

Figure 1

Fig. 1a

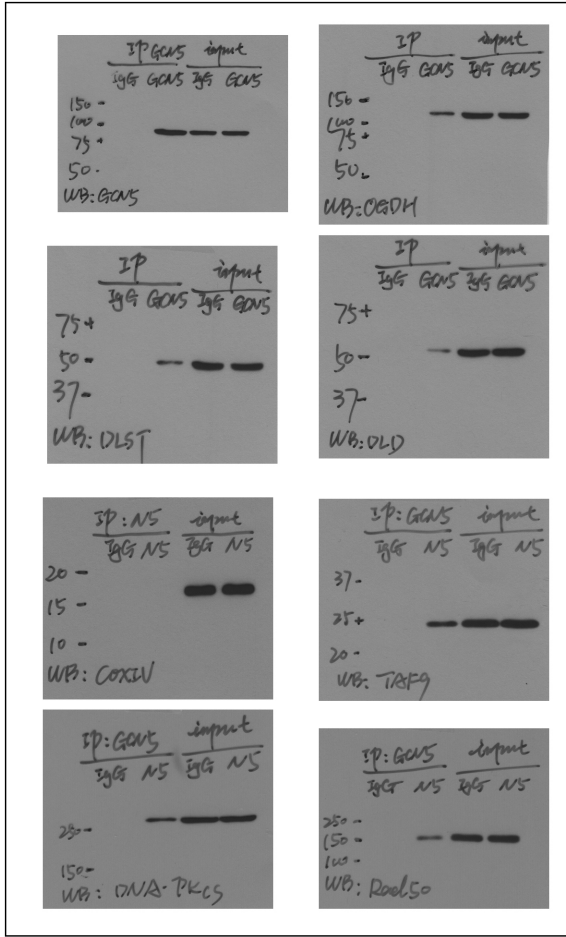


Fig. 1b

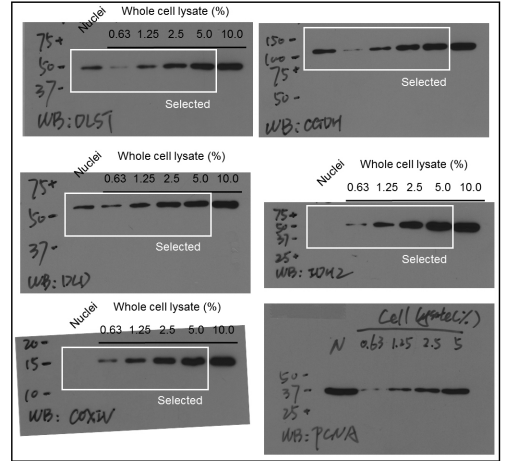


Fig. 1c

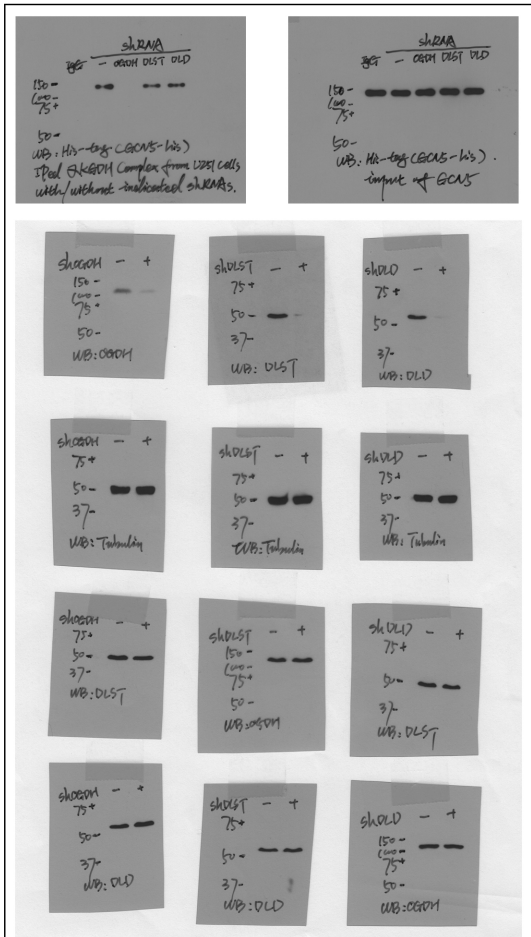


Fig. 1d

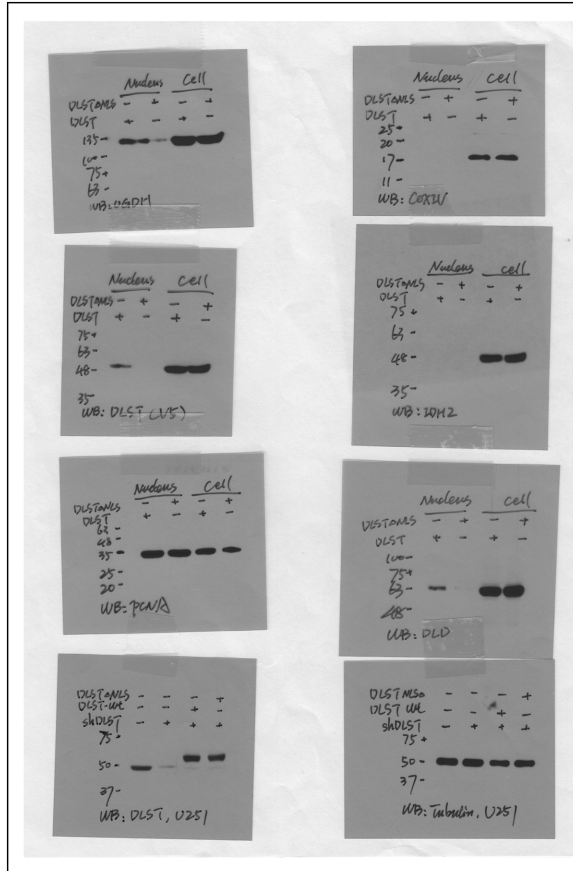


Figure 2

Fig. 2a

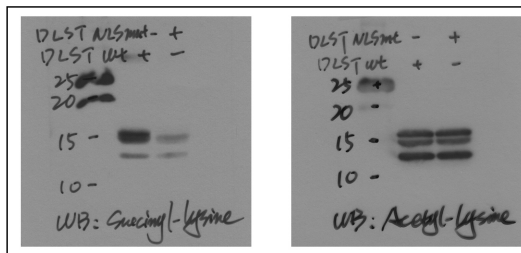


