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Supplemental information

**Naïve B cells with low differentiation
improve the immune reconstitution
of HIV-infected patients**

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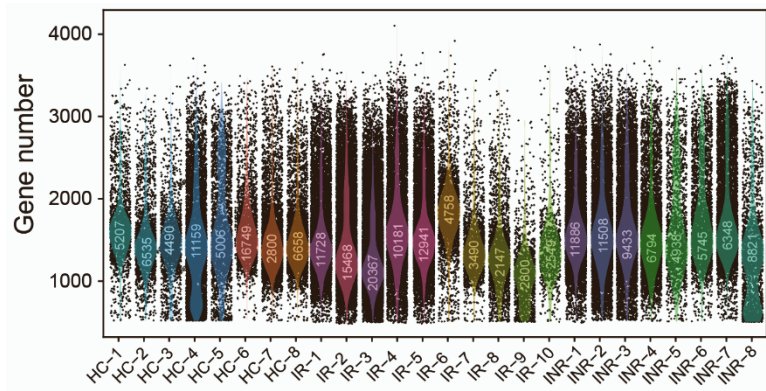


Figure S1. Single-cell sequencing of PBMC from the HC, IR and INR groups, related to Figure 1.

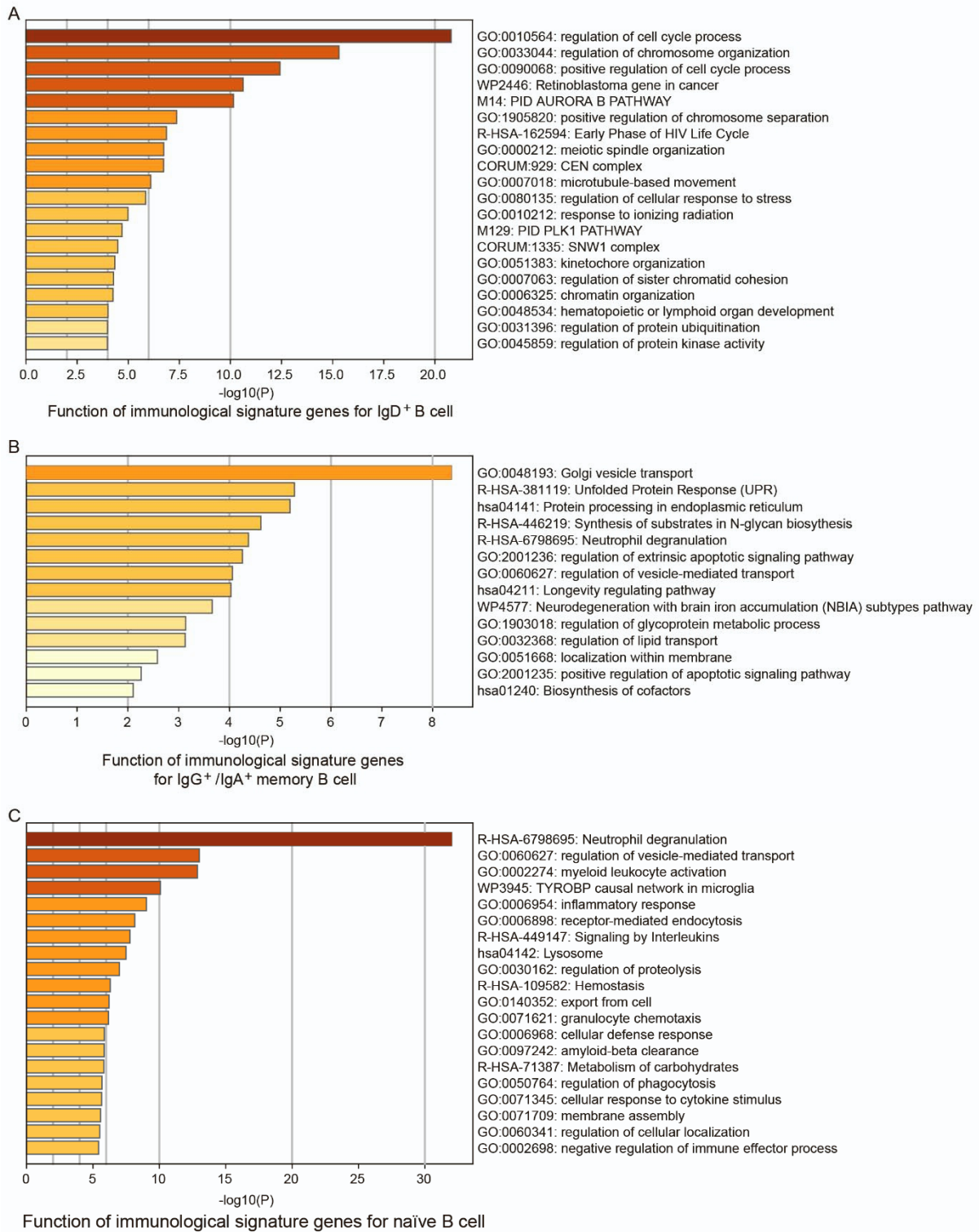


Figure S3. Function analysis of immunological signature genes for B cell subtypes, related to Figure 5.

