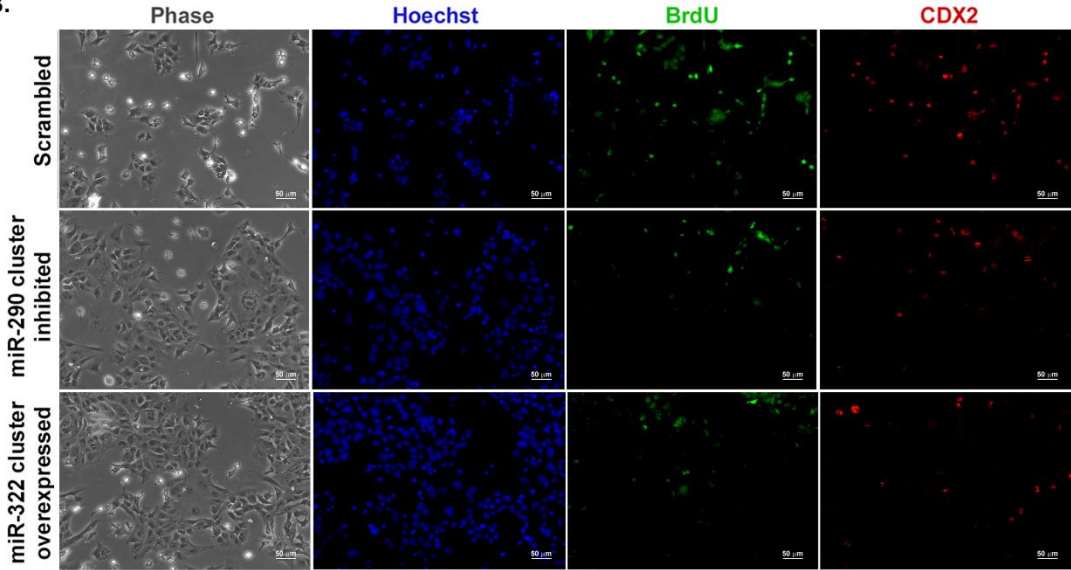


A.

BrdU Incorporation Assay								
5000 cells	Replicate 1		Replicate 2		Replicate 3		Replicate 4	
	Mean OD	Rel. incorporation	Mean OD	Rel. incorporation	Mean OD	Rel. incorporation	Mean OD	Rel. incorporation
Scrambled	1.956	1.000	1.693	1.000	1.743	1.000	1.874	1.000
miR-290 cluster inhibited	0.403	0.206	1.045	0.617	1.036	0.594	1.054	0.562
miR-322 cluster overexpressed	1.118	0.572	0.993	0.587	0.367	0.211	1.023	0.546

10000 cells	Replicate 1		Replicate 2		Replicate 3		Replicate 4	
	Mean OD	Rel. incorporation	Mean OD	Rel. incorporation	Mean OD	Rel. incorporation	Mean OD	Rel. incorporation
Scrambled	1.981	1.000	2.24	1.000	2.432	1.000	2.299	1.000
miR-290 cluster inhibited	1.1	0.555	1.086	0.485	0.374	0.154	1.265	0.550
miR-322 cluster overexpressed	0.703	0.355	0.854	0.381	0.783	0.322	0.745	0.324

B.



D.

Source data Figure 4

Replicate 1							
	Cdx2	Ct mean	Rpl7	Ct mean	Δ Ct	$\Delta\Delta$ Ct	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	21.93 21.83 21.94	21.90	15.9 15.81 15.96	15.89	6.01	0.00	1.00
290-cluster inhibited	22.9 23.06 23.34	23.10	15.76 15.74 15.86	15.79	7.31	1.30	0.41
Replicate 2							
	Cdx2	Ct mean	Rpl7	Ct mean	Δ Ct	$\Delta\Delta$ Ct	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	21.43 21.48 21.56	21.49	15.26 15.18 15.12	15.19	6.30	0.00	1.00
290-cluster inhibited	23.86 23.82 23.90	23.86	15.99 15.98 15.98	15.98	7.88	1.57	0.34
Replicate 3							
	Cdx2	Ct mean	Rpl7	Ct mean	Δ Ct	$\Delta\Delta$ Ct	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	22.21 22 22.37	22.19	15.2 15.2 15.19	15.21	6.99	0.00	1.00
290-cluster inhibited	24.02 24.26 24.32	24.20	14.75 15.06 15.12	14.98	9.22	2.24	0.21