Fig. 2c

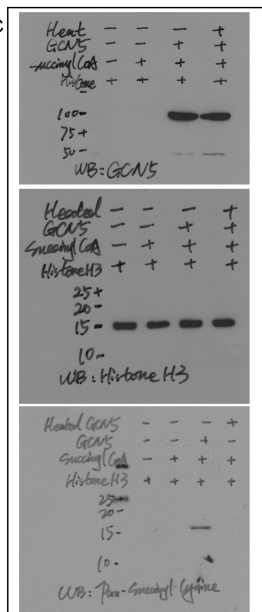


Fig. 2b

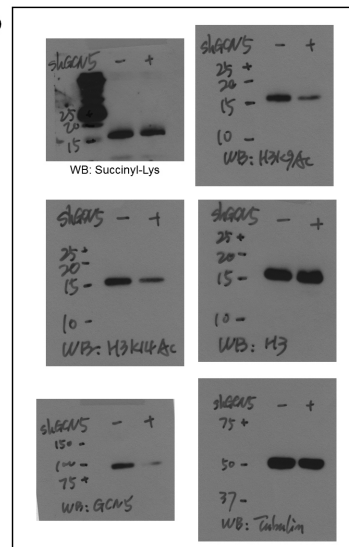


Fig. 2f

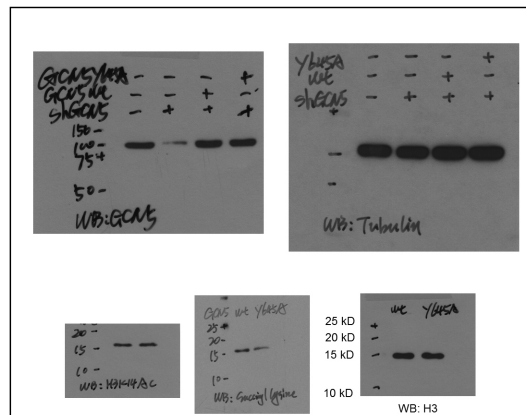


Figure 3

Fig. 3a

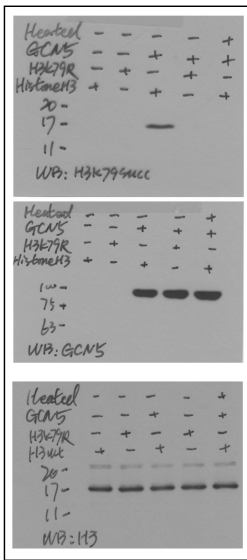


Fig. 3b

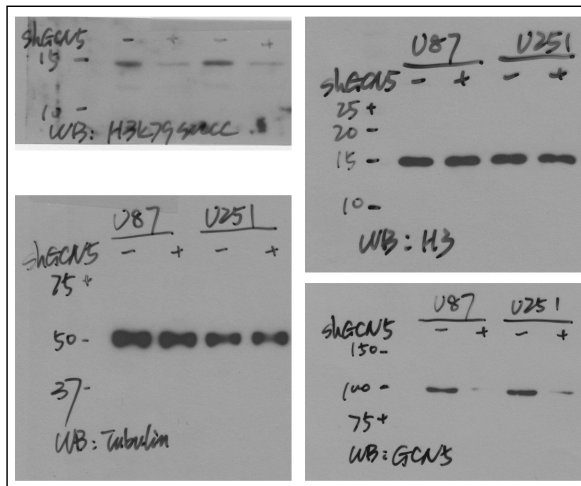