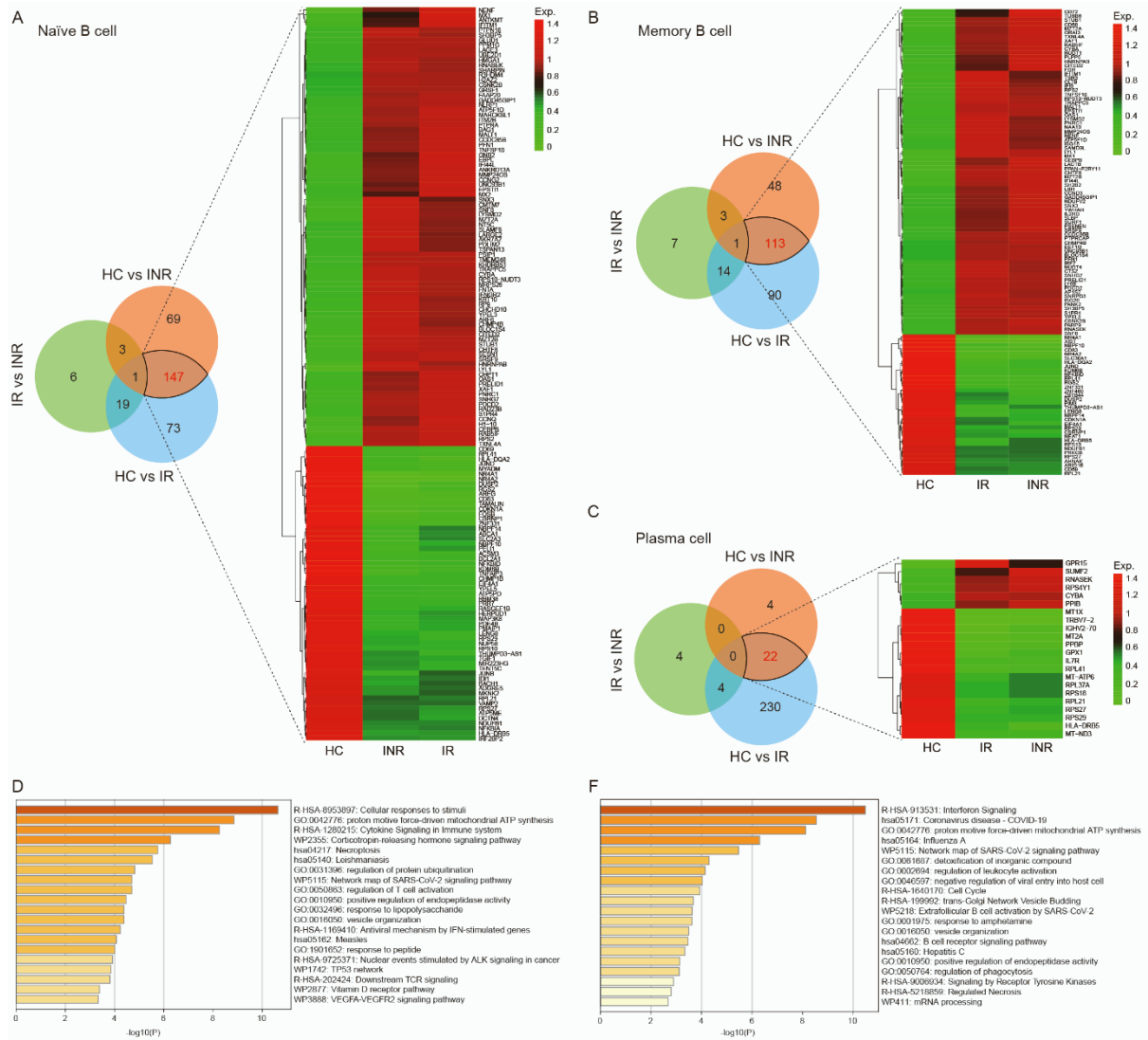


Figure S4. The DEGs related to HIV infection of three B cell subtypes among the HC, IR, and INR groups, related to Figure 5.

