

Supplement Table 1. The information of the donors in combined omics analysis

Ages (y)			Sperm concentration			Days of abstinence			Post-thaw sperm recovery rate		
T	P	M	T	P	M	T	P	M	T	P	M
29	23	29	49	69	90	5	5	5	0.62	0.81	0.75
25	25	25	63	43	80	3	3	5	0.64	0.60	0.67
26	27	23	55	81	52	3	5	5	0.73	0.61	0.76
27	27	22	85	60	60	5	3	5	0.77	0.70	0.60
22	29	22	60	97	72	5	5	5	0.74	0.67	0.74
29	22		65	57		4	4		0.79	0.81	
28	25		90	108		5	5		0.80	0.89	
29	27		53	80		4	3		0.64	0.67	
25	24		113	53		5	4		0.74	0.64	
23			71			5			0.67		
26			51			5			0.78		
27			63			4			0.75		
27			28			5			0.73		
22			64			5			0.67		
25			95			5			0.67		
p>0.05			p>0.05			p>0.05			p>0.05		

T: transcriptome, P: proteome, M: metabolome.