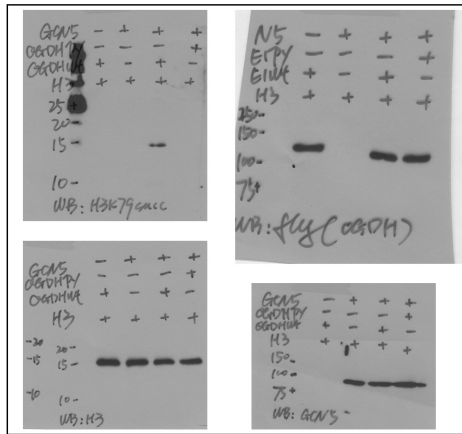


Fig. 3c



E1py, Flag-rOGDH mut
E1wt, WT Flag-rOGDH
OGDHpy, Flag-rOGDH mut
OGDHwt, WT Flag-rOGDH

Fig. 3d

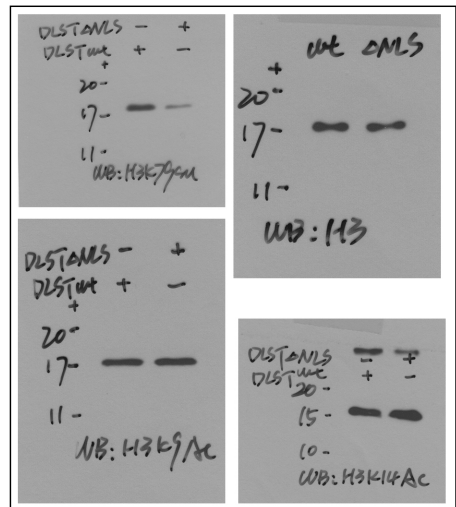


Fig. 3g

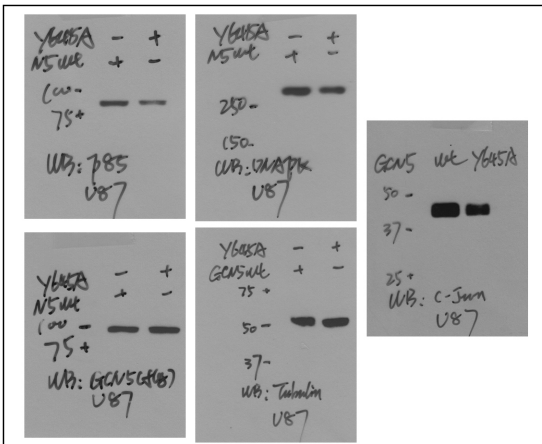
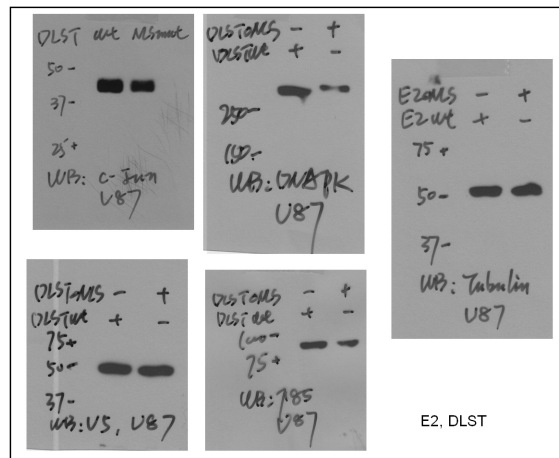


