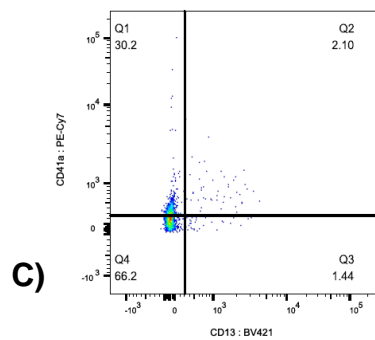
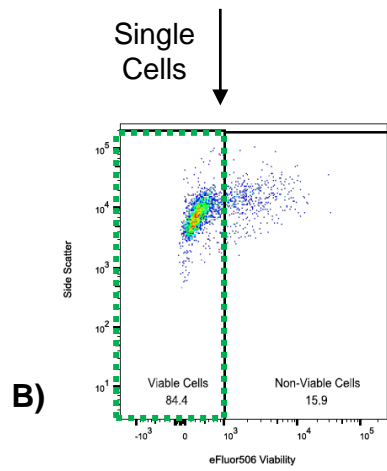
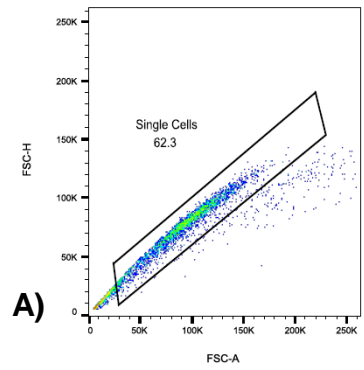
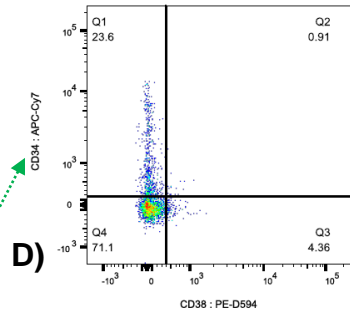


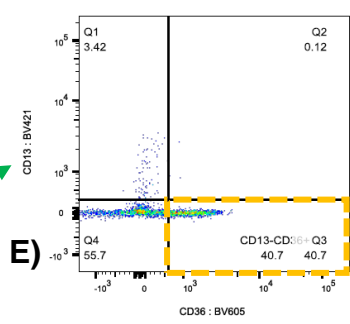
Supplementary Figure 1



Subset Name	
Q1:	CD13-, CD41a+ Platelets

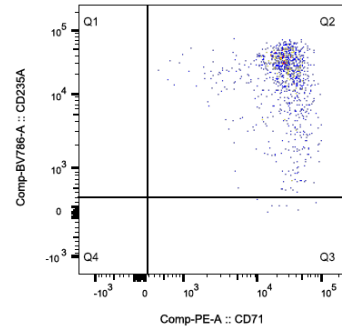


Subset Name	
Q1:	CD38-, CD34+ Long Term HSCs
Q2:	CD38+, CD34+ Lineage Differentiated

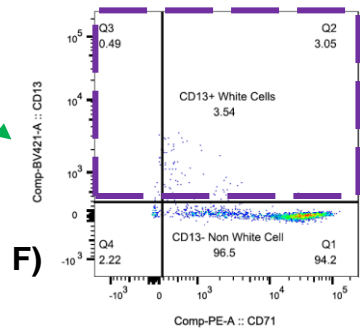


Subset Name	
Q2:	CD36+ CD13+ Later Monocytes
Q3:	CD36+, CD13- Erythroid

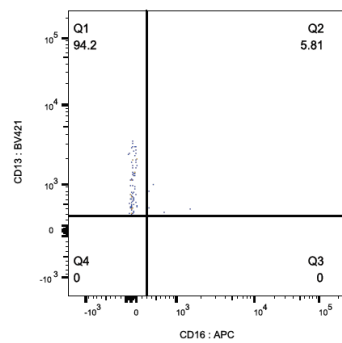
Erythroid Cells



Subset Name	
Q2:	CD71+, CD235A+ Erythroid
Q3:	CD71+, CD235A- Erythroid



White Cells



Subset Name	
Q1:	CD16-, CD13+ Early Myeloid
Q2:	CD16+, CD13+ Later Granulocytes

Viable Cells

Supplementary Figure 2

A

	Circuit	
	LHS	RHS
Treatment	-	-
Circuit #	1	2
Control Unit	23	23
Treatment	Dose 2	Dose 1
Circuit #	3	4
Control Unit	23	23
Treatment	-	-
Circuit #	5	6
Control Unit	23	23
Treatment	T1 FMO	T2 FMO
Circuit #	7	8
Control Unit	23	23
Treatment	Control	Dose 2
Circuit #	9	10
Control Unit	24	24
Treatment	-	-
Circuit #	11	12
Control Unit	24	24

	Circuit	
	LHS	RHS
Treatment	Control	Dose 1
Circuit #	13	14
Control Unit	24	24
Treatment	-	-
Circuit #	15	16
Control Unit	24	24
Treatment	-	-
Circuit #	17	18
Control Unit	25	25
Treatment	Dose 2	Control
Circuit #	19	20
Control Unit	25	25
Treatment	-	-
Circuit #	21	22
Control Unit	25	25
Treatment	Dose 1	-
Circuit #	23	24
Control Unit	25	25

	Circuit	
	LHS	RHS
Treatment	-	-
Circuit #	25	26
Control Unit	26	26
Treatment	-	-
Circuit #	27	28
Control Unit	26	26
Treatment	Control	Dose 1
Circuit #	29	30
Control Unit	26	26
Treatment	-	-
Circuit #	31	32
Control Unit	26	26
Treatment	Dose 2	Control
Circuit #	33	34
Control Unit	27	27
Treatment	-	-
Circuit #	35	36
Control Unit	27	27

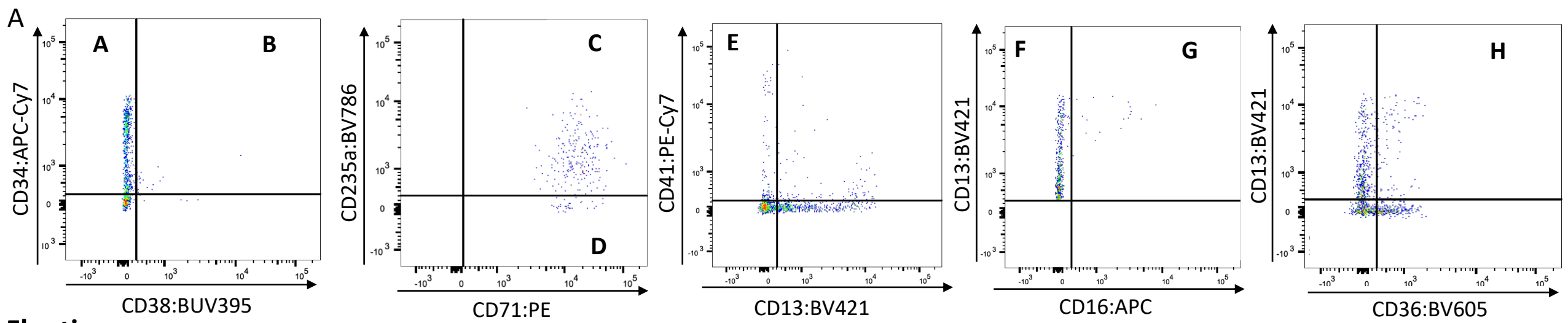
	Circuit	
	LHS	RHS
Treatment	Dose 2	T3 FMO
Circuit #	37	38
Control Unit	27	27
Treatment	Dose 1	Control
Circuit #	39	40
Control Unit	27	27
Treatment	-	-
Circuit #	41	42
Control Unit	28	28
Treatment	T4 FMO	Dose 1
Circuit #	43	44
Control Unit	28	28
Treatment	-	-
Circuit #	45	46
Control Unit	28	28
Treatment	Dose 2	T5 FMO
Circuit #	47	48
Control Unit	28	28

