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Supplementary Figure 1: JAX KOMP2 Phenotyping Pipeline

Age wks	JAX KOMP2 Pipeline			
4-7	Mice (controls and KO) received; Weigh weekly			Wt
8	Open Field	Dysmorphology & SHIRPA	Grip Strength	Wt
9	Light/Dark	Holeboard		Wt
10	Acoustic Startle/PPI			Wt
11	Tail Suspension	EKG	Rotarod	Wt
12	Glucose Tolerance Test			Wt
13	Urinalysis (Alb, Cre, Mg ²⁺ , Glu)			Wt
14	Body Composition X-ray	Eye Dysmorphology Survey: Slit Lamp,Ophthalmoscope		Wt
15	Sleep			Wt
16	Auditory Brainstem Response	Electroretinography		Wt
17	Electroconvulsive Seizure Threshold			Wt
18	Terminal: (8/8) Hematology, Clinical Chemistries, Insulin, Heart Weight Necropsy (2/2): Gross Pathology, Block Banking, Histopathology Flow Cytometry: Spleen			Wt
	Grand Rounds Monthly, upon strain completion		Unique to JAX Pipeline	

Supplementary Table 1: Strain Sample Sizes by behavioral test

Knockout Strains	Ethanol		Ethanol Total	Meth		Meth Total	Nicotine		Nicotine Total	Grand Total
	Female	Male		Female	Male		Female	Male		
Btg2<tm1b(KOMP)Mbp>/2J	8	8	16	8	8	16	8	8	16	48
C1qa<tm1b(EUCOMM)Wtsi>/3J	8	7	15	8	8	16	8	8	16	47
C57BL/6NJ	39	39	78	30	31	61	30	31	61	200
C9<tm1.1(KOMP)Vlcl>/J				7	7	14	8	8	16	30
Cfb<tm1.1(KOMP)Wtsi>/J	8	8	16	5	5	10	2	2	4	30
Cp<tm1b(KOMP)Wtsi>/J	8	8	16	11	11	22	5	5	10	48
Dnajb3<tm1.1(KOMP)Vlcl>/J	8	8	16	5	5	10	7	7	14	40
Dnase1l2<tm1.1(KOMP)Wtsi>/J	8	8	16	8	8	16	8	7	15	47
Epb4.114a<tm1b(KOMP)Mbp>/2J	8	8	16	8	8	16	8	8	16	48
Far2<tm2b(KOMP)Wtsi>/2J	8	5	13	8	8	16	8	8	16	45
Gipc3<tm1b(KOMP)Wtsi>/J	8	8	16	8	8	16	8	8	16	48
Hdac10<tm1.1(KOMP)Mbp>/J	8	8	16	7	8	15	8	8	16	47
Hspb2<tm1.1(KOMP)Vlcl>/J	8	3	11	8	7	15	8	6	14	40
Htr1a<tm1.1(KOMP)Vlcl>/J	8	8	16	11	8	19	8	8	16	51
Il12rb2<tm1.1(KOMP)Vlcl>/J	8	8	16	8	8	16	8	8	16	48
Lpar6<tm1.1(KOMP)Vlcl>/J	3	3	6							6
Parp8<tm1.1(KOMP)Wtsi>/J	6	6	12	8	8	16	9	7	16	44
Pitx3<tm1.1(KOMP)Vlcl>/J	2	2	4	5	5	10	8	8	16	30
Pnmt<-tm1.1(KOMP)Vlcl>/J	3	3	6							6
Rilpl2<tm1b(KOMP)Wtsi>/J	8	8	16	8	8	16	8	8	16	48
Grand Total	165	156	321	161	159	320	157	153	310	951

Supplementary Table 2: Strain Sample Sizes Two Bottle Drug Second Screen

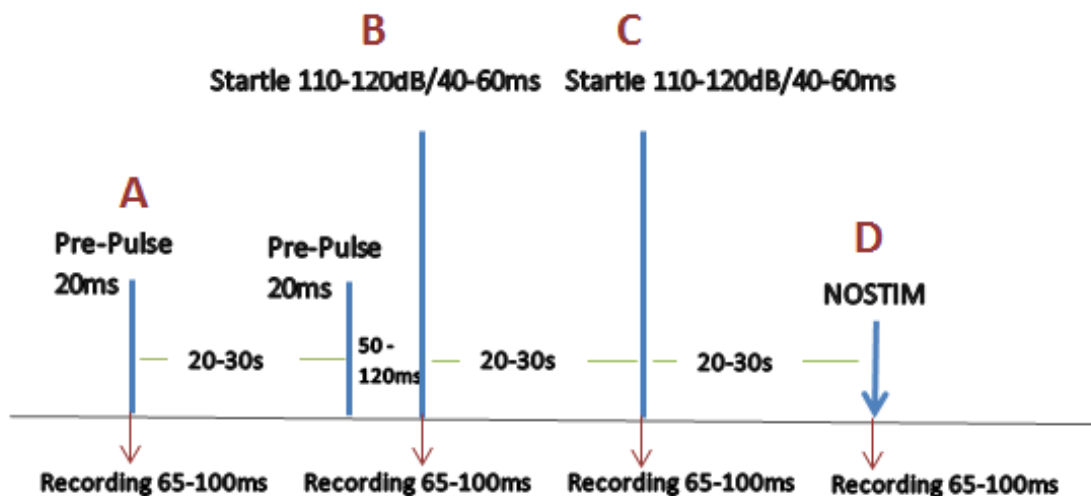
Strain	Female	Male	Grand Total
Bmerb1	7	8	15
C3	8	8	16
C57BL/6J	15	16	31
C57BL/6J-Taarl	8	8	16
C57BL/6NJ	19	20	39
Cp	8	8	16
DBA/2J	8	8	16
DBA/2J-Taarl	8	8	16
Dnaja4	8	4	12
Dnmt3a	9	8	17
Elof1	8	8	16
Gpr142	8	8	16
Htr7	8	8	16
Irf8	8	8	16
Lrrc15	8	8	16
Myh10	8	8	16
Nr2f1	8	8	16
Rap2b	8	8	16
Stk36	8	8	16
Stx19	8	8	16
Tac-Trib3	8	8	16
Tmod2	8	8	16
Zbtb4	8	8	16
Grand Total	202	200	402

