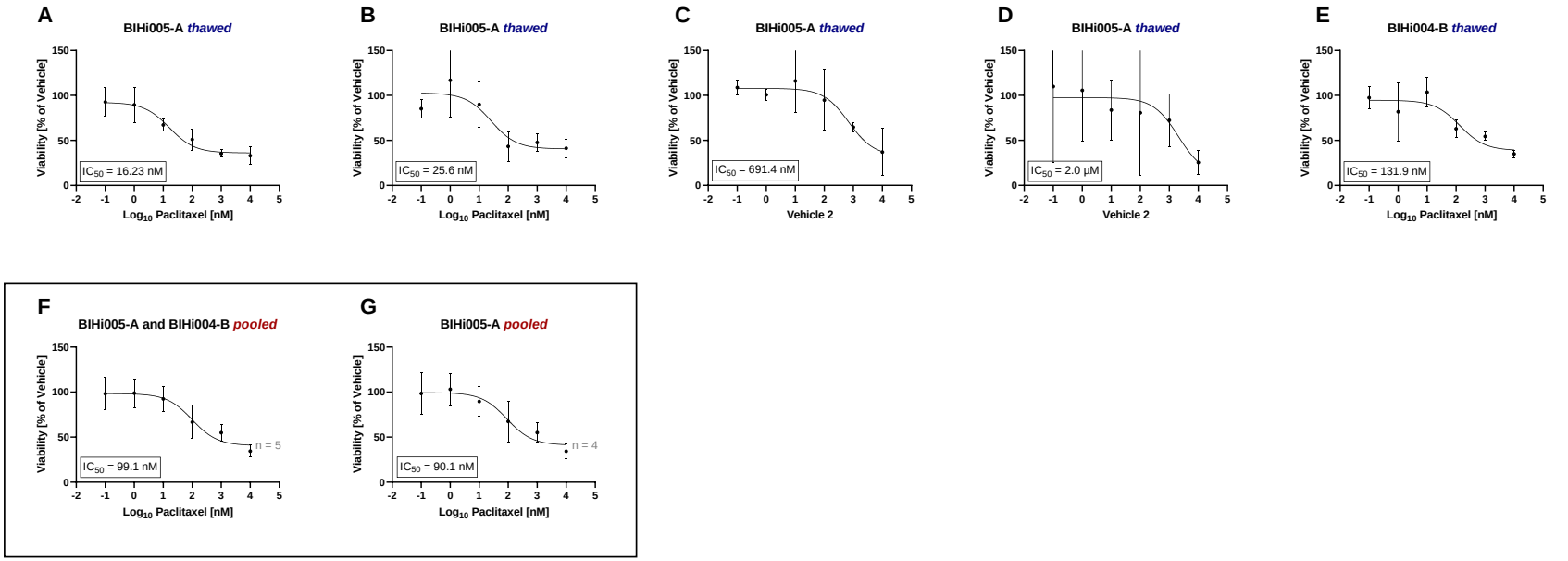




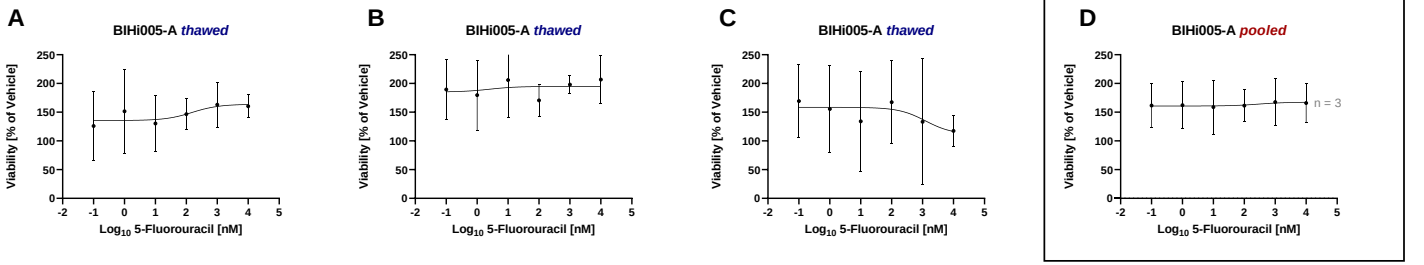
Suppl. Figure 10. 5-Fluorouacil – iPSC-DSN >d40.