B

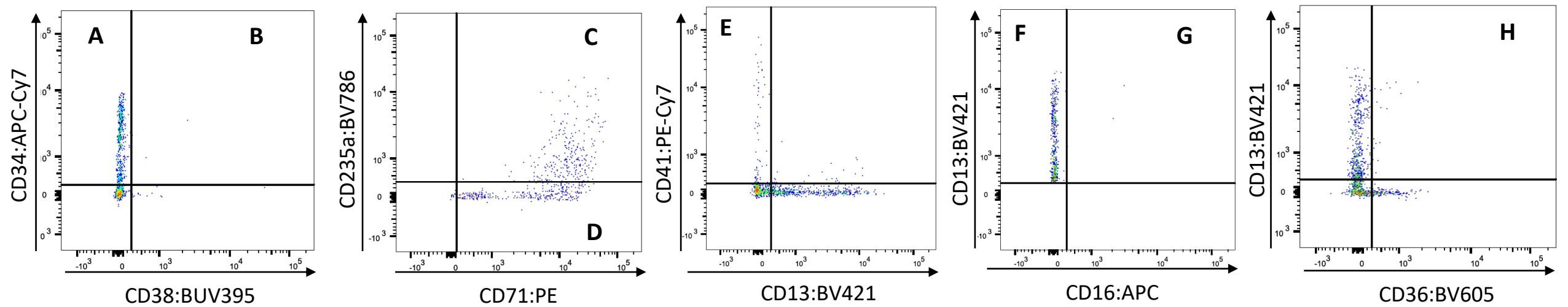
Top Incubator	Circuit		Operator
	LHS	RHS	
Treatment	50	500	A
Circuit #			
Control Unit			
Treatment	10	0	A
Circuit #			
Control Unit			
Treatment	VACANT	VACANT	A
Circuit #			
Control Unit			
Treatment	100	50	A
Circuit #			
Control Unit			
Treatment	500	10	A
Circuit #			
Control Unit			
Treatment	VACANT	VACANT	A
Circuit #			
Control Unit			
Treatment	0	100	B
Circuit #			
Control Unit			
Treatment	50	500	B
Circuit #			
Control Unit			
Treatment	VACANT	VACANT	B
Circuit #			
Control Unit			
Treatment	10	0	B
Circuit #			
Control Unit			
Treatment	0	100	B
Circuit #			
Control Unit			
Treatment	VACANT	VACANT	B
Circuit #			
Control Unit			
Treatment	100	50	B
Circuit #			
Control Unit			
Treatment	VACANT	VACANT	B
Circuit #			
Control Unit			

Bottom Incubator	Circuit		Operator
	LHS	RHS	
Treatment	VACANT	VACANT	B
Circuit #			
Control Unit			
Treatment	500	10	B
Circuit #			
Control Unit			
Treatment	0	100	B
Circuit #			
Control Unit			
Treatment	VACANT	VACANT	B
Circuit #			
Control Unit			
Treatment	50	500	B
Circuit #			
Control Unit			
Treatment	10	0	B
Circuit #			
Control Unit			
Treatment	VACANT	VACANT	A
Circuit #			
Control Unit			
Treatment	100	50	A
Circuit #			
Control Unit			
Treatment	500	10	A
Circuit #			
Control Unit			
Treatment	VACANT	VACANT	A
Circuit #			
Control Unit			
Treatment	0	100	A
Circuit #			
Control Unit			
Treatment	VACANT	VACANT	A
Circuit #			
Control Unit			