Replicate 1							
	Eomes	Ct mean	Rpl7	Ct mean	Δ Ct	$\Delta\Delta$ Ct	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	19.97 19.74 20.36	20.02	15.92 15.83 15.8	15.85	4.17	0.00	1.00
290-cluster inhibited	21.1 21.92 21.93	21.65	15.85 15.97 15.87	15.90	5.75	1.58	0.33
Replicate 2							
	Eomes	Ct mean	Rpl7	Ct mean	Δ Ct	$\Delta\Delta$ Ct	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	20.12 20.18 20.24	20.18	14.84 14.98 15.44	15.09	5.09	0.00	1.00
290-cluster inhibited	22.78 22.69 22.63	22.70	15.78 15.72 15.78	15.76	6.94	1.85	0.28
Replicate 3							
	Eomes	Ct mean	Rpl7	Ct mean	Δ Ct	$\Delta\Delta$ Ct	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	21.34 21.28 21.26	21.29	15.28 15.26 15.22	15.25	6.04	0.00	1.00
290-cluster inhibited	23.97 24.01 23.99	23.99	15.73 15.77 15.69	15.73	8.26	2.22	0.21

Replicate 1							
	Esrrb	Ct mean	Rpl7	Ct mean	Δ Ct	$\Delta\Delta$ Ct	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	21.82 21.54 21.87	21.74	14.88 14.85 14.92	14.88	6.86	0.00	1.00
290-cluster inhibited	23.97 24.06 24.32	24.12	15.55 15.74 15.59	15.63	8.49	1.63	0.32
Replicate 2							
	Esrrb	Ct mean	Rpl7	Ct mean	Δ Ct	$\Delta\Delta$ Ct	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	22.75 22.78 21.86	22.46	15.62 15.78 15.64	15.68	6.78	0.00	1.00
290-cluster inhibited	23.72 23.68 23.6	23.67	15.94 15.99 15.98	15.97	7.70	0.91	0.53
Replicate 3							
	Esrrb	Ct mean	Rpl7	Ct mean	Δ Ct	$\Delta\Delta$ Ct	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	21.36 21.45 21.47	21.43	15.88 15.83 15.76	15.82	5.60	0.00	1.00
290-cluster inhibited	23.91 23.98 23.01	23.63	15.65 15.69 15.58	15.64	7.99	2.39	0.19

Replicate 1							
	Pif	Ct mean	Rpl7	Ct mean	Δ Ct	$\Delta\Delta$ Ct	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	23.69 23.6 23.79	23.69	15.57 15.56 15.58	15.57	8.12	0.00	1.00
290-cluster inhibited	22.92 22.87 22.95	22.91	15.8 15.78 15.94	15.84	7.07	-1.05	2.07
Replicate 2							
	Pif	Ct mean	Rpl7	Ct mean	Δ Ct	$\Delta\Delta$ Ct	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	23.12 23.17 23.04	23.11	15.77 15.81 15.76	15.78	7.33	0.00	1.00
290-cluster inhibited	22.56 22.69 22.32	22.52	16.14 16.22 16.25	16.20	6.32	-1.01	2.01
Replicate 3							
	Pif	Ct mean	Rpl7	Ct mean	Δ Ct	$\Delta\Delta$ Ct	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	24.76 24.79 24.68	24.74	15.23 15.2 15.19	15.21	9.54	0.00	1.00
290-cluster inhibited	23.91 23.96 24.04	23.97	15.99 16.18 16.01	16.06	7.91	-1.63	3.09

Replicate 1							
	Pl1	Ct mean	Rpl7	Ct mean	Δ Ct	$\Delta\Delta$ Ct	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	25.1 24.97 25.22	25.10	14.94 14.94 14.92	14.93	10.16	0.00	1.00
290-cluster inhibited	21.91 22.06 21.94	21.97	14.73 14.53 14.74	14.67	7.30	-2.86	7.26
Replicate 2							
	Pl1	Ct mean	Rpl7	Ct mean	Δ Ct	$\Delta\Delta$ Ct	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	25.43 25.54 25.38	25.45	14.54 14.57 14.62	14.58	10.87	0.00	1.00
290-cluster inhibited	22.90 22.88 22.87	22.88	15.12 15.18 15.08	15.13	7.76	-3.12	8.67
Replicate 3							
	Pl1	Ct mean	Rpl7	Ct mean	Δ Ct	$\Delta\Delta$ Ct	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	24.87 24.85 24.79	24.84	15.14 15.22 15.26	15.21	9.63	0.00	1.00
290-cluster inhibited	22.97 23.07 22.99	23.01	15.78 15.83 15.92	15.84	7.17	-2.46	5.51

E.

Source data Figure 4

Replicate 1							
	Cdx2	Ct mean	Rpl7	Ct mean	ΔCt	$\Delta\Delta Ct$	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	21.95 21.73 21.94	21.87	15.62 15.78 15.5	15.63	6.24	0.00	1.00
322-cluster overexpressed	27.44 27.3 27.56	27.43	15.28 15.96 15.56	15.60	11.83	5.59	0.02
Replicate 2							
	Cdx2	Ct mean	Rpl7	Ct mean	ΔCt	$\Delta\Delta Ct$	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	21.86 21.88 21.82	21.85	14.54 14.57 14.62	14.58	7.28	0.00	1.00
322-cluster overexpressed	27.63 27.58 27.59	27.60	15.12 15.18 15.08	15.13	12.47	5.20	0.03
Replicate 3							
	Cdx2	Ct mean	Rpl7	Ct mean	ΔCt	$\Delta\Delta Ct$	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	21.15 21.27 21.17	21.20	16.29 16.34 16.17	16.27	4.93	0.00	1.00
322-cluster overexpressed	22.97 23.07 22.99	23.01	15.98 15.95 15.87	15.93	7.08	2.15	0.23