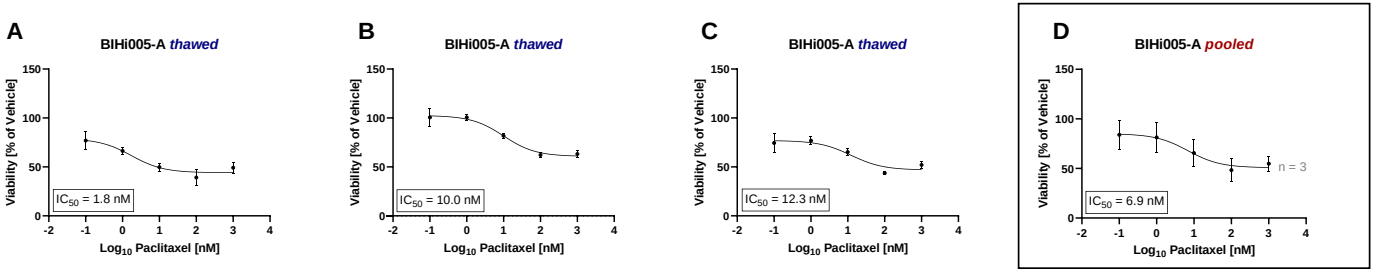
Suppl. Figure 11. Paclitaxel, 72h – iPSC-DSN >d40.



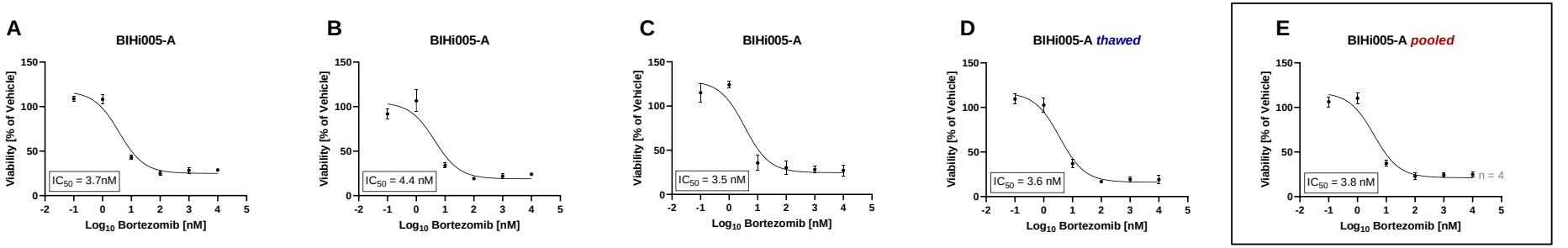
Suppl. Figure 12. 5-Fluoruracil, 72h – iPSC-DSN >d40.