Supplementary Figure 3

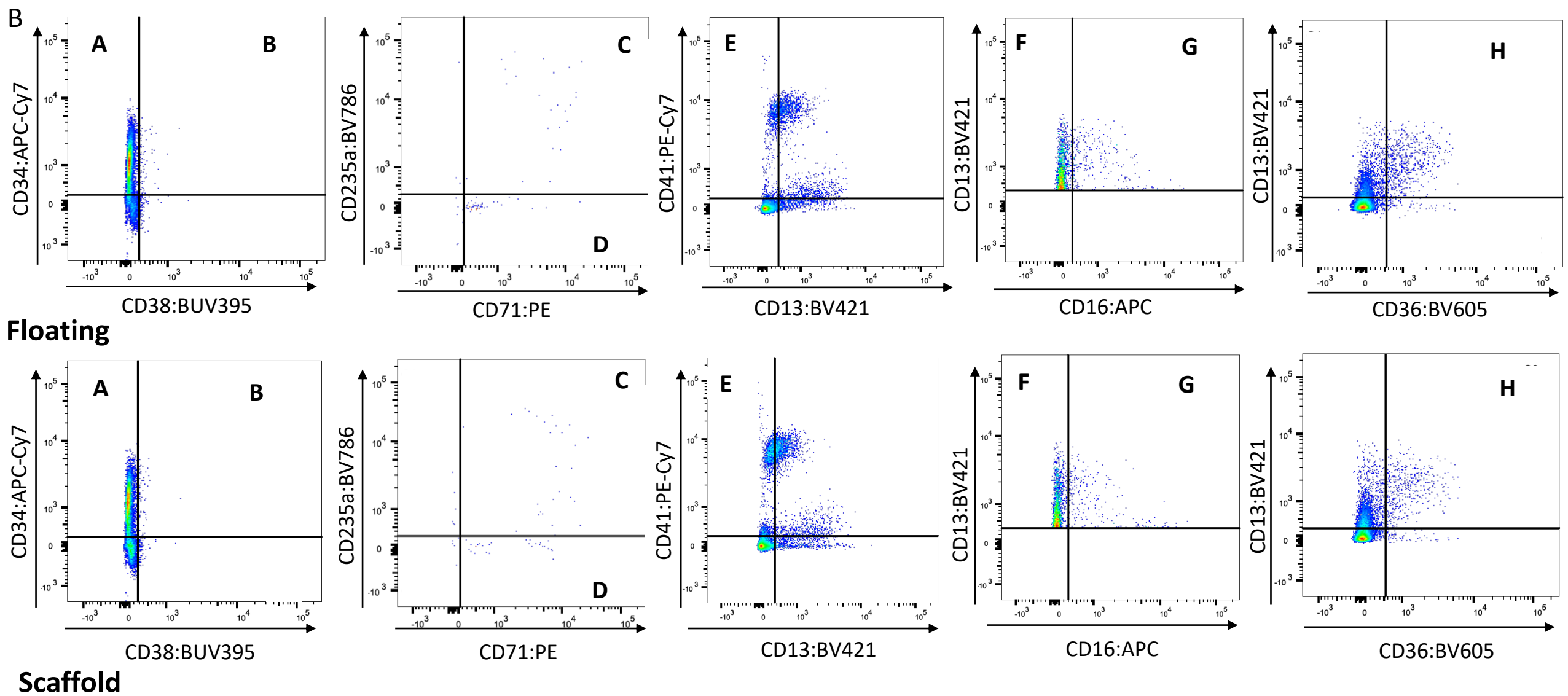


Floating

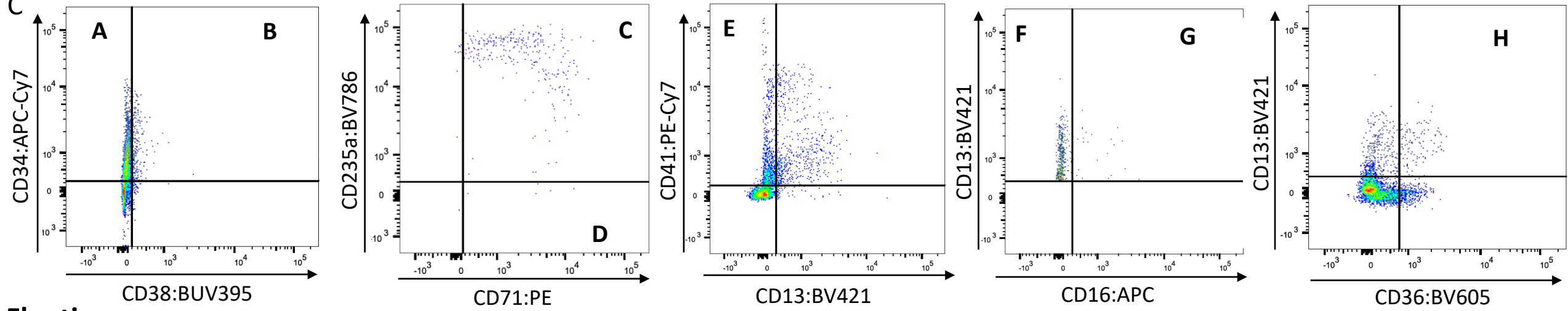
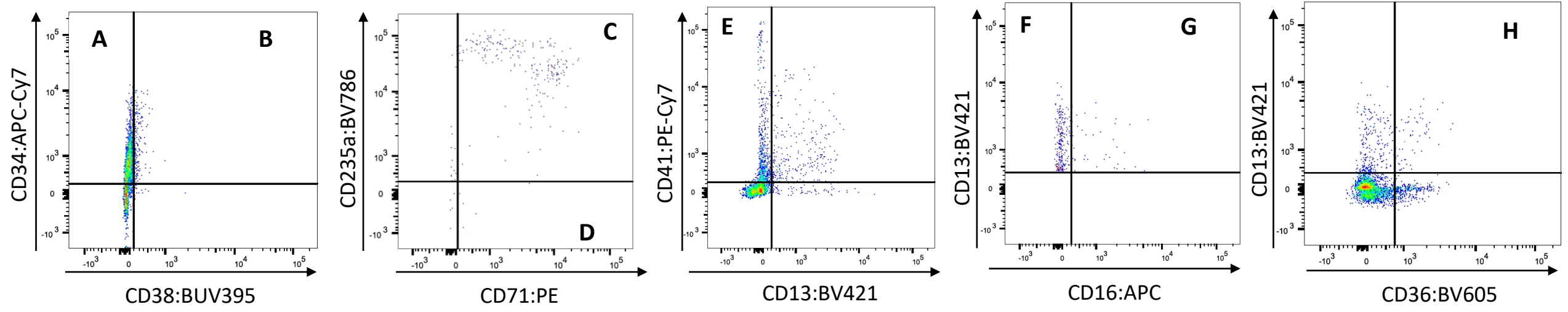


Scaffold

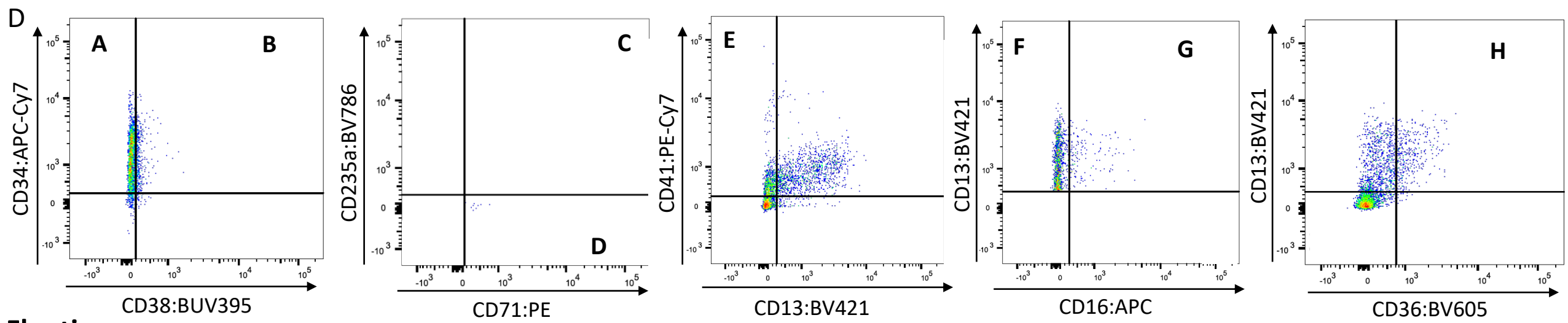
Example of Floating versus Scaffold gating for a control group circuit at Day 0.



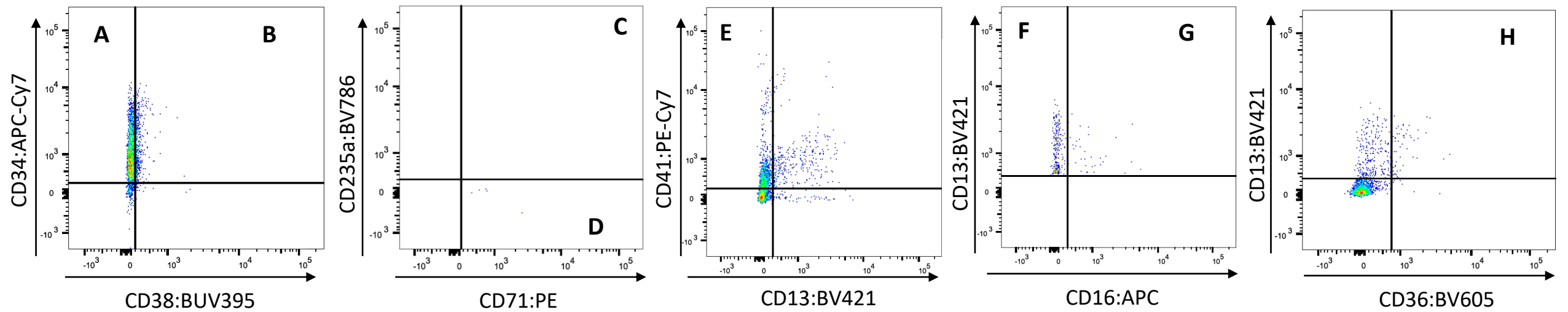
Example of Floating versus Scaffold gating for a control group circuit at Day 14 Recovery.