Replicate 1							
	Eomes	Ct mean	Rpl7	Ct mean	ΔCt	$\Delta\Delta Ct$	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	20.68 20.72 20.96	20.79	16.6 16.47 16.97	16.68	4.11	0.00	1.00
322-cluster overexpressed	23.75 23.71 23.87	23.78	16.56 16.6 16.83	16.66	7.11	3.01	0.12
Replicate 2							
	Eomes	Ct mean	Rpl7	Ct mean	ΔCt	$\Delta\Delta Ct$	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	21.22 21.18 21.16	21.19	15.29 15.33 15.56	15.39	5.79	0.00	1.00
322-cluster overexpressed	23.90 23.97 23.88	23.92	15.42 15.50 15.18	15.37	8.55	2.76	0.15
Replicate 3							
	Eomes	Ct mean	Rpl7	Ct mean	ΔCt	$\Delta\Delta Ct$	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	21.17 21.25 21.34	21.25	15.78 15.56 15.69	15.68	5.58	0.00	1.00
322-cluster overexpressed	23.06 23.15 23.25	23.15	15.21 15.34 15.36	15.30	7.85	2.27	0.21

Replicate 1							
	Esrrb	Ct mean	Rpl7	Ct mean	ΔCt	$\Delta\Delta Ct$	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	22.82 22.97 23.02	22.94	15.67 15.7 15.97	15.78	7.16	0.00	1.00
322-cluster overexpressed	27.94 27.74 27.93	27.87	15.6 15.76 15.67	15.68	12.19	5.04	0.03
Replicate 2							
	Esrrb	Ct mean	Rpl7	Ct mean	ΔCt	$\Delta\Delta Ct$	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	21.76 21.77 21.58	21.70	15.91 15.99 15.87	15.92	5.78	0.00	1.00
322-cluster overexpressed	24.02 24.12 24.00	24.05	15.23 15.18 16.08	15.50	8.55	2.77	0.15
Replicate 3							
	Esrrb	Ct mean	Rpl7	Ct mean	ΔCt	$\Delta\Delta Ct$	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	22.66 22.54 22.59	22.60	16.05 16.04 15.99	16.03	6.57	0.00	1.00
322-cluster overexpressed	26.87 26.95 26.92	26.91	15.79 15.53 15.73	15.68	11.23	4.66	0.04

Replicate 1							
	Pif	Ct mean	Rpl7	Ct mean	ΔCt	$\Delta\Delta Ct$	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	23.58 23.63 23.91	23.71	14.92 14.96 15.04	14.97	8.73	0.00	1.00
322-cluster overexpressed	19.94 20.31 20.48	20.24	14.91 14.97 14.91	14.93	5.31	-3.42	10.70
Replicate 2							
	Pif	Ct mean	Rpl7	Ct mean	ΔCt	$\Delta\Delta Ct$	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	22.86 22.78 22.82	22.82	15.63 15.57 15.48	15.56	7.26	0.00	1.00
322-cluster overexpressed	18.97 19.12 19.26	19.12	15.82 15.74 15.51	15.69	3.43	-3.83	14.25
Replicate 3							
	Pif	Ct mean	Rpl7	Ct mean	ΔCt	$\Delta\Delta Ct$	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	23.7 23.58 23.59	23.62	15.34 15.47 15.39	15.40	8.22	0.00	1.00
322-cluster overexpressed	20.22 20.37 21.17	20.59	15.92 15.73 15.88	15.84	4.74	-3.48	11.16

Replicate 1							
	Pl1	Ct mean	Rpl7	Ct mean	ΔCt	$\Delta\Delta Ct$	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	25.07 24.6 24.72	24.80	15.78 15.97 15.97	15.91	8.89	0.00	1.00
322-cluster overexpressed	21.12 21.3 21.16	21.19	15.94 15.79 15.97	15.90	5.29	-3.60	12.10
Replicate 2							
	Pl1	Ct mean	Rpl7	Ct mean	ΔCt	$\Delta\Delta Ct$	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	24.42 24.58 24.73	24.58	15.52 15.59 15.63	15.58	9.00	0.00	1.00
322-cluster overexpressed	21.95 22.02 22.29	22.09	16.26 16.38 16.52	16.39	5.70	-3.30	9.83
Replicate 3							
	Pl1	Ct mean	Rpl7	Ct mean	ΔCt	$\Delta\Delta Ct$	RQ ($2^{-\Delta\Delta Ct}$)
Scrambled	23.89 23.71 23.96	23.85	15.74 15.83 15.87	15.81	8.04	0.00	1.00
322-cluster overexpressed	19.89 19.75 19.78	19.81	16.01 15.99 15.82	15.94	3.87	-4.17	18.04

F.

For Figure 4F. CDX2, PLF and RPL7