Table S2. Frequency of IGHV gene in naïve B cells (%), related to Figure 3

Gene name	HC		IR		INR	
	Mean	SEM	Mean	SEM	Mean	SEM
IGHV1-18	4.31	1.08	4.36	0.77	2.95	0.47
IGHV1-2	2.28	0.68	4.30	0.77	4.40	0.93
IGHV1-24	0.66	0.09	1.08	0.30	1.38	0.54
IGHV1-3	2.26	0.93	1.80	0.26	1.56	0.51
IGHV1-46	1.03	0.36	1.75	0.26	1.20	0.39
IGHV1-58	0.66	0.09	0.05	0.05	0.14	0.14
IGHV1-69	0.00	0.00	0.98	0.13	1.10	0.60
IGHV1-69-2	0.00	0.00	0.00	0.00	0.12	0.12
IGHV1-69D	3.64	1.15	1.74	0.70	3.29	0.84
IGHV1-8	2.09	0.36	0.00	0.00	0.00	0.00
IGHV1OR15-1	0.00	0.00	0.37	0.19	0.00	0.00
IGHV2-26	0.76	0.21	0.78	0.33	0.59	0.32
IGHV2-5	1.75	0.22	2.56	0.55	2.35	0.56
IGHV2-70	0.49	0.22	0.69	0.38	1.52	0.62
IGHV3-11	2.56	0.77	2.68	0.21	4.20	2.03
IGHV3-13	0.41	0.28	0.41	0.13	1.22	0.30
IGHV3-15	2.63	0.47	4.05	0.45	3.22	0.50
IGHV3-20	0.70	0.36	0.27	0.17	0.40	0.12
IGHV3-21	4.61	0.59	3.98	0.19	3.70	1.01
IGHV3-23	8.63	1.12	8.64	1.03	9.28	1.08
IGHV3-30	6.15	1.07	7.81	1.89	7.69	0.91
IGHV3-33	7.77	0.92	2.89	0.63	5.19	1.97
IGHV3-43	4.16	1.33	4.09	0.80	5.27	1.35
IGHV3-48	2.60	0.46	4.10	0.50	2.88	0.21
IGHV3-49	1.57	0.42	0.96	0.42	1.85	0.58
IGHV3-53	1.57	0.57	0.67	0.31	2.29	0.49
IGHV3-64	0.12	0.12	0.78	0.40	0.12	0.12
IGHV3-64D	0.24	0.24	0.10	0.10	0.00	0.00
IGHV3-66	0.72	0.38	1.33	0.44	0.89	0.27
IGHV3-7	2.66	0.52	3.59	0.76	2.77	0.53
IGHV3-72	0.15	0.09	0.16	0.13	0.14	0.14
IGHV3-73	0.42	0.17	1.09	0.46	0.23	0.23
IGHV3-74	1.43	0.31	1.66	0.37	1.70	0.10
IGHV4-28	0.00	0.00	0.14	0.14	0.00	0.00
IGHV4-30-2	3.91	0.43	0.00	0.00	0.00	0.00
IGHV4-31	1.20	0.35	1.12	0.70	1.61	0.25
IGHV4-34	7.39	2.14	7.36	1.22	6.62	0.73
IGHV4-39	5.85	0.32	5.72	0.45	4.43	0.51
IGHV4-4	1.93	0.82	2.15	0.51	0.64	0.32
IGHV4-59	5.37	0.90	5.71	1.37	5.93	0.96
IGHV4-61	0.41	0.20	1.87	1.25	3.06	1.25
IGHV5-10-1	0.00	0.00	0.32	0.20	0.00	0.00
IGHV5-51	2.98	1.09	3.04	0.12	2.88	0.92
IGHV6-1	1.14	0.36	1.33	0.41	1.03	0.35
IGHV7-4-1	1.37	0.47	2.04	0.60	1.61	0.25

Table S3. Frequency of IGHJ gene in naïve B cells (%), related to Figure 3

Gene name	HC		IR		INR	
	Mean	SEM	Mean	SEM	Mean	SEM
IGHJ1	0.73	0.31	1.54	0.47	1.25	0.30
IGHJ2	2.25	0.80	2.51	0.41	2.26	0.38
IGHJ3	9.85	1.01	12.24	1.36	15.07	1.68
IGHJ4	42.38	1.42	49.91	1.69	53.25	1.76
IGHJ5	11.48	1.29	11.40	1.62	9.53	0.84
IGHJ6	33.88	0.91	22.92	2.02	20.07	1.69