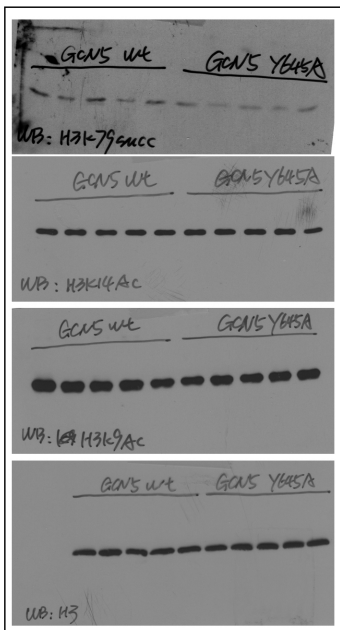
Fig. 3h



E2, DLST

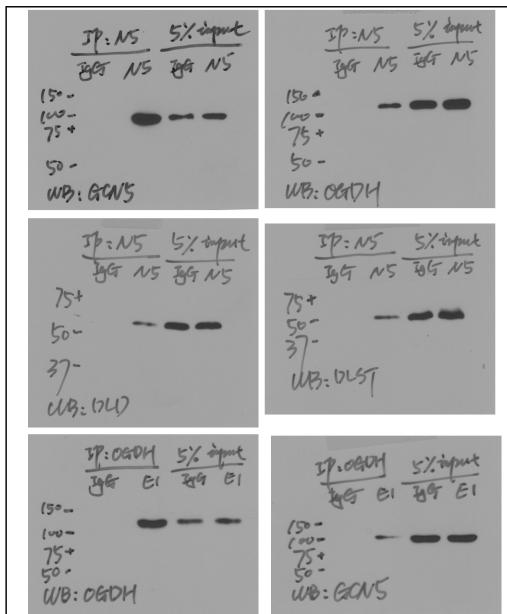
Figure 4

Fig. 4d

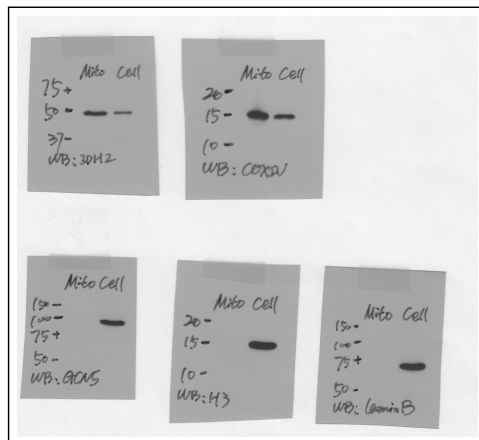


Extended Data figure 1

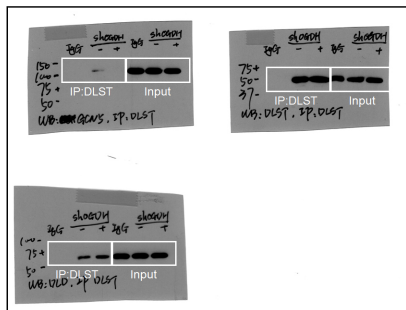
Extended Data Fig. 1d



Extended Data Fig. 1e



Extended Data Fig. 1g

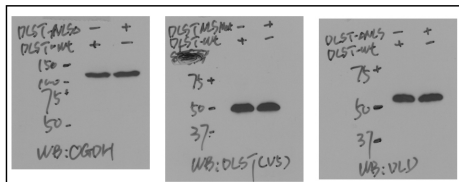


Extended Data Fig. 1i

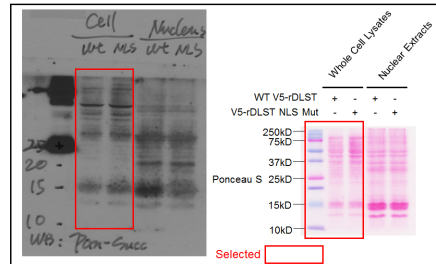


Extended Data Figure 2

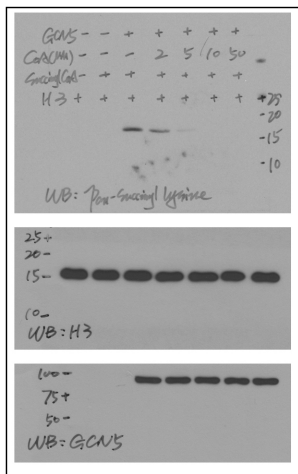
Extended Data Fig. 2a



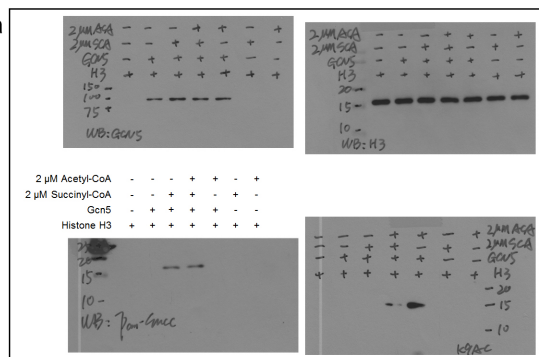
Extended Data Fig. 2c



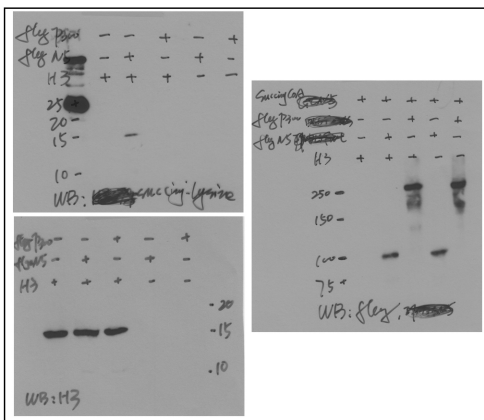