Supplementary Table 3: Strain Sample Sizes Drinking in the Dark Second Screen

Strain	Female	Male	Grand Total
B6N(Cg)-Cptm1b(KOMP)Wtsi/J	8	8	16
B6N(Cg)-Dnaja4tm1b(KOMP)Wtsi/J	8	7	15
B6N(Cg)-Elof1tm1.1(KOMP)Vlcg/J	8	8	16
B6N(Cg)-Lrrc15tm1b(KOMP)Wtsi/J	8	8	16
B6N(Cg)-Nr2f1<tm1.1(KOMP)Mbp>/J	8	7	15
B6N(Cg)-Rap2btm1.1(KOMP)Vlcg/J	8	8	16
B6N(Cg)-Stx19tm1.1(KOMP)Vlcg/2J	8	8	16
B6N(Cg)-Zbtb4tm1.1(KOMP)Vlcg/J	8	8	16
C3<Vlcg>/J	8	8	16
C57BL/6J	10	10	20
C57BL/6J-Fam53b<em5Ejc>/Ejc (-/-)	7	6	13
C57BL/6J-Taar1	8	9	17
C57BL/6NJ	18	18	36
C57BL/6NJ- Tmod2	8	7	15
C57BL/6NJ/Tac-Trib3	8	8	16
C57BL/6NJ-Myh10<em1J>/J	8	8	16
C57BL/6NJ-Stk36em1(IMPC)J/J	8	8	16
DBA/2J	8	8	16
DBA/2J-Taar1	8	8	16
Dnmt3a<Wtsi>/J	5	5	10
Gpr142<Vlcg>/J	8	8	16
Htr7<Wtsi>/J	8	8	16
Irf8<Wtsi>/J	8	8	16
Grand Total	192	189	381

Supplementary Table 4: Acoustic startle/Prepulse Inhibition Trials

Table 1: Pseudorandom trial orders and experimental Design	
Trial # 1: KOMP_120dBpulse	Trial # 14: KOMP_nostim
Trial # 2: KOMP_90dBpre120dBpulse	Trial # 15: KOMP_120dBpulse
Trial # 3: KOMP_78dBpre120dBpulse	Trial # 16: KOMP_78dBpre
Trial # 4: KOMP_74dBpre	Trial # 17: KOMP_78dBpre120dBpulse
Trial # 5: KOMP_82dBpre	Trial # 18: KOMP_82dBpre
Trial # 6: KOMP_90dBpre	Trial # 19: KOMP_74dBpre
Trial # 7: KOMP_nostim	Trial # 20: KOMP_74dBpre120dBpulse
Trial # 8: KOMP_82dBpre120dBpulse	Trial # 21: KOMP_82dBpre
Trial # 9: KOMP_78dBpre	Trial # 22: KOMP_78dBpre
Trial # 10: KOMP_74dBpre120dBpulse	Trial # 23: KOMP_78dBpre120dBpulse
Trial # 11: KOMP_90dBpre	Trial # 24: KOMP_74dBpre120dBpulse
Trial # 12: KOMP_82dBpre120dBpulse	Trial # 25: KOMP_82dBpre120dBpulse
Trial # 13: KOMP_90dBpre120dBpulse	Trial # 26: KOMP_90dBpre
Trial # 27: KOMP_74dBpre	Trial # 44: KOMP_74dBpre
Trial # 28: KOMP_120dBpulse	Trial # 45: KOMP_78dBpre
Trial # 29: KOMP_nostim	Trial # 46: KOMP_74dBpre120dBpulse
Trial # 30: KOMP_90dBpre120dBpulse	Trial # 47: KOMP_78dBpre120dBpulse
Trial # 31: KOMP_78dBpre120dBpulse	Trial # 48: KOMP_82dBpre120dBpulse
Trial # 32: KOMP_82dBpre120dBpulse	Trial # 49: KOMP_90dBpre120dBpulse
Trial # 33: KOMP_78dBpre	Trial # 50: KOMP_120dBpulse
Trial # 34: KOMP_120dBpulse	Trial # 51: KOMP_82dBpre120dBpulse
Trial # 35: KOMP_90dBpre	Trial # 52: KOMP_90dBpre
Trial # 36: KOMP_74dBpre120dBpulse	Trial # 53: KOMP_82dBpre
Trial # 37: KOMP_74dBpre	Trial # 54: KOMP_78dBpre
Trial # 38: KOMP_nostim	Trial # 55: KOMP_74dBpre
Trial # 39: KOMP_90dBpre120dBpulse	Trial # 56: KOMP_120dBpulse
Trial # 40: KOMP_82dBpre	Trial # 57: KOMP_90dBpre120dBpulse
Trial # 41: KOMP_90dBpre	Trial # 58: KOMP_78dBpre120dBpulse
Trial # 42: KOMP_nostim	Trial # 59: KOMP_74dBpre120dBpulse
Trial # 43: KOMP_82dBpre	Trial # 60: KOMP_nostim



The different type of trials of the acoustic startle & pre-pulse inhibition test. A: pre-pulse alone (PP1, PP2, PP3 and PP4), B: startle preceded by pre-pulse (PP1-S, PP2-S, PP3-S and PP4-S), C: startle alone and D: NOSTIM.