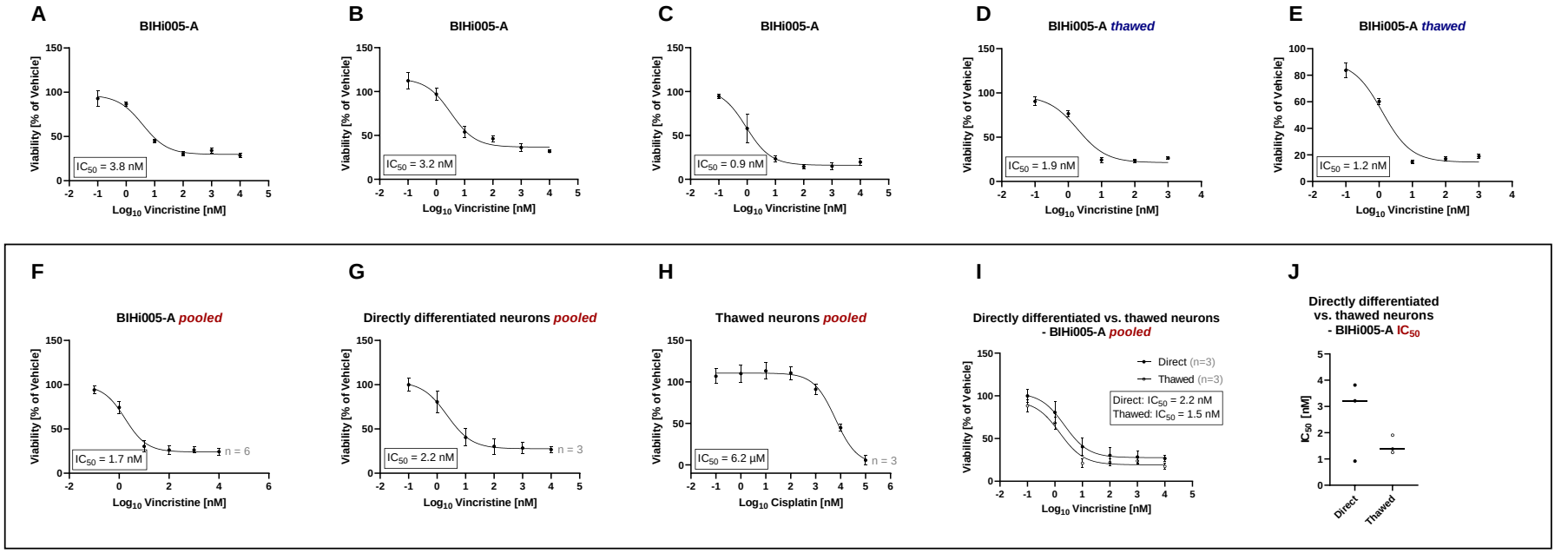
Suppl. Figure 13. Paclitaxel - iPSC-DSN d13.



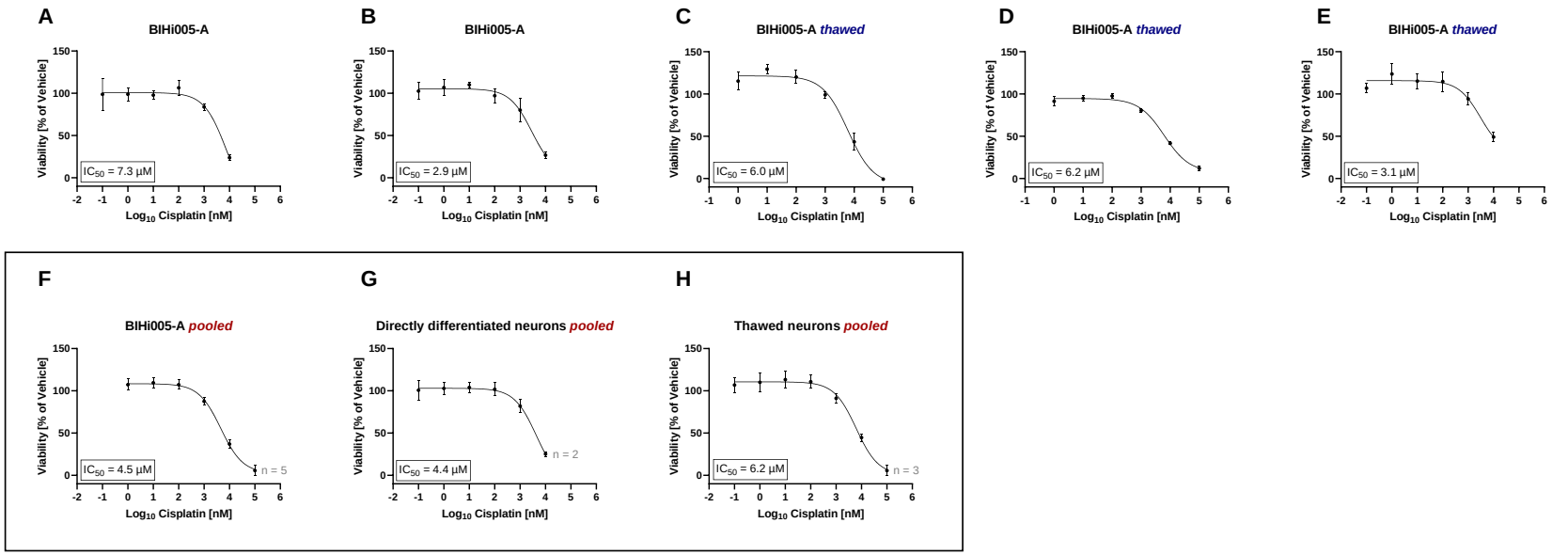
Suppl. Figure 14. Bortezomib - iPSC-DSN d13.