Extended Data Fig. 2e



Extended Data Fig. 2h

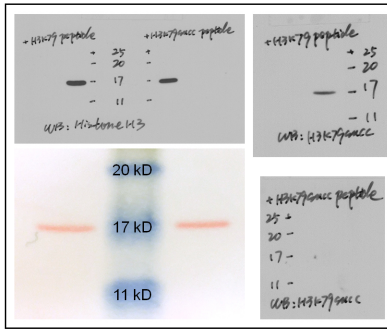


Extended Data Fig. 2i



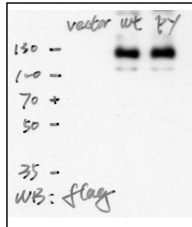
Extended Data Figure 3

Extended Data Fig. 3b

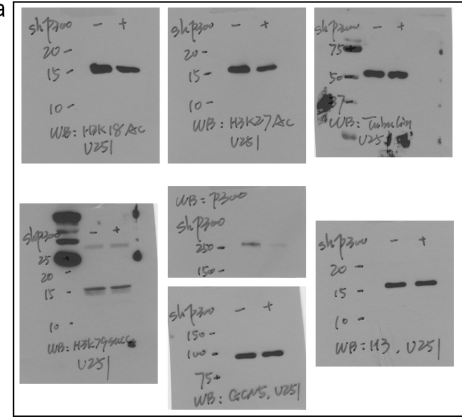


Extended Data Fig. 3g

PY: OGDH mutant



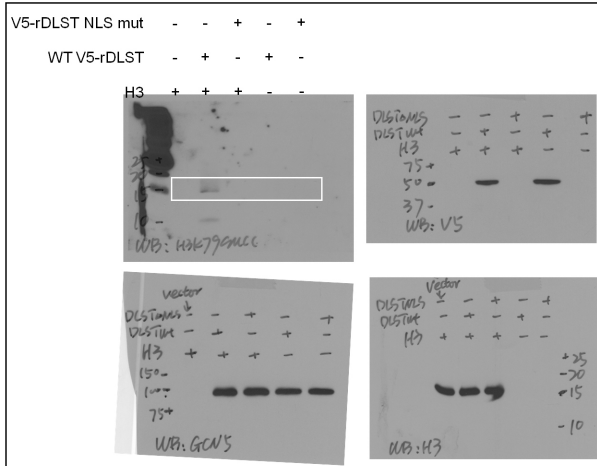
Extended Data Fig. 3e



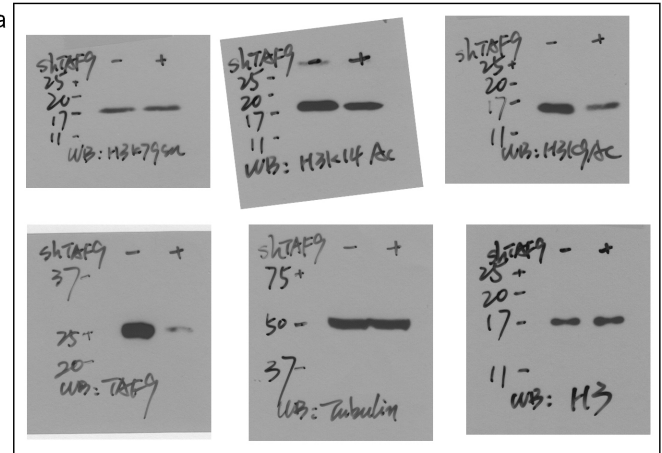
Extended Data Fig. 3h



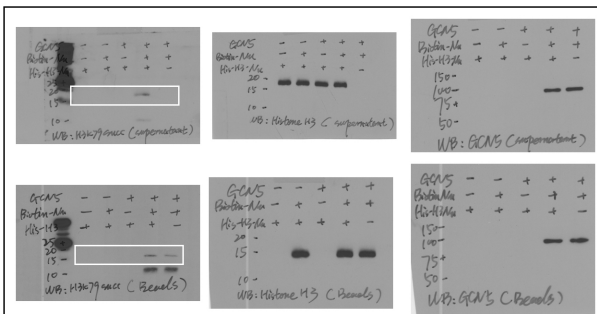
Extended Data Fig. 3i



Extended Data Fig. 3j

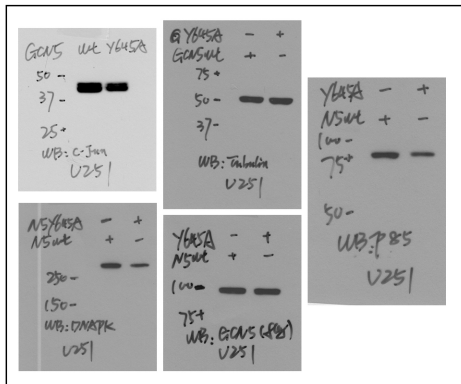


Extended Data Fig. 3m