Supplementary Table 6: GeneWeaver GeneSets that overlap significant knockout genes

Hdac10			
	GS233344	KEGG Geneset	"Alcoholism" pathway genes,
	GS233499	KEGG Geneset	"Alcoholism" pathway genes
	GS233931	KEGG Geneset	"Alcoholism" pathway genes
	GS86789	[DRG]	Table S1: Cocaine Regulation of H3 Acetylation. (provisional)
Lpar6			
	GS86977	[DRG]	Table S1: All transcripts significantly different in abundance between the majority of heroin subjects and their matched controls (provisional)

	GS84277	(Published QTL)	METH responses for home cage activity
	GS84278	(Published QTL)	chronic alcohol withdrawal severity
	GS84278	(Published QTL)	chronic alcohol withdrawal severity
	GS84279	(Published QTL)	METH responses for climbing
C1qa			
	GS86977	[DRG]	Table S1: All transcripts significantly different in abundance between the majority of heroin subjects and their matched controls (provisional)
	GS87058	[DRG]	Table S2: Cocaine Regulation of H4 Acetylation. (provisional)
	GS243385	[MeSH]	Dose-Response Relationship, Drug : D004305
	GS235349	[MeSH]	Physiological Effects of Drugs : D045505
	GS1243	Differential Expression	KCgamma wild-type expression changes due to chronic ethanol diet
	GS83985	(Published QTL)	cocaine related behavior 16
	GS14933	Differential Expression	Upregulated gene expression of PKC-gamma wild type mice due to chronic ethanol diet
	GS84164	(Published QTL)	cocaine related behavior
	GS83998	(Published QTL)	cocaine and amphetamine-regulated transcript
Cp			
	GS87096	[DRG]	Table S2: List of Cocaine-Treated HDAC5 KO vs. Cocaine-Treated WT Significantly Regulated Genes. (Provisional)
	GS87041	[DRG]	Table S3: List of Cocaine-Treated HDAC5 KO vs. Saline-Treated HDAC5 KO Significantly Regulated Genes. (provisional)
	GS243385	[MeSH]	Dose-Response Relationship, Drug : D004305
	GS235349	[MeSH]	Physiological Effects of Drugs : D045505
Btg2			
	GS86789	[DRG]	Table S1: Cocaine Regulation of H3 Acetylation. (provisional)
	GS243385	[MeSH]	Dose-Response Relationship, Drug : D004305

	GS235349	[MeSH]	Physiological Effects of Drugs : D045505
	GS1243	Differential Expression	KCgamma wild-type expression changes due to chronic ethanol diet
	GS14933	Differential Expression	Upregulated gene expression of PKC-gamma wild type mice due to chronic ethanol diet
	GS37147	Differential Expression	Gene expression change in the nucleus accumbens, following continuous alcohol consumption in alcohol preferring rats.
Cfb			
	GS87128	[DRG]	Table S1: Genes with significant alterations in expression following acute nicotine treatment in VTA.
	GS243385	[MeSH]	Dose-Response Relationship, Drug : D004305
	GS235349	[MeSH]	Physiological Effects of Drugs : D045505
	GS127417	Differential Expression	Chronic alcohol exposure induced gene expression changes in the zebrafishbrain
	GS84303	(Published QTL)	differences in cocaine responsiveness
	GS84300	(Published QTL)	METH responses for body temperature
	GS84303	(Published QTL)	differences in cocaine responsiveness
	GS213106	Differential Expression	Chronic Alcohol HepG2
	GS84301	(Published QTL)	ethanol conditioned taste aversion
	GS83968	(Published QTL)	cocaine induced activation 13
	GS239299	[MeSH]	Drug Interactions : D004347
	GS135650	(Published QTL)	cocaine induced activation 13
	GS84302	(Published QTL)	differences in cocaine responsiveness
Dnajb3			
	GS87011	[DRG]	Table S2: List of Cocaine-Treated HDAC5 KO vs. Cocaine-Treated WT Significantly Regulated Genes.
	GS75590	Differential Expression	Cocaine Regulation of Dimethyl-K9/K27 H3
	GS83978	(Published QTL)	cocaine related behavior 1

	GS83973	(Published QTL)	cocaine induced activation 5
	GS84103	(Published QTL)	chronic alcohol withdrawal severity Chr1 at D1Mit46
	GS135653	(Published QTL)	cocaine induced activation 5
	GS135293	(Published QTL)	alcohol withdrawal 5
Hspb2			
	GS87011	[DRG]	Table S2: List of Cocaine-Treated HDAC5 KO vs. Cocaine-Treated WT Significantly Regulated Genes.
	GS31782	Differential Expression	Gene Expression Correlations with Hippocampus Consortium M430v2 (Jun06) RMA for Localization of genes affecting alcohol drinking in mice Phillips et al
	GS235349	[MeSH]	Physiological Effects of Drugs : D045505
Il12rb2			
	GS84180	(Published QTL)	METH responses for body temperature
	GS84181	(Published QTL)	ethanol induced locomotion
	GS84182	(Published QTL)	METH responses for home cage activity
	GS84179	(Published QTL)	cocaine related behavior
	GS135789	(Published QTL)	ethanol induced locomotor activity 2
	GS243385	[MeSH]	Dose-Response Relationship, Drug : D004305
	GS83991	(Published QTL)	cocaine related behavior 7
	GS235349	[MeSH]	Physiological Effects of Drugs : D045505
Parp8			
	GS128167	Differential Expression	Table S1: Genes differentially expressed in Lewis vs. Fisher nucleus accumbens shell GABA projection neurons
	GS246373	Differential Expression	Differential Expression Hippocampus Human Alcoholic
Dnase1l2			
	GS84300	(Published QTL)	METH responses for body temperature