C**Floating****Scaffold**

Example of Floating versus Scaffold gating for a low dose group circuit at Day 14.

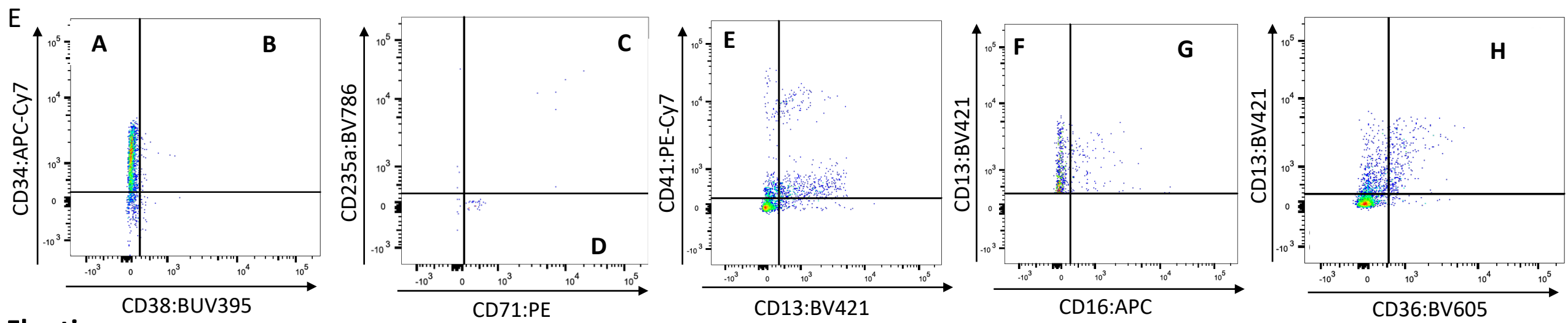


Floating

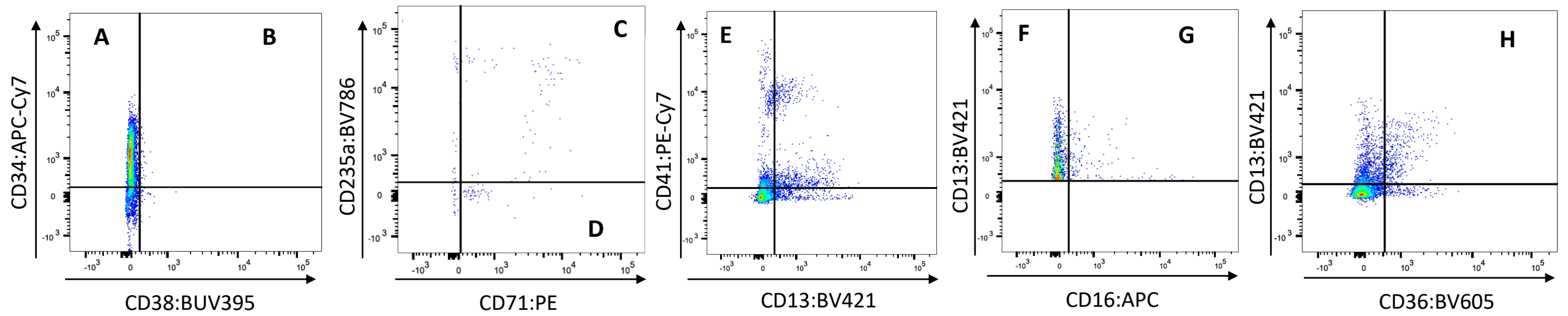


Scaffold

Example of Floating versus Scaffold gating for a high dose group circuit at Day 14.

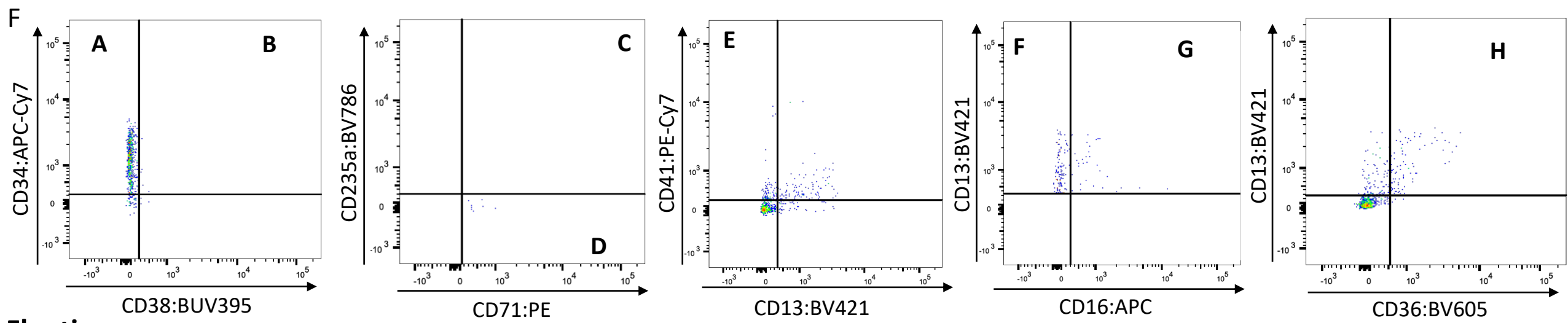


Floating

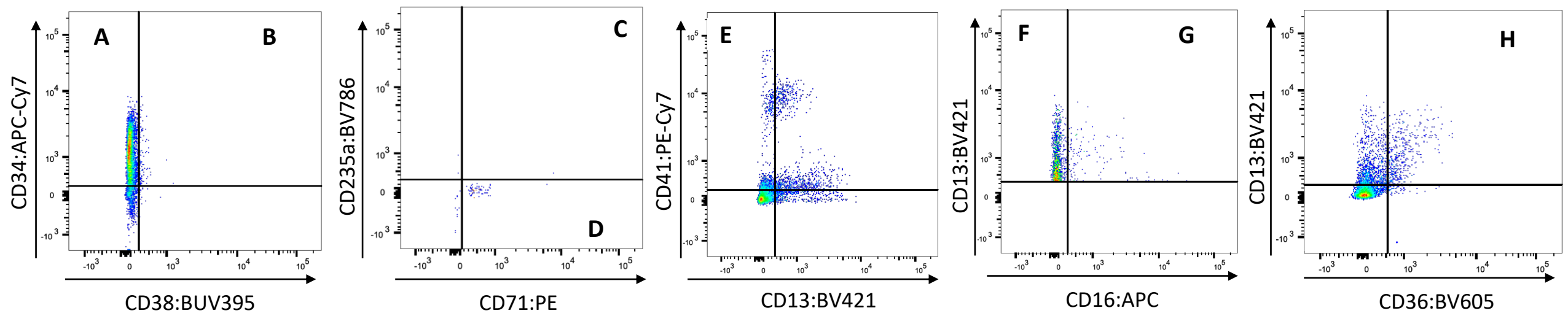


Scaffold

Example of Floating versus Scaffold gating for a low dose group circuit at Day 14 Recovery.