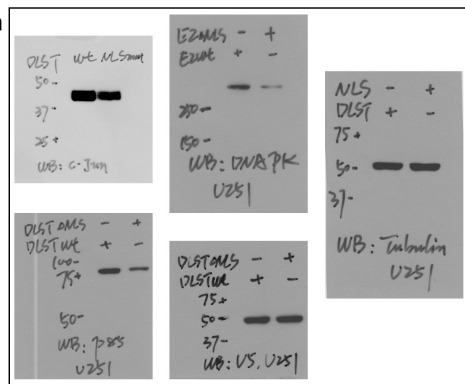


Extended Data figure 5

Extended Data
Fig. 5h

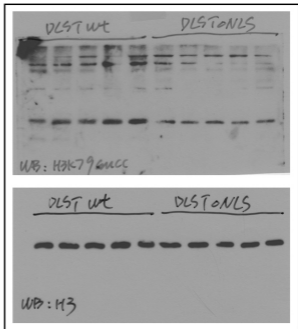


Extended Data
Fig. 5i



Extended Data figure 6

Extended Data
Fig. 6f



U251 cells

	WT V5-rDLST (X10,000)		average	SD	
Day 0	5	5	5	5	0
Day 1	7.8	7.92	7.7	7.806667	0.110151
Day 2	15.6	16.3	14.99	15.63	0.655515
Day 3	32.1	30.1	32.1	31.433333	1.154701
Day 4	69.8	73.2	71.5	71.5	1.7
Day 5	121	122	124	122.3333	1.527525
Day 6	167	169	172	169.3333	2.516611
Day 7	216	234	232	227.3333	9.865766
Day 8	287.7	315	299	300.5667	13.71726
Day 9	306	324	314	314.6667	9.0185