Table S4. Frequency of IGHV gene in memory B cells (%), related to Figure 3

Gene name	HC		IR		INR	
	Mean	SEM	Mean	SEM	Mean	SEM
IGHV1/OR15-1	0.21	0.21	0.00	0.00	0.00	0.00
IGHV1-18	5.02	1.43	3.82	0.94	4.10	0.48
IGHV1-2	0.54	0.41	3.41	1.09	1.94	1.10
IGHV1-24	0.70	0.36	0.29	0.19	0.66	0.39
IGHV1-3	2.45	0.91	1.62	0.26	3.99	1.33
IGHV1-45	0.11	0.11	0.22	0.22	0.00	0.00
IGHV1-46	2.77	0.72	2.29	0.89	2.91	0.35
IGHV1-58	0.00	0.00	0.33	0.14	0.00	0.00
IGHV1-69	0.26	0.16	0.67	0.28	1.03	0.21
IGHV1-69-2	0.00	0.00	0.00	0.00	0.22	0.22
IGHV1-69D	2.49	0.80	0.86	0.53	2.96	1.43
IGHV1-8	1.84	0.55	0.00	0.00	0.00	0.00
IGHV1OR15-1	0.00	0.00	0.41	0.25	0.59	0.32
IGHV2-26	0.32	0.20	0.15	0.10	0.87	0.44
IGHV2-5	2.98	0.75	2.16	0.57	3.37	1.11
IGHV2-70	0.15	0.15	0.34	0.24	0.79	0.40
IGHV2-70D	0.00	0.00	0.23	0.18	0.00	0.00
IGHV3-11	1.35	0.42	2.60	0.30	2.40	1.22
IGHV3-13	0.32	0.20	0.05	0.05	1.16	0.64
IGHV3-15	2.73	0.65	3.29	0.61	3.28	0.06
IGHV3-20	1.23	0.58	0.61	0.38	1.17	0.52
IGHV3-21	3.17	1.64	2.53	0.30	3.19	1.05
IGHV3-23	11.07	0.97	10.04	0.91	8.42	0.74
IGHV3-30	6.82	1.05	8.47	1.76	7.60	0.33
IGHV3-33	6.59	0.85	2.22	0.49	3.60	1.51
IGHV3-35	0.00	0.00	0.36	0.36	0.00	0.00
IGHV3-43	3.02	1.30	4.68	0.43	2.29	0.98
IGHV3-48	5.78	0.62	4.05	1.50	4.45	0.64
IGHV3-49	1.01	0.37	1.25	0.47	0.43	0.22
IGHV3-53	1.44	0.28	0.70	0.21	2.24	0.53
IGHV3-64	0.11	0.11	0.19	0.19	0.00	0.00
IGHV3-64D	0.17	0.17	0.05	0.05	0.00	0.00
IGHV3-66	0.83	0.42	1.48	0.61	0.95	0.66
IGHV3-7	5.57	0.60	5.41	0.68	5.69	1.36
IGHV3-72	1.28	1.04	0.23	0.18	0.66	0.39
IGHV3-73	0.60	0.31	0.90	0.36	0.66	0.39
IGHV3-74	2.24	0.66	4.83	0.38	2.24	0.53
IGHV3OR16-10	0.00	0.00	0.09	0.09	0.00	0.00
IGHV3OR16-12	0.00	0.00	0.10	0.10	0.21	0.21
IGHV4-28	0.00	0.00	0.36	0.20	0.22	0.22
IGHV4-30-2	2.70	0.86	0.00	0.00	0.00	0.00
IGHV4-31	0.11	0.11	0.54	0.33	1.86	0.99
IGHV4-34	1.91	0.50	4.00	1.30	4.14	0.50
IGHV4-39	4.35	0.79	6.29	0.99	3.90	0.92
IGHV4-4	0.57	0.44	0.94	0.29	1.25	0.40
IGHV4-59	5.42	1.48	6.60	0.53	7.03	1.51
IGHV4-61	1.78	0.10	2.55	1.30	1.84	0.62
IGHV5-10-1	0.17	0.17	0.65	0.40	0.00	0.00
IGHV5-51	3.13	0.61	3.94	0.88	2.75	1.39
IGHV6-1	1.67	0.43	1.41	0.57	1.02	0.18
IGHV7-4-1	3.31	0.99	2.88	1.00	2.76	0.83

Table S5. Frequency of IGHJ gene in memory B cells (%), related to Figure 3

Gene name	HC		IR		INR	
	Mean	SEM	Mean	SEM	Mean	SEM
IGHJ1	2.01	0.57	2.40	0.72	1.61	0.31
IGHJ2	2.73	0.34	3.90	1.31	4.76	0.67
IGHJ3	11.24	1.03	11.17	1.60	9.98	2.13
IGHJ4	54.48	2.03	51.37	1.91	54.42	1.61
IGHJ5	11.75	1.54	14.43	0.98	13.97	0.94
IGHJ6	18.10	1.52	17.83	2.35	16.12	0.88