

**Table S6. Top scoring genes from ANOVA-SVD analysis**

Symbol	Description	$-\log_{10}(\text{p-value})^*$	Eigengene <sup>†</sup>
<i>Xist</i>	inactive X specific transcripts	4.81	SEX
<i>Cyp4a12</i>	cytochrome P450, family 4, subfamily a, polypeptide 12	4.19	SEX
<i>Sult2a2</i>	RIKEN cDNA C730007P19 gene	3.94	SEX
<i>Ddx3y</i>	DEAD (Asp-Glu-Ala-Asp) box polypeptide 3, Y-linked	3.80	SEX
<i>Fmo3</i>	flavin containing monooxygenase 3	3.68	SEX
<i>Sult3a1</i>	sulfotransferase family 3A, member 1	3.59	SEX
<i>Hao3</i>	hydroxyacid oxidase (glycolate oxidase) 3	3.51	SEX
<i>Cyp2b9</i>	cytochrome P450, family 2, subfamily b, polypeptide 9	3.45	SEX
<i>Eif2s3y</i>	eukaryotic translation initiation factor 2, subunit 3, structural gene Y-linked	3.40	SEX
<i>Cyp2b13</i>	cytochrome P450, family 2, subfamily b, polypeptide 13	3.35	SEX
<i>Hsd3b5</i>	hydroxy-delta-5-steroid dehydrogenase, 3 beta- and steroid delta-isomerase 5	3.26	SEX
<i>BC014805</i>	cDNA sequence BC014805	3.23	SEX
<i>Elovl3</i>	elongation of very long chain fatty acids ( <i>FEN1/Elo2</i> , <i>SUR4/Elo3</i> , yeast)-like 3	3.19	SEX
<i>AI132709</i>	expressed sequence AI132709	3.13	SEX

<i>Cyp3a41</i>	cytochrome P450, family 3, subfamily a, polypeptide 41	3.08	SEX
<i>Cyp2c39</i>	cytochrome P450, family 2, subfamily c, polypeptide 39	3.03	SEX
<i>H2-K1</i>	histocompatibility 2, K1, K region	3.30	STRAIN
<i>Camk2b</i>	calcium/calmodulin-dependent protein kinase II, beta	3.11	STRAIN
<i>Zfp236</i>	zinc finger protein 236	3.05	STRAIN
<i>Idi1</i>	isopentenyl-diphosphate delta isomerase	3.16	DIET
<i>Sqle</i>	squalene epoxidase	3.01	DIET

\*permutation-validated Hotelling  $T^2$  p-value

†Eigengene most strongly correlated with gene expression for a given gene