

Table S9: Correlation matrix of Sperm parameters vs. Testicular metabolites. The correlation was obtained using the Spearman r with Exact p-value (n = 15). * p < 0.05; ** p < 0.005; *** < 0.0005; **** p < 0.0001.

	Ala	Glu	Gln	Val	Leu	Ile	AMP	Adenosine	Lac	Acetate	Succinate	Creatine	GSH	Betaine	Taurine	Creatine
Sperm concentration	-0.7222 **	-0.1963	-0.6421 *	-0.4059	-0.574 *	-0.2706	0.3206	-0.3529	-0.3166	0.2147	-0.0353	-0.0486	-0.1294	0.3238	-0.6942 **	-0.0486
Sperm viability	-0.2255	-0.4089	-0.5626 *	0.2471	0.2104	-0.1029	-0.3559	0.4118	0.3314	0.7294 **	-0.3118	0.1148	-0.6118 *	0.0765	-0.4407	0.1148
Sperm motility	-0.2965	-0.3959	-0.4783	0.1251	0.3446	-0.2237	-0.3032	0.3385	0.2417	0.7314 **	-0.3797	-0.0604	-0.6637 *	0.1311	-0.5752 *	-0.0604
Normal	-0.3951	-0.0232	0.0727	0.2090	0.1630	0.2046	-0.2134	0.3102	0.3517	0.2420	-0.2068	-0.1145	-0.1386	0.4736	0.0541	-0.1145
Decapitated	0.0132	-0.0840	-0.2750	0.1077	0.0682	0.2000	-0.2132	0.1648	0.0529	0.1165	0.1253	0.2552	-0.2747	-0.5765 *	-0.0794	0.2552
Pin head	0.1678	0.2279	0.5771 *	-0.3410	-0.2985	-0.1320	0.462	-0.5699 *	-0.3407	-0.6073 *	0.1672	-0.3051	0.7459 **	0.3106	0.4801	-0.3051
Flattened head	0.0684	0.3050	0.3366	-0.0593	0.0000	0.1473	0.1165	-0.3011	-0.0815	-0.2527	0.7055 *	0.3432	0.2571	-0.0330	0.3594	0.3432
Bent neck	-0.1004	0.0597	0.1200	0.2860	-0.3910	-0.4334	0.495	-0.3190	0.3308	-0.2486	-0.6095 *	-0.5220	0.2112	0.6421 *	-0.1634	-0.5220
Coiled tail	0.2029	-0.1238	-0.1980	-0.4681	0.0704	-0.2308	-0.0681	0.0374	-0.5859 *	0.0462	0.1341	0.0946	-0.0857	-0.2860	-0.1720	0.0946