Floating



Scaffold

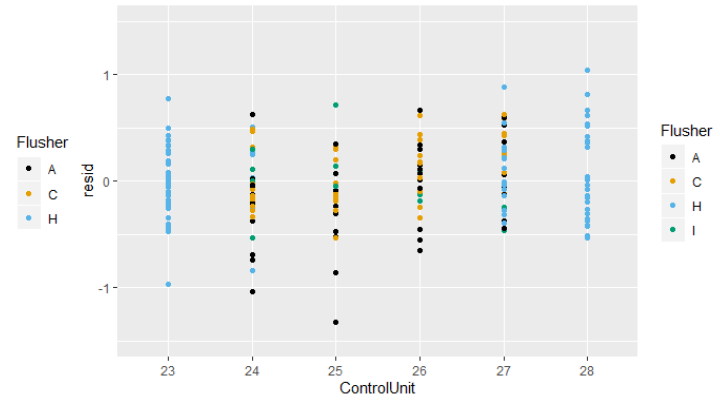
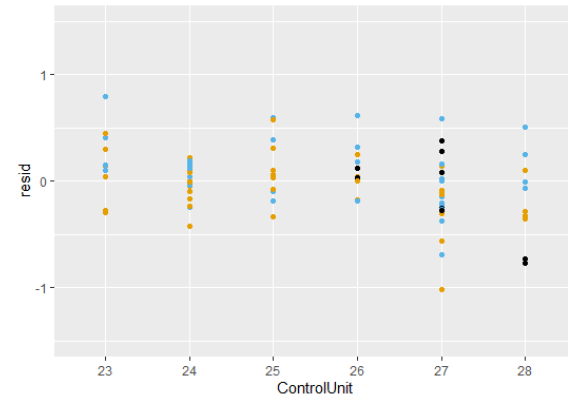
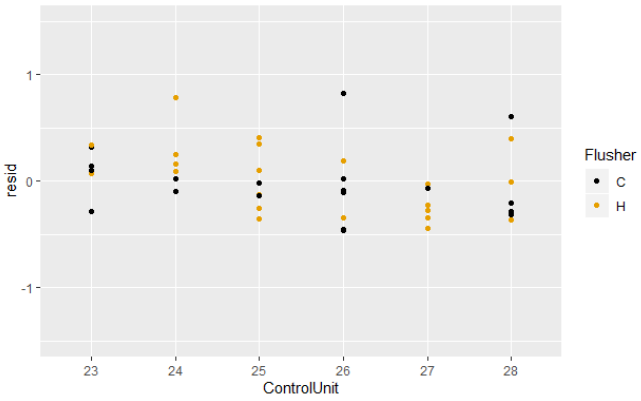
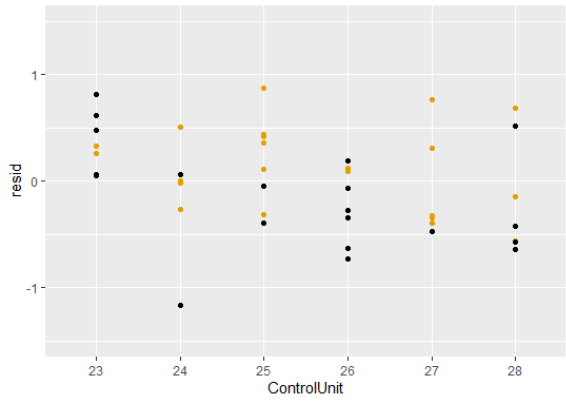
Example of Floating versus Scaffold gating for a high dose group circuit at Day 14 Recovery.

Supplementary Figure 4

(a)

Dead Cell %

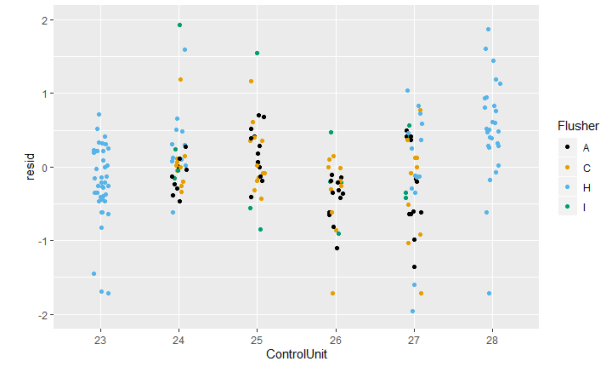
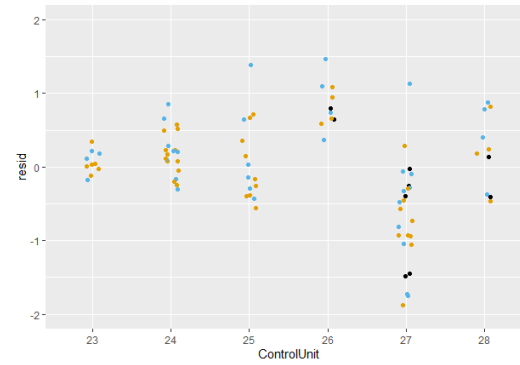
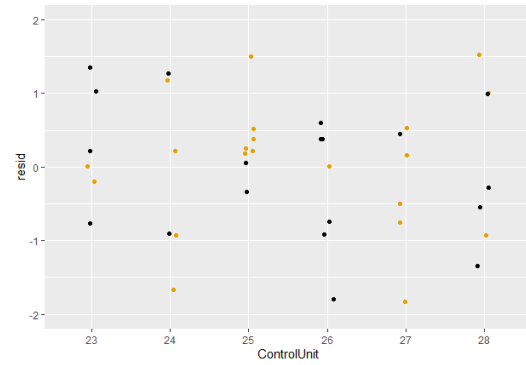
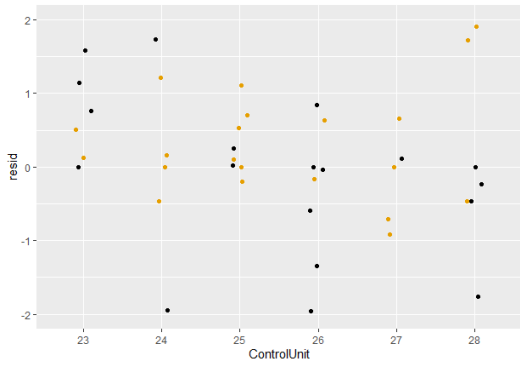
	1 Floating	1 Scaffold	2 Floating	3 Floating
Operator	0.067 .	0.835	0.074 .	0.118
Side	0.216	0.863	0.770	0.089
Control Unit within incubator	0.126	0.485	0.093 .	0.877
Incubator	0.028 *	0.061 .	0.020 *	0.000613 ***