	GS84301	(Published QTL)	ethanol conditioned taste aversion
	GS83968	(Published QTL)	cocaine induced activation 13
	GS83971	(Published QTL)	cocaine induced activation 3
	GS84298	(Published QTL)	cocaine induced activation
	GS135650	(Published QTL)	cocaine induced activation 13
	GS84302	(Published QTL)	differences in cocaine responsiveness
	GS36452	Differential Expression	Whole Brain Gene expression correlates of Morphine - Postural Effects in Females & Males BXD
	GS36477	Differential Expression	Whole Brain Gene expression correlates of Morphine - Severity of ptosis in Males BXD
	GS36457	Differential Expression	Whole Brain Gene expression correlates of Morphine - Postural Effects in Females BXD
Htr1a			
	GS243385	[MeSH]	Dose-Response Relationship, Drug : D004305
	GS235349	[MeSH]	Physiological Effects of Drugs : D045505
	GS242550	[MeSH]	Alcoholism : D000437
	GS324475	GO	0008144 drug binding
	GS332669	GO	0017144 drug metabolic process
	GS269429	GWAS	Catalog Data for alcohol and nicotine codependence in 818 European ancestry cases, 1,396 European ancestry controls
	GS246373	Differential Expression	Differential Expression Hippocampus Human Alcoholic
	GS236764	[MeSH]	Drug-Related Side Effects and Adverse Reactions : D064420
	GS239299	[MeSH]	Drug Interactions : D004347
	GS242397	[MeSH]	Psychotropic Drugs : D011619
Rilpl2			
	GS135737	(Published QTL)	dopamine receptor binding 2
	GS136242	(Published QTL)	methamphetamine response QTL 1

	GS84174	(Published QTL)	METH responses for chewing
	GS135490	(Published QTL)	behavioral response to methamphetamines 3
	GS135655	(Published QTL)	cocaine induced activation 7
	GS83975	(Published QTL)	cocaine induced activation 7
	GS84173	(Published QTL)	differences in cocaine responsiveness
	GS84172	(Published QTL)	cocaine related behavior
	GS246375	Differential Expression	H3K4me3 ChIP Seq Hippocampus Human Alcoholics
	GS84175	(Published QTL)	METH responses for climbing
	GS84176	(Published QTL)	METH responses for climbing
Far2			
	GS84189	(Published QTL)	ethanol conditioned taste aversion
	GS127346	Differential Expression	Transcripts differentially regulated in hippocampus of C57BL/6J mice drinking to intoxication.
	GS84190	(Published QTL)	METH responses for body temperature
Pnmt			
	GS235349	[MeSH]	Physiological Effects of Drugs : D045505
	GS136244	(Published QTL)	methamphetamine response QTL 3
	GS327758	GO	0035690 cellular response to drug
	GS318209	GO	0017144 drug metabolic process
	GS326077	GO	0042493 response to drug
	GS135823	(Published QTL)	ethanol conditioned taste aversion 9
	GS37188	(Published QTL)	Positional candidate on Chromosome 11 (30-110 Mb) for dominant deviation measuring EtOH consumption during Drinking in the Dark (DID), 24 hour access and Blood Ethanol Concentration (BEC).

Cp	GS87096	[DRG]	Table S2: List of Cocaine-Treated HDAC5 KO vs. Cocaine-Treated WT Significantly Regulated Genes. (Provisional)
	GS87041	[DRG]	Table S3: List of Cocaine-Treated HDAC5 KO vs. Saline-Treated HDAC5 KO Significantly Regulated Genes. (provisional)
	GS243385	[MeSH]	Dose-Response Relationship, Drug : D004305
	GS235349	[MeSH]	Physiological Effects of Drugs : D045505
	GS84144	(Published QTL)	METH responses for home cage activity (Published QTL, Chr 3)
	GS84146	(Published QTL)	METH responses for home cage activity (Published QTL, Chr 3)
	GS128161	Differential Expression	Nucleus accumbens Methamphetamine and reward
	GS35864	Differential Expression	Neocortex Gene expression correlates of Cocaine CPP - difference in percent test time spent relative to preconditioning in Females BXD
	GS243385:	[MeSH]	Dose-Response Relationship, Drug : D004305
	GS86932	[DRG]	Table S3: CORTEX 17K MICROARRAY
	GS86494	[DRG]	Table S3: CORTEX 17K MICROARRAY
	GS243385	[MeSH]	Dose-Response Relationship, Drug : D004305
	GS128199		Alcohol Preference union of 86 Gene Sets
	GS135133	Differential Expression	bHR vs bLR genes different in Hippocampus
	GS135132	Differential Expression	bHR vs bLR genes different in Nucleus Acumbens
Dnaja4	GS14888	Differential Expression	Differentially expressed genes modulated by nicotine in five combined brain regions (Amygdala, Hippocampus, Nucleus Accumbens, Pre Frontal Cortex and Ventral Tegmental Area) for C3H/HeJ mice
	GS135660	(Published QTL)	cocaine related behavior 8 (Cocrb8, Published QTL Chr 9)
	GS135821	(Published QTL)	ethanol consumption 3 (Etohc3, Published QTL Chr 9)
	GS135647	(Published QTL)	cocaine induced activation 10 (Cocia10, Published QTL Chr 9)

