

Supplementary Table S1. The detailed clinical characteristics of donors; related to the Materials and Methods.

Analysis	Group	Patient ID	Age (years)	Height (cm)	Weight (kg)	FSH (U/l)	LH (U/l)	Total T (ng/ml)	E2 (pg/ml)	PRL (ng/ml)	PRO (ng/ml)	Diagnosis	Notes
Single-cell RNA seq; Histological analysis.	Young	Y1	28	174	75	5.81	5.42	6.76	27	4.4	0.2	Testicular teratoma	Hormone test before surgery
Single-cell RNA seq; Histological analysis.	Young	Y2	24	175	70							Testicular Leydig cell tumour	No data of hormone test
Single-cell RNA seq; Histological analysis.	Young	Y3	31	177	74	4.46	3.2	5.44	23	14.16	0.3	Obstructive azoospermia	Hormone test before surgery
Histological analysis	Young	Y4	24	173	73	3.84	6.52	5.36	32	9.72	0.1	Obstructive azoospermia	Hormone test before surgery
Histological analysis	Young	Y5	31	170	71	3.79	5.72	3.83	24	8.72	0.2	Obstructive azoospermia	Hormone test before surgery
Histological analysis	Young	Y6	26	181	79	3.75	2.84	8.22	22	13.38	0.3	Obstructive azoospermia	Hormone test before surgery
Histological analysis	Young	Y7	30	175	80	4.45	3.73	4.83	22	8.75	0.2	Obstructive azoospermia	Hormone test before surgery
Histological analysis	Young	Y8	31	174	74	2.66	3.73	3.39	27	9.58	0.1	Obstructive azoospermia	Hormone test before surgery
Histological analysis	Young	Y9	28	173	71	5.1	3.25	3.28	20	12.59	0.2	Obstructive azoospermia	Hormone test before surgery
Histological analysis	Young	Y10	29	171	75	3.47	3.71	3.18	22	11.33	0.2	Obstructive azoospermia	Hormone test before surgery
Single-cell RNA seq; Histological analysis.	Old	O1	61	175	78			5.15	<10		0.3	Testicular cyst	Hormone test before orchiectomy
Single-cell RNA seq; Histological analysis.	Old	O2	87	164	60	37.53	23.43	0.18	<10	10.78	0.3	Prostatic cancer	Hormone test after orchiectomy
Single-cell RNA seq; Histological analysis.	Old	O3	70	177	54							Prostatic cancer	No data of hormone test
Histological analysis	Old	O4	80	167	55	31.49	25.43	0.25	21	15.91	0.2	Prostatic cancer	Hormone test after orchiectomy
Histological analysis	Old	O5	75	168	58	5.93	6.06	0.15	16	16.44	0.2	Prostatic cancer	Hormone test after orchiectomy
Histological analysis	Old	O6	74	162	62	7.08	13.11	0.16	<10	11.48	0.1	Prostatic cancer	Hormone test after orchiectomy
Histological analysis	Old	O7	71	170	70	7.85	9.15	4.23	25	17.3	0.3	Prostatic cancer	Hormone test before orchiectomy
Histological analysis	Old	O8	70	160	62	4.82	1.86	3.87	22	9.99	0.2	Prostatic cancer	Hormone test before orchiectomy
Histological analysis	Old	O9	79	167	58	16.26	6.58	4.98	15	7.35	0.1	Prostatic cancer	Hormone test before orchiectomy
Histological analysis	Old	O10	86	170	76	16.75	6.16	9.01	15.53	32	0.2	Prostatic cancer	Hormone test before orchiectomy