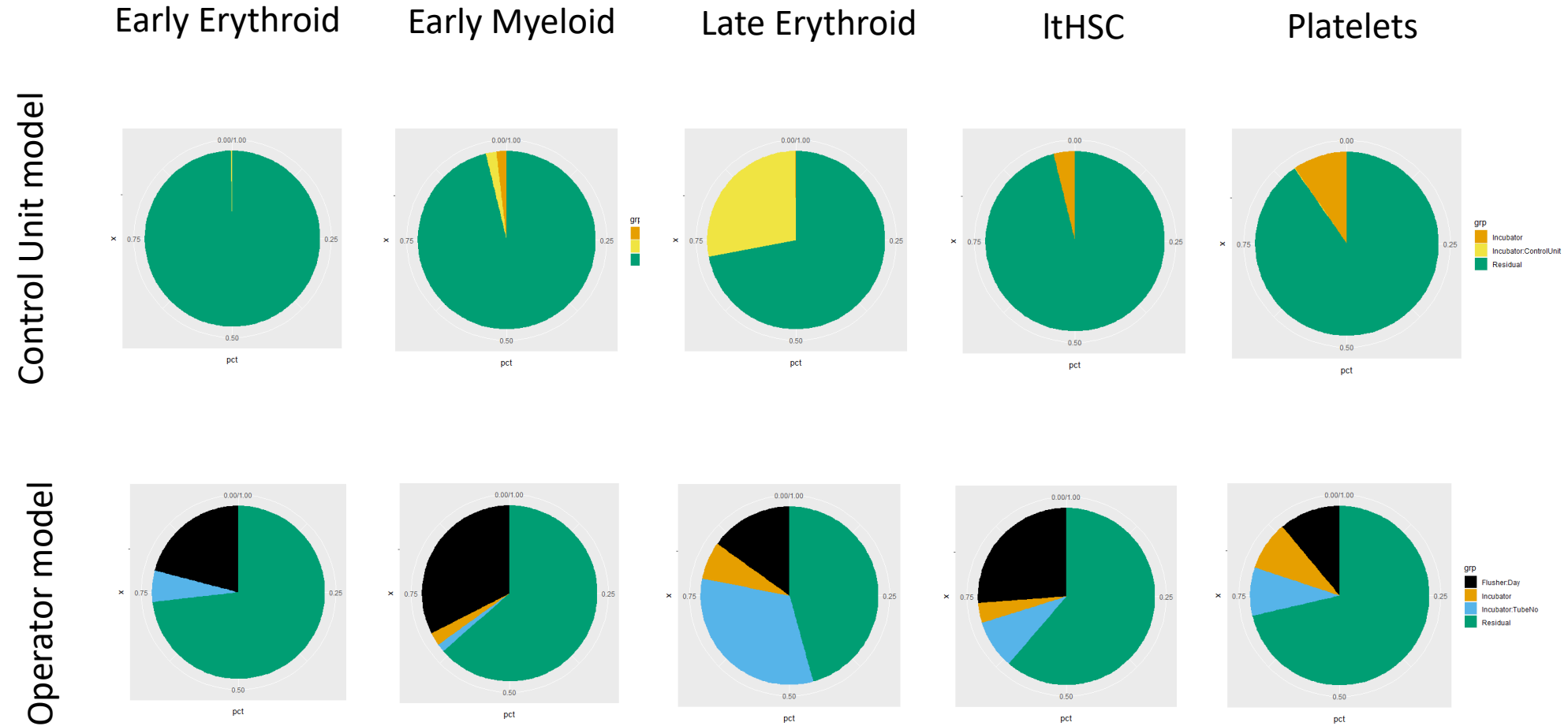
(b)

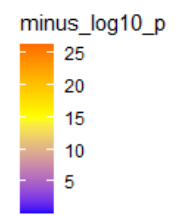
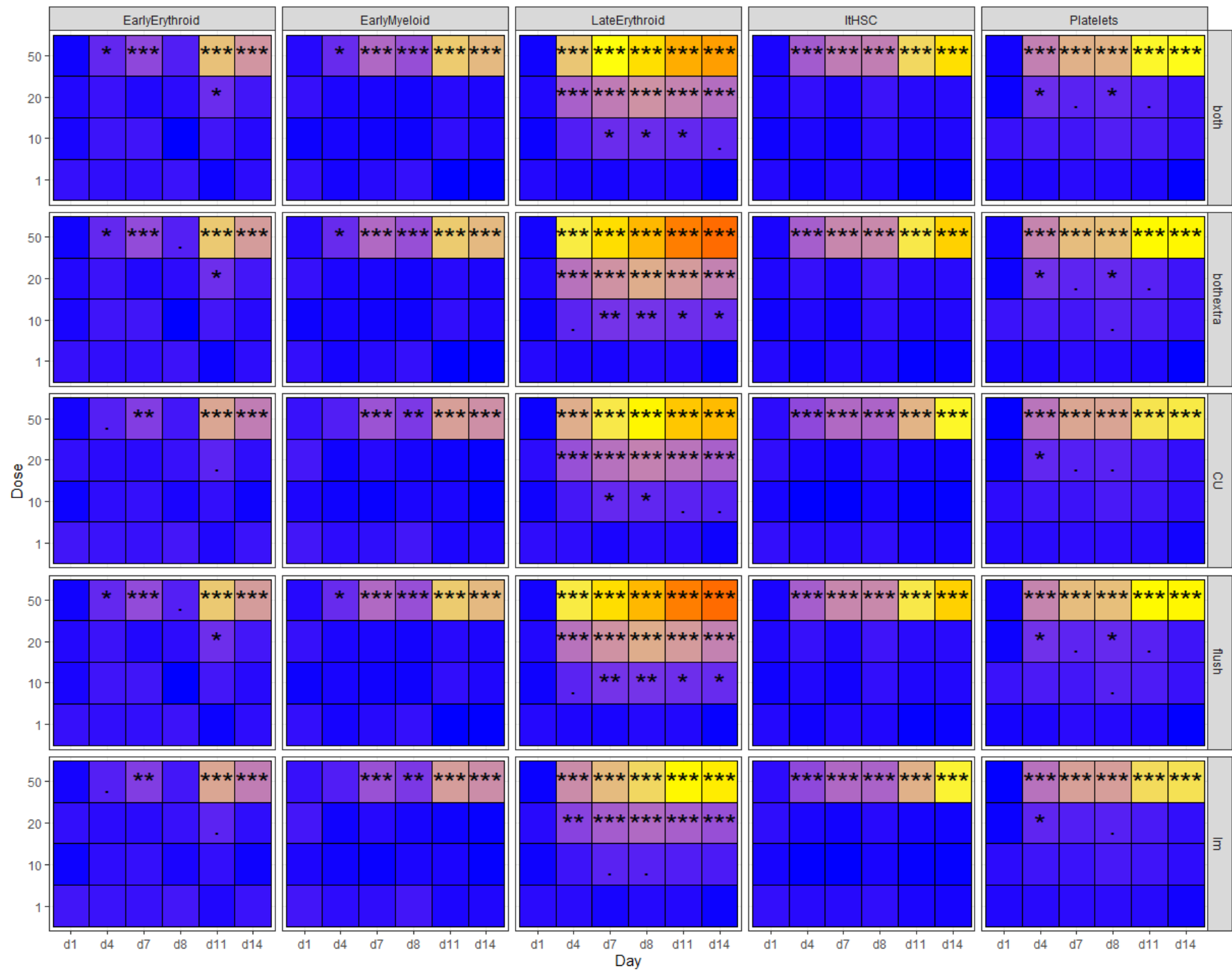
Late Erythroid %