	GS84219	(Published QTL)	cocaine related behavior (Published QTL, Chr 9)
	GS84218	(Published QTL)	differences in cocaine responsiveness (Published QTL, Chr 9)
	GS84217	(Published QTL)	differences in cocaine responsiveness (Published QTL, Chr 9)
	GS84208	(Published QTL)	METH responses for home cage activity (Published QTL, Chr 9)
	GS14914	Differential Expression	Differentially expressed genes in morphine-treated vs. saline-treated peripheral blood mononuclear cells (PBMCs)
	GS128199		Alcohol Preference union of 86 Gene Sets
	GS135133	Differential Expression	bHR vs bLR genes different in Hippocampus
	GS135132	Differential Expression	bHR vs bLR genes different in Nucleus Acumbens
Dnmt3a	GS243385:	[MeSH]	Dose-Response Relationship, Drug : D004305
	GS86932	[DRG]	Table S3: CORTEX 17K MICROARRAY
	GS86494	[DRG]	Table S3: CORTEX 17K MICROARRAY
	GS243385	[MeSH]	Dose-Response Relationship, Drug : D004305
	GS34054	Differential Expression	Hippocampus Gene expression correlates of Open Field locomotion (cm) 45-60 min post cocaine in Males BXD
	GS34322	Differential Expression	Hippocampus Gene expression correlates of Cocaine TOTAL locomotion (activity beam breaks) in Males BXD
	GS34005	Differential Expression	Hippocampus Gene expression correlates of Open Field locomotion 15-30 min post cocaine in Males BXD
	GS34332	Differential Expression	Hippocampus Gene expression correlates of Cocaine TOTAL locomotion (cm in 1 hr) in Males BXD
	GS246394	Differential Expression	Human hippocampus chronically exposed to cocaine
	GS84261	(Published QTL)	ethanol withdrawal (Published QTL, Chr 12)
	GS86746	[DRG]	Table S5: List of Cocaine-Treated WT vs. Saline-Treated WT Significantly Regulated Genes. [DRG]

	GS246374	Differential Expression	Differential Expression Hippocampus Human Cocaine Addicts
	GS128199		Alcohol Preference union of 86 Gene Sets
Htr7	GS243385:	[MeSH]	Dose-Response Relationship, Drug : D004305
	GS243385	[MeSH]	Dose-Response Relationship, Drug : D004305
	GS242397	[MeSH]	Psychotropic Drugs : D011619
	GS14914	Differential Expression	Differentially expressed genes in morphine-treated vs. saline-treated peripheral blood mononuclear cells (PBMCs)
	GS242550	[MeSH]	Alcoholism : D000437
	GS84314	(Published QTL)	METH responses for body temperature (Published QTL, Chr 19)
	GS236200	[MeSH]	Neurotransmitter Uptake Inhibitors : D014179
	GS246374	Differential Expression	Differential Expression Hippocampus Human Cocaine Addicts
	GS128199		Alcohol Preference union of 86 Gene Sets
	GS135133	Differential Expression	bHR vs bLR genes different in Hippocampus
	GS135132	Differential Expression	bHR vs bLR genes different in Nucleus Accumbens
Irf8	GS243385:	[MeSH]	Dose-Response Relationship, Drug : D004305
	GS86932	[DRG]	Table S3: CORTEX 17K MICROARRAY
	GS86494	[DRG]	Table S3: CORTEX 17K MICROARRAY
	GS243385	[MeSH]	Dose-Response Relationship, Drug : D004305
	GS1139	Differential Expression	Differential expression response 4 hr after 2g/kg ethanol in C57BL/6J and DBA/2J
	GS246374	Differential Expression	Differential Expression Hippocampus Human Cocaine Addicts
	GS128199		Alcohol Preference union of 86 Gene Sets
	GS135133	Differential Expression	bHR vs bLR genes different in Hippocampus