	V5-rDLST NLS Mut (X10,000)		average	SD	
Day 0	5	5	5	5	0
Day 1	7.52	8.68	8.05	8.083333	0.580718
Day 2	12	14.7	13.33	13.34333	1.350049
Day 3	30	31.9	32.1	31.33333	1.159023
Day 4	59.2	65.6	61.1	61.96667	3.286842
Day 5	101	105	100	102	2.645751
Day 6	110	152	133	131.6667	21.03172
Day 7	166	147	151	154.6667	10.01665
Day 8	181	180	189	183.3333	4.932883
Day 9	181	199	192	190.6667	9.073772

	WT Flag-rGcn5 (X10,000)		Average	SD	
Day 0	5	5	5	5	0
Day 1	6.8	7.2	7.7	7.233333	0.450925
Day 2	13.4	15.5	16.8	15.23333	1.715615
Day 3	33	34.5	33.6	33.7	0.754983
Day 4	75.1	77.9	80.1	77.7	2.505993
Day 5	133	146	152	143.6667	9.712535
Day 6	212	192	222	208.6667	15.27525
Day 7	277	268	288	277.6667	10.01665
Day 8	320	333	342	331.6667	11.06044
Day 9	333	353	335	340.3333	11.01514

	Flag-rGcn5 Y645 (X10,000)		Average	SD	
Day 0	5	5	5	5	0
Day 1	6.6	6.9	5.8	6.433333	0.568624
Day 2	13.6	14.2	11.1	12.96667	1.644182
Day 3	29.2	33.5	28.5	30.4	2.707397
Day 4	68.3	58	62.5	62.93333	5.163655
Day 5	95	109	100	101.3333	7.094599
Day 6	152	123	132	135.6667	14.84363
Day 7	172	146	166	161.3333	13.61372
Day 8	196	211	168	191.6667	21.82506

Day 9	229	234	201	221.3333	17.78576
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U87 cells

	WT V5-rDLST (X10,000)		average SD		
Day 0	5	5	5	5	0
Day 1	4.55	5.71	5.22	5.16	0.582323
Day 2	8.68	7.74	8.21	8.21	0.47
Day 3	20.1	21	21	20.7	0.519615
Day 4	51.1	48.6	50.2	49.96667	1.266228
Day 5	77.3	81.4	77.9	78.86667	2.214347
Day 6	104	111	108	107.6667	3.511885
Day 7	123	135	132	130	6.244998
Day 8	135	142	139	138.6667	3.511885
Day 9	139	149	145	144.3333	5.033223

	V5-rDLST NLS Mut (X10,000)		average SD		
Day 0	5	5	5	5	0
Day 1	4.98	5.01	5.11	5.033333	0.068069
Day 2	7.78	6.36	7.21	7.116667	0.714586
Day 3	17.3	16	16.8	16.7	0.655744
Day 4	35.1	39.2	37.2	37.16667	2.050203
Day 5	55.5	51	54	53.5	2.291288
Day 6	70.3	77.7	74	74	3.7
Day 7	88	81.7	86.1	85.26667	3.231615
Day 8	85.3	91.1	89	88.46667	2.936551
Day 9	93.6	90	92.2	91.93333	1.814754

	WT Flag-rGcn5 (X10,000)		Average SD		
Day 0	5	5	5	5	0
Day 1	6.6	6.1	6.2	6.3	0.264575
Day 2	8.5	9.1	10	9.2	0.754983
Day 3	19.8	20	23	20.93333	1.792577
Day 4	46	52	51	49.66667	3.21455
Day 5	88	82	83	84.33333	3.21455
Day 6	111	120	135	122	12.12436
Day 7	144	144	152	146.6667	4.618802
Day 8	177	177	152	168.6667	14.43376
Day 9	200	165	172	179	18.52026

	Flag-rGcn5 Y645 (X10,000)		Average SD		
Day 0	5	5	5	5	0
Day 1	5.8	6.6	6.1	6.166667	0.404145
Day 2	8.4	7.8	7.5	7.9	0.458258
Day 3	16.5	17.8	16.9	17.06667	0.665833
Day 4	41.5	39.2	33	37.9	4.39659
Day 5	69	58	62	63	5.567764
Day 6	73	76	86	78.33333	6.806859

Day 7	101	98	88	95.66667	6.806859
Day 8	110	109	89	102.6667	11.84624
Day 9	126	120	101	115.6667	13.05118