

**A**



**B**

Module	Semen Parameter	Correlation	P-value	Genes	DEGs
Greenyellow	Total Sperm	-0.88	0.05	168	30
Tan	Motility	0.88	0.05	167	14
Midnightblue	Normal Morphology	-0.93	0.02	120	5
	Droplets	0.93	0.02		
Brown	Reject Ejaculate	-0.89	0.04	1234	98

C



**D**

<b>Module</b>	<b>Semen Parameter</b>	<b>Correlation</b>	<b>P-value</b>	<b>Genes</b>	<b>DEGs</b>
Red	Total Sperm	0.87	0.02	480	51
	Motility	-0.84	0.04		
Pink	Total Sperm	-0.94	0.005	250	58
	Rejected Ejaculate	0.91	0.01		
Magenta	Motility	-0.88	0.02	199	14
Turquoise	Motility	-0.86	0.03	2380	214
Paleturquoise	Normal Morphology	0.85	0.03	46	1
	Droplets	-0.84	0.04		
Darkmagenta	Normal Morphology	0.85	0.03	33	2
	Droplets	-0.81	0.05		
Darkolivegreen	Normal Morphology	0.92	0.01	38	4
	Droplets	-0.92	0.01		