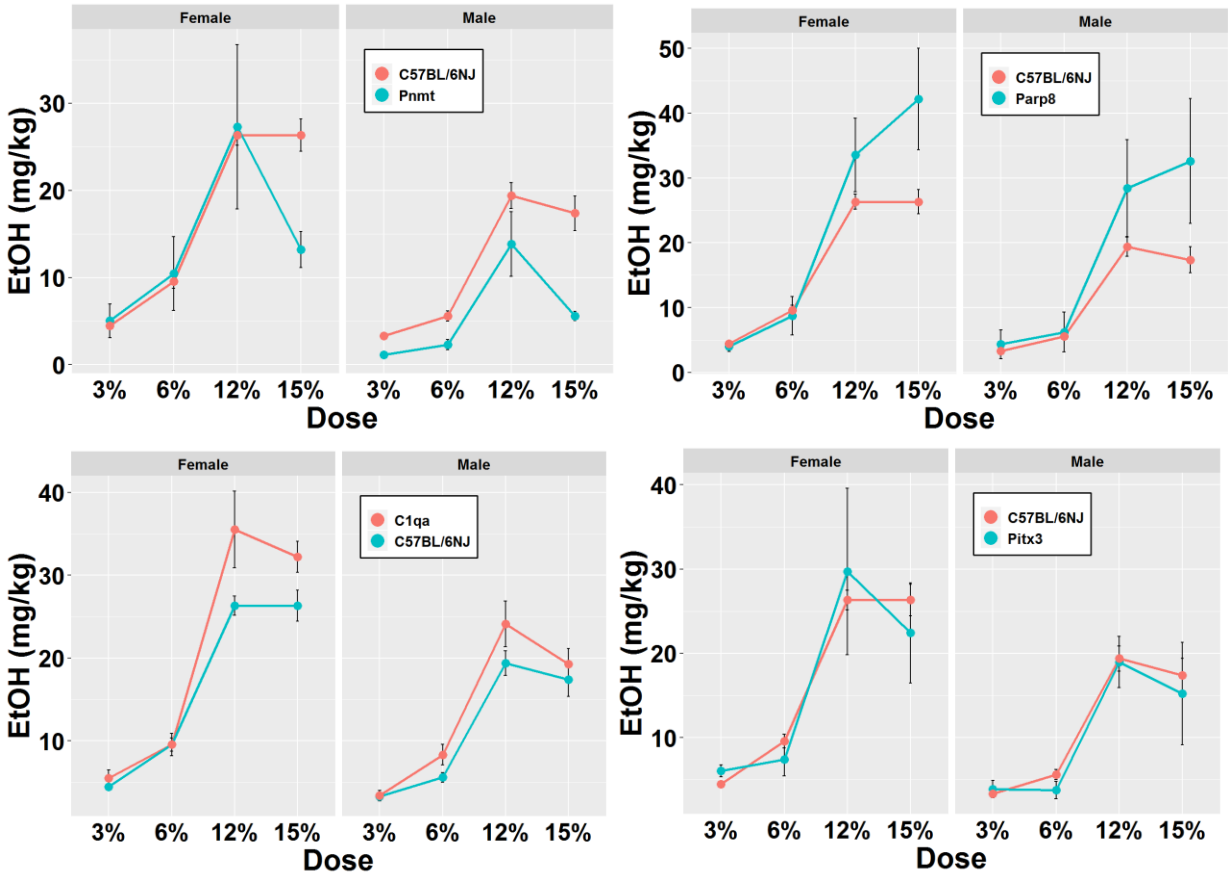
	GS135132	Differential Expression	bHR vs bLR genes different in Nucleus Acumbens
Lrrc15	GS84293	(Published QTL)	METH responses for home cage activity (Published QTL, Chr 16)
	GS35781	Differential Expression	Cerebellum Gene expression correlates of CPP - Time (s) in drug-paired compartment a in Males BXD
Myh10	GS37188	(Published QTL)	Positional candidate on Chromosome 11 (30-110 Mb) for dominant deviation measuring EtOH consumption during Drinking in the Dark (DID), 24 hour access and Blood Ethanol Concentration (BEC).
	GS84251	(Published QTL)	chronic alcohol withdrawal severity (Published QTL, Chr 11)
	GS243385:	[MeSH]	Dose-Response Relationship, Drug : D004305
	GS135823	(Published QTL)	ethanol conditioned taste aversion 9 (EtOhcta9, Published QTL Chr 11)
	GS37187	(Published QTL)	Positional candidate on chromosome 11 (59-79Mb) for overdominant effect for 24-hour, 2 bottle choice 30g/kg EtOH excessive consumption.
	GS86932	[DRG]	Table S3: CORTEX 17K MICROARRAY
	GS86494	[DRG]	Table S3: CORTEX 17K MICROARRAY
	GS243385	[MeSH]	Dose-Response Relationship, Drug : D004305
	GS127342	Differential Expression	Transcripts differentially regulated in frontal cortex of C57BL/6J mice drinking to intoxication.
	GS75588	Differential Expression	Cocaine Regulation of H3 Acetylation
	GS137407	Differential Expression	Supplementary Table 2. Overall results of WGCNA combined with differential expression between alcoholics and controls
	GS313343	Gene Ontology	GO:0008144 drug binding
	GS36154	Differential Expression	Neocortex Gene expression correlates of Locomotor response of 10 mg/kg MDMA injected on Day 2 in Females & Males BXD
	GS75588	Differential Expression	Cocaine Regulation of H3 Acetylation