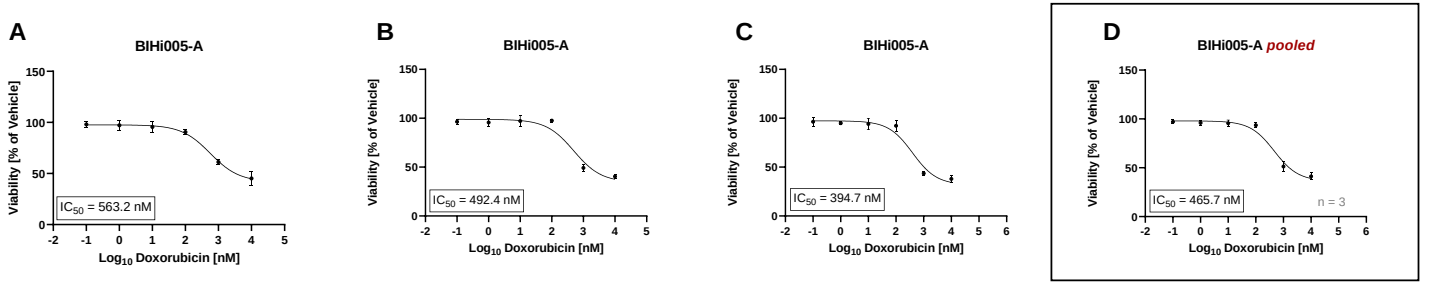
Suppl. Figure 15. Vincristine - iPSC-DSN d13.



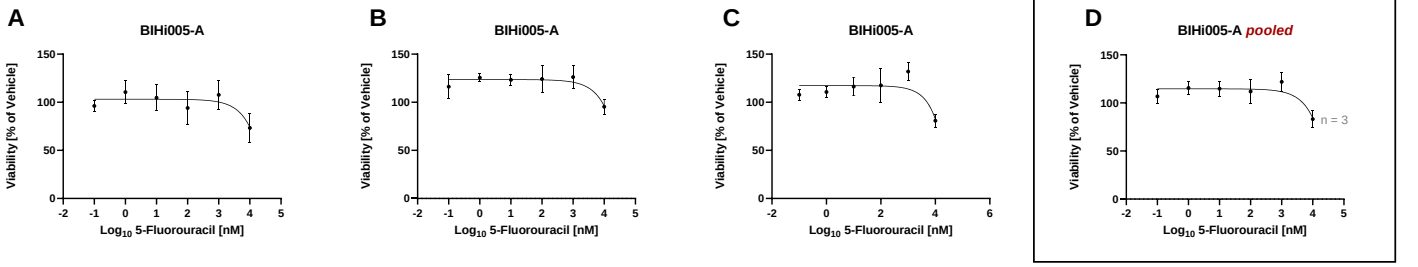
Suppl. Figure 16. Cisplatin - iPSC-DSN d13.