	1 Floating	1 Scaffold	2 Floating	3 Floating
Operator	0.254	0.365	0.316	0.844
Side	0.493	0.840	0.885	0.230 *
Control Unit within incubator	0.759	0.787	2.25×10^{-10} ***	1.78×10^{-6} ***
Incubator	0.154	0.692	X	X
Control Unit	X	X	1.58×10^{-10} ***	3.53×10^{-6} ***

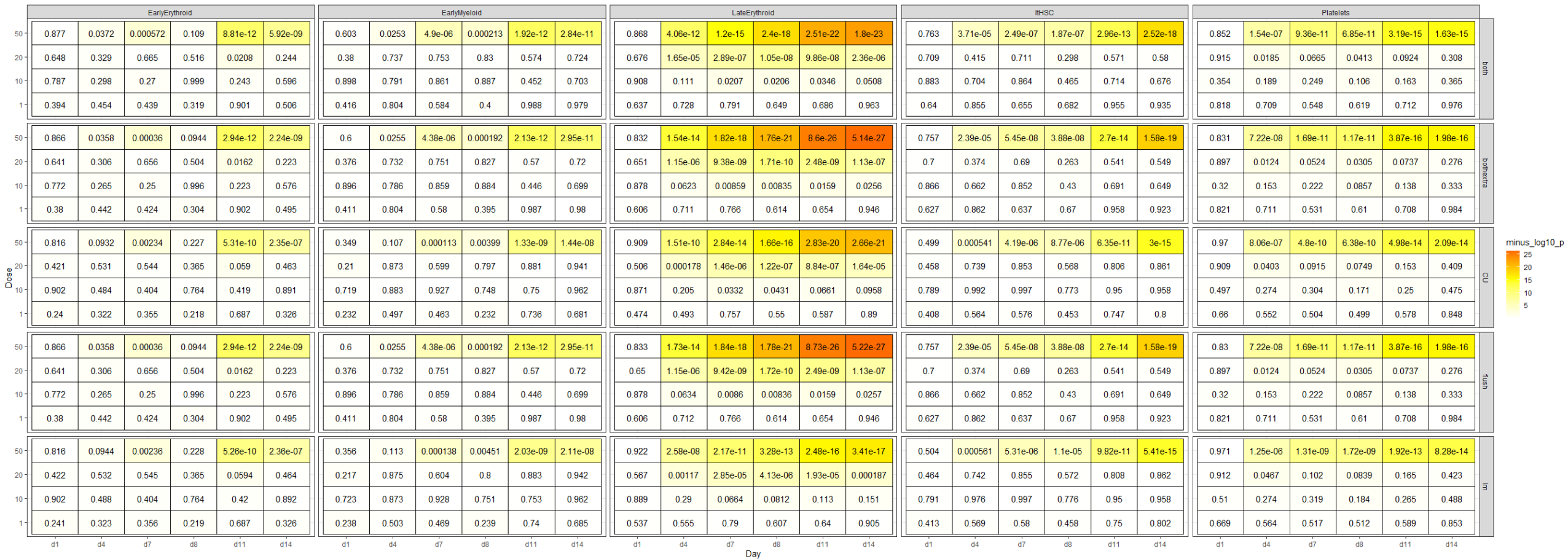


Supplementary Figure 5



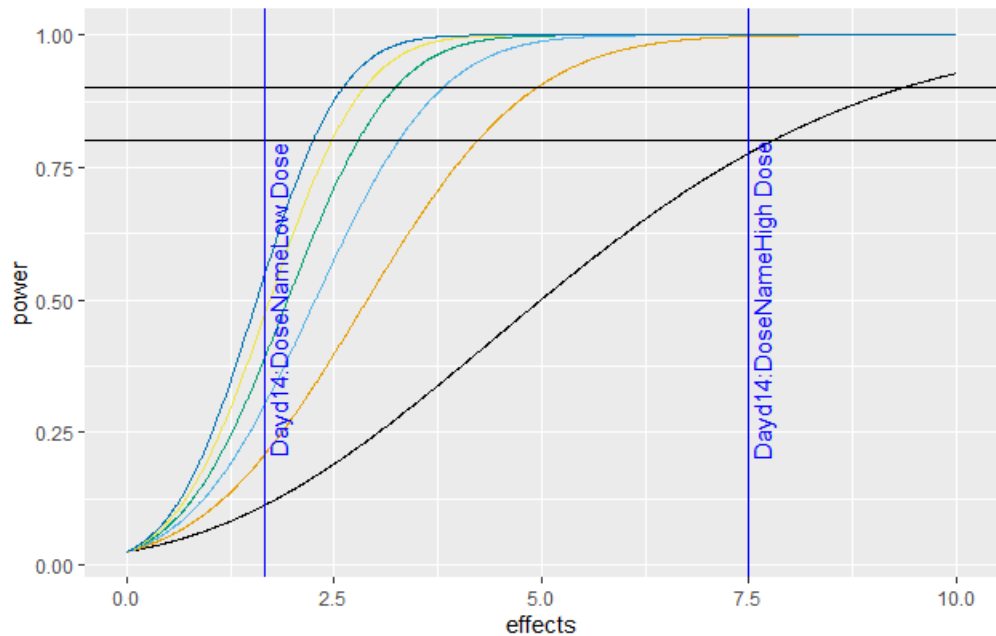


(data used in Supplementary fig 5)

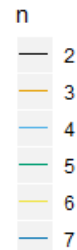
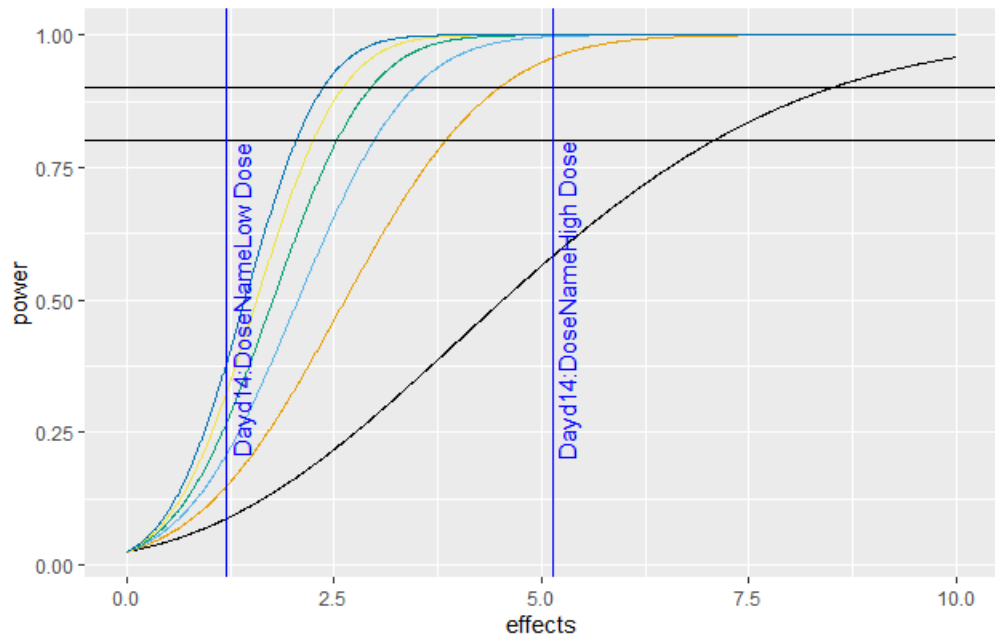