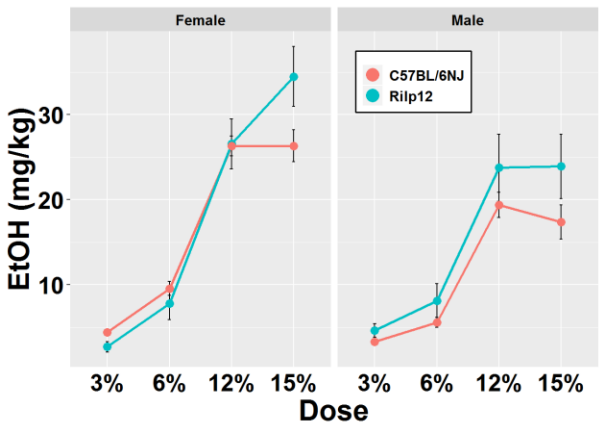
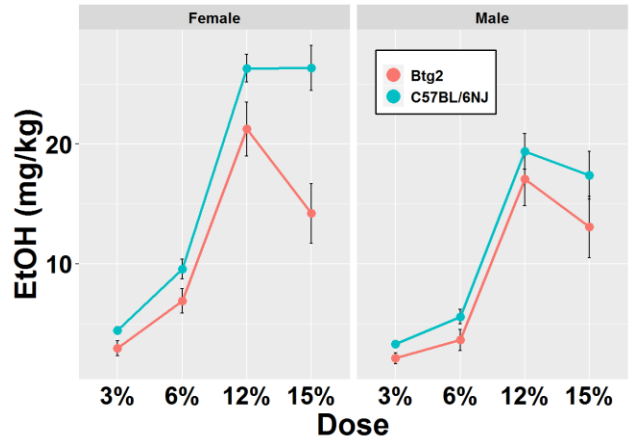
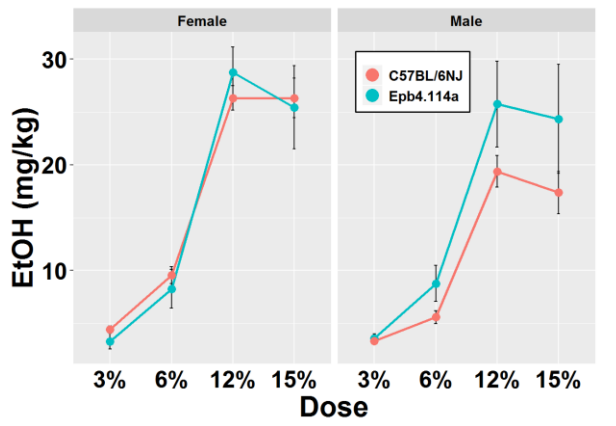
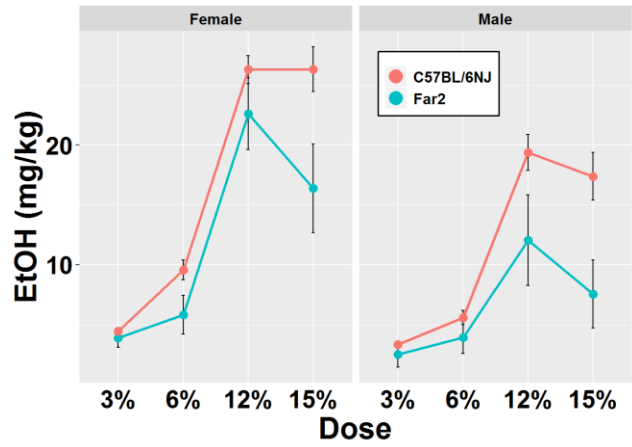
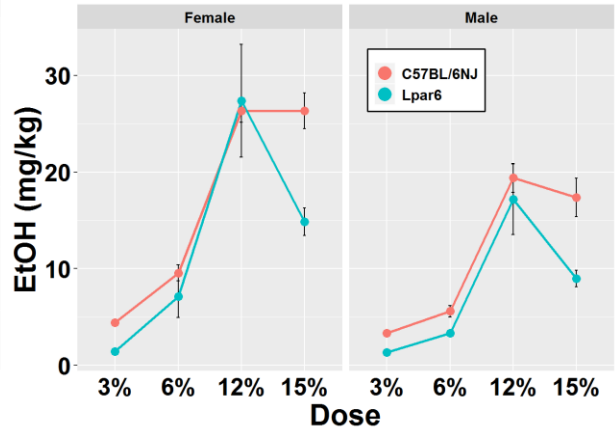
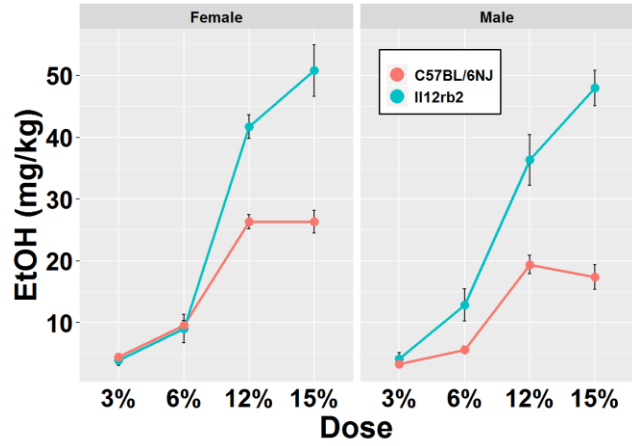
	GS128199		Alcohol Preference union of 86 Gene Sets
	GS135133	Differential Expression	bHR vs bLR genes different in Hippocampus
	GS135132	Differential Expression	bHR vs bLR genes different in Nucleus Acumbens
Rap2b	GS84146	(Published QTL)	METH responses for home cage activity (Published QTL, Chr 3)
	GS243385:	[MeSH]	Dose-Response Relationship, Drug : D004305
	GS84147	(Published QTL)	ethanol conditioned taste aversion (Published QTL, Chr 3)
	GS86932	[DRG]	Table S3: CORTEX 17K MICROARRAY
	GS86494	[DRG]	Table S3: CORTEX 17K MICROARRAY
	GS243385	[MeSH]	Dose-Response Relationship, Drug : D004305
	GS246373	Differential Expression	Differential Expression Hippocampus Human Alcoholic
	GS246394	Differential Expression	Human hippocampus chronically exposed to cocaine
	GS128199		Alcohol Preference union of 86 Gene Sets
Tmod2	GS35864	Differential Expression	Neocortex Gene expression correlates of Cocaine CPP - difference in percent test time spent relative to preconditioning in Females BXD
	GS14917	Differential Expression	Upregulation of gene expression in the lateral hypothalamus of Wild Type (WT) mice following administration of chronic morphine
	GS135660	(Published QTL)	cocaine related behavior 8 (Cocrb8, Published QTL Chr 9)
	GS135821	(Published QTL)	ethanol consumption 3 (Etohc3, Published QTL Chr 9)
	GS14916	Differential Expression	Mu opioid receptor-dependent genes regulated by chronic morphine in the lateral hypothalamus (LH)
	GS86932	[DRG]	Table S3: CORTEX 17K MICROARRAY
	GS86494	[DRG]	Table S3: CORTEX 17K MICROARRAY