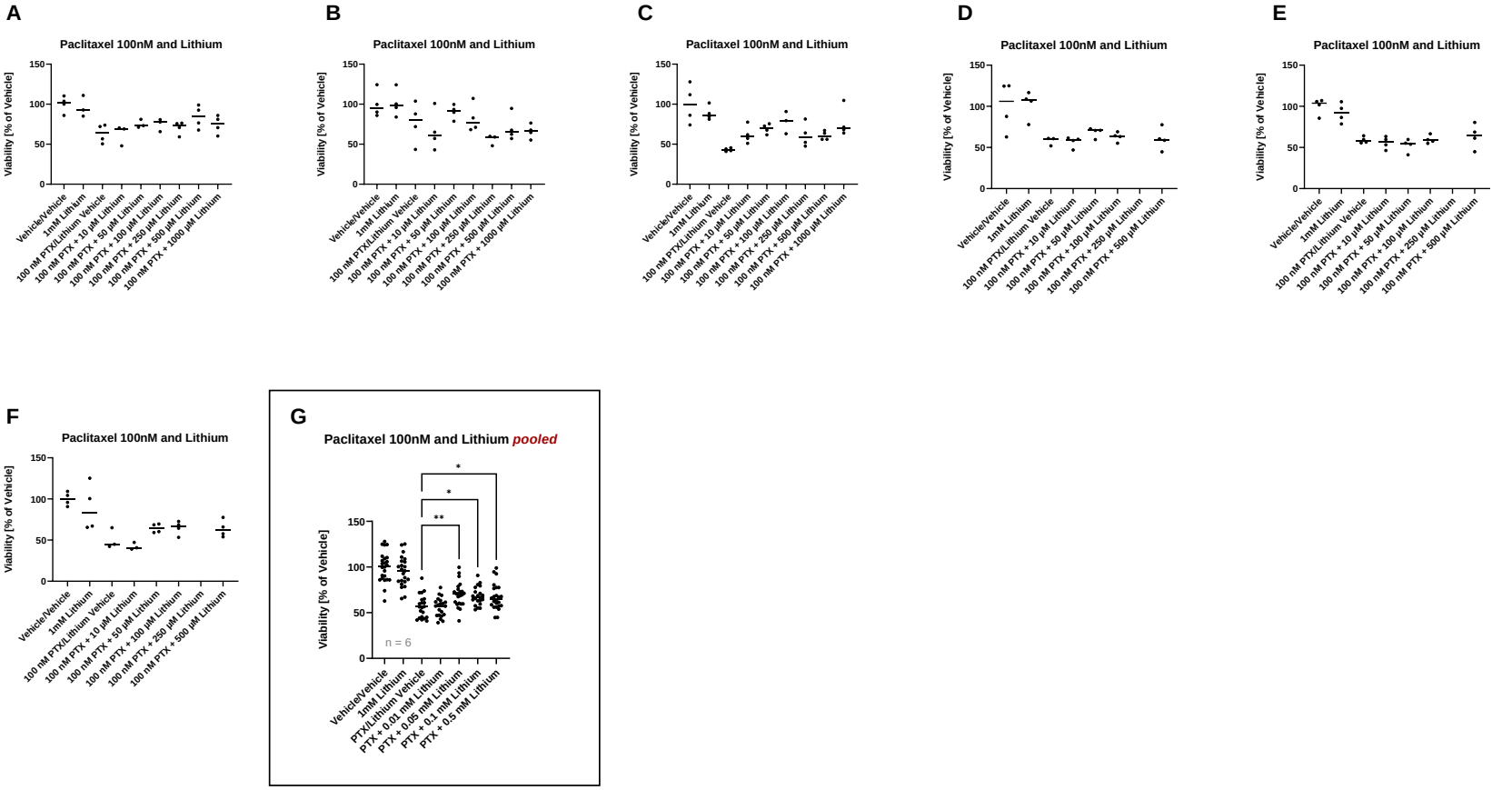
Suppl. Figure 17. Doxorubicin - iPSC-DSN d13.



Suppl. Figure 18. 5-Fluorouracil - iPSC-DSN d13.



Suppl. Figure 19. Evaluation of lithium as potential neuroprotectant against paclitaxel induced neurotoxicity in the iPSC-DSN model (treatment 72h).



Suppl. Figure 20. Transcriptome analyses in iPSC-DSN treated with DMSO 1/6000 vs. paclitaxel 1 µM for 24h.