Supplementary Figure 6

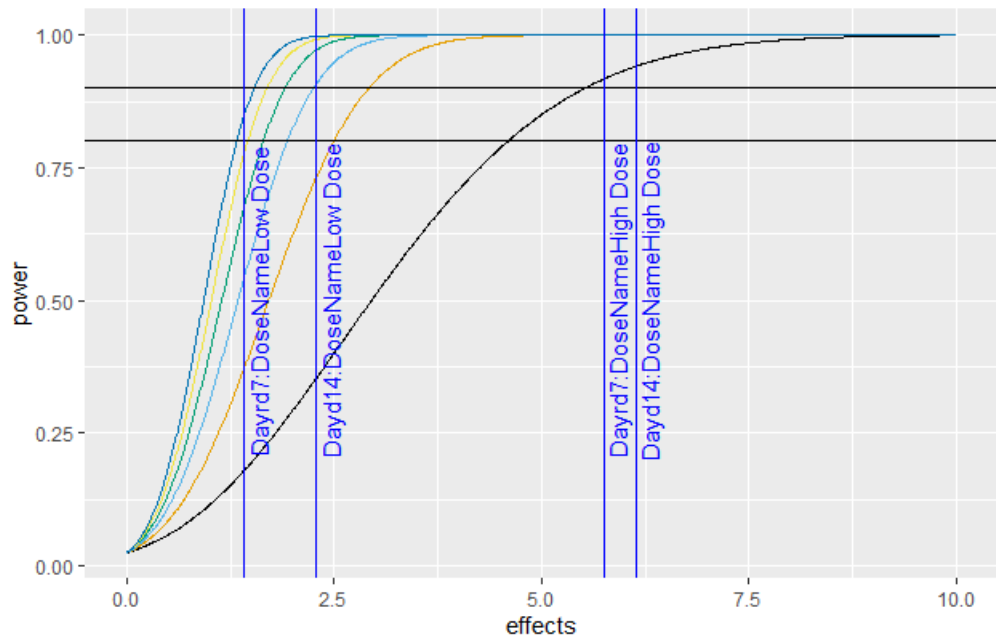
Power calculation: Effect on Late Erythroid lineage (BM-1 Floating)



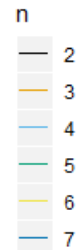
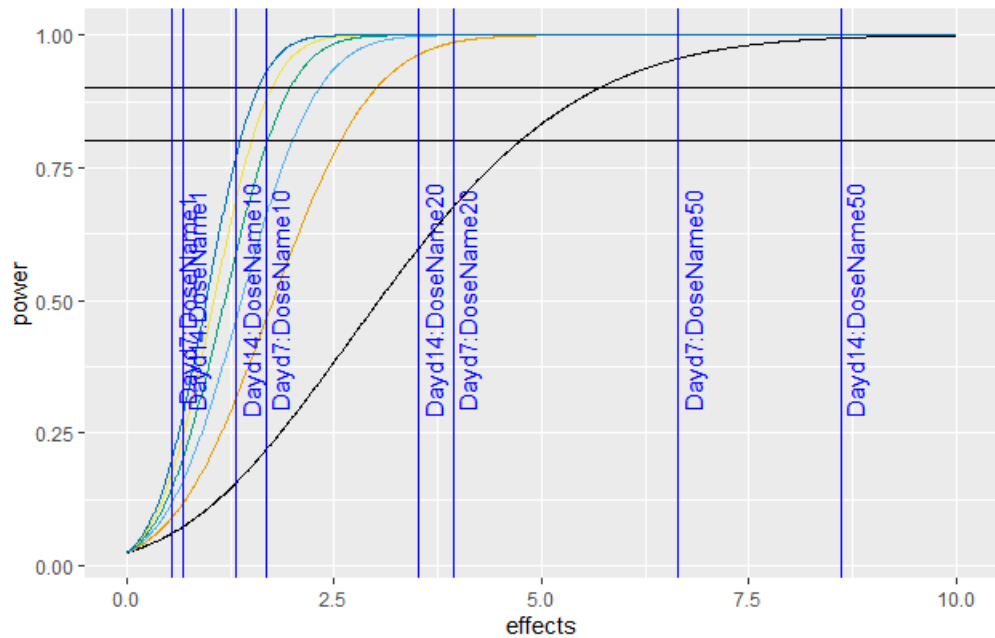
Power calculation: Effect on Late Erythroid lineage (BM-1 Scaffold)



Power calculation: Effect on Late Erythroid lineage (BM-2 Floating)



Power calculation: Effect on Late Erythroid lineage (BM-3 Floating)



Supplementary Figure 7

Top Incubator	Circuit		Operator
	LHS	RHS	
Treatment	A	G	1
Circuit #	1	2	
Control Unit	23	23	
Treatment	C	D	1
Circuit #	3	4	
Control Unit	23	23	
Treatment	F	E	1
Circuit #	5	6	
Control Unit	23	23	
Treatment	B	H	1
Circuit #	7	8	
Control Unit	23	23	
Treatment	D	B	1
Circuit #	9	10	
Control Unit	24	24	
Treatment	H	A	1
Circuit #	11	12	
Control Unit	24	24	
Treatment	G	C	1
Circuit #	13	14	
Control Unit	24	24	
Treatment	E	F	1
Circuit #	15	16	
Control Unit	24	24	
Treatment	C	F	2
Circuit #	17	18	
Control Unit	25	25	
Treatment	E	B	2
Circuit #	19	20	
Control Unit	25	25	
Treatment	H	D	2
Circuit #	21	22	
Control Unit	25	25	
Treatment	A	G	2
Circuit #	23	24	
Control Unit	25	25	

Bottom Incubator	Circuit		Operator
	LHS	RHS	
Treatment	G	A	1
Circuit #	25	26	
Control Unit	26	26	
Treatment	D	H	1
Circuit #	27	28	
Control Unit	26	26	
Treatment	B	E	1
Circuit #	29	30	
Control Unit	26	26	
Treatment	F	C	1
Circuit #	31	32	
Control Unit	26	26	
Treatment	F	E	1
Circuit #	33	34	
Control Unit	27	27	
Treatment	C	G	1
Circuit #	35	36	
Control Unit	27	27	
Treatment	A	H	1
Circuit #	37	38	
Control Unit	27	27	
Treatment	B	D	1
Circuit #	39	40	
Control Unit	27	27	
Treatment	H	B	2
Circuit #	41	42	
Control Unit	28	28	
Treatment	E	F	2
Circuit #	43	44	
Control Unit	28	28	
Treatment	D	C	2
Circuit #	45	46	
Control Unit	28	28	
Treatment	G	A	2
Circuit #	47	48	
Control Unit	28	28	