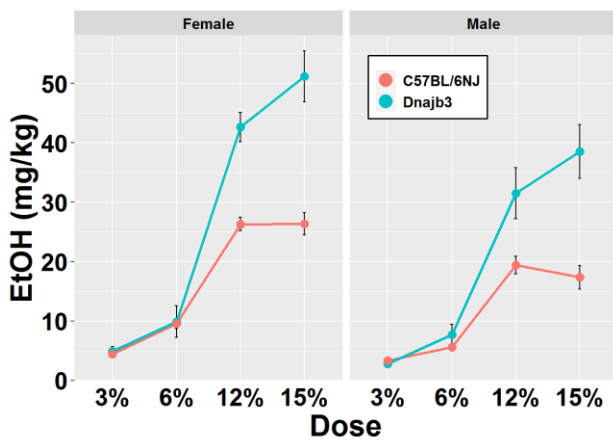
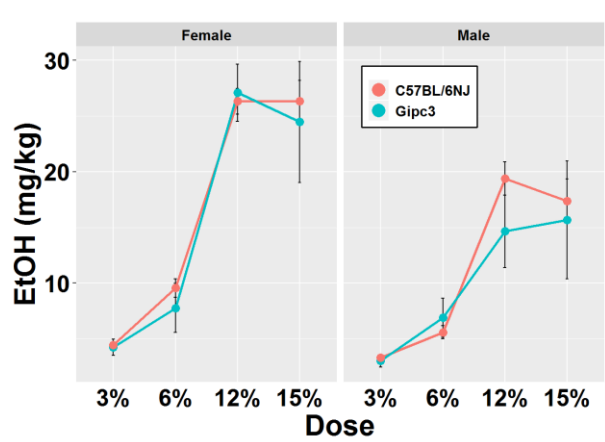
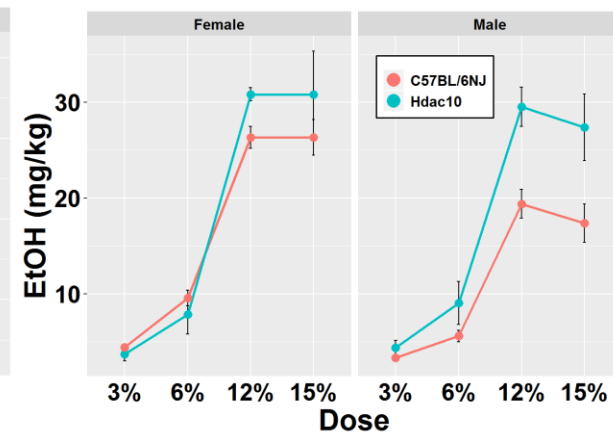
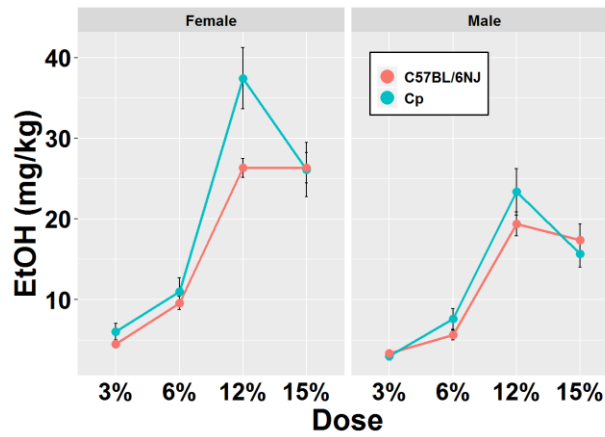
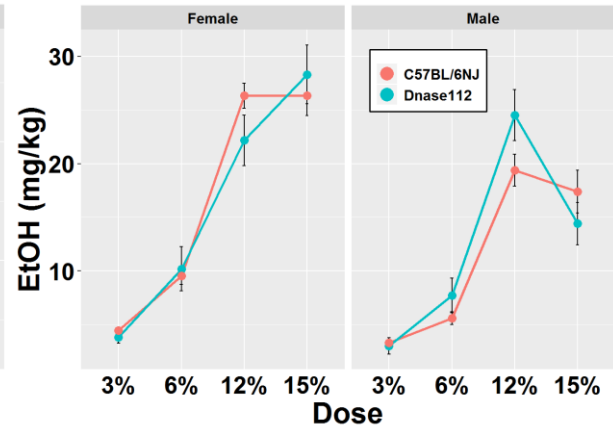
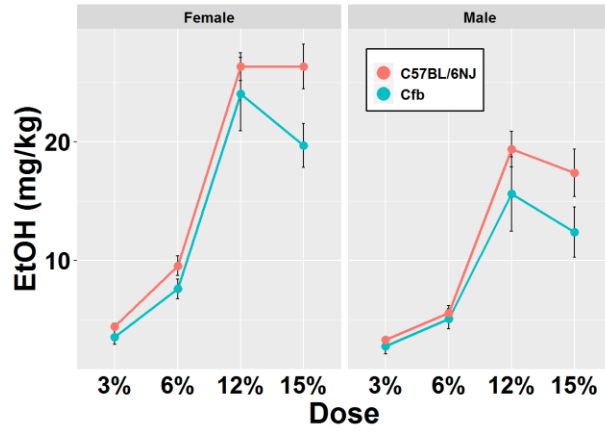
	GS75567	Differential Expression	Genes that were significantly different in the nucleus accumbens of iP rats between the ethanol and water groups
	GS14929	Differential Expression	Ethanol-dependence genes in the nucleus accumbens (NA) of inbred alcohol-preferring
	GS75589	Differential Expression	Cocaine Regulation of H4 Acetylation
	GS137562	Differential Expression	Genes significantly differentially expressed in P7 selected High-responder (bHR) vs. Low-responder (bLR) in the hippocampus of Sprague-Dawley rats.
	GS128223	Differential Expression	Proteins found to be modified by at least two drugs of abuse
	GS135822	(Published QTL)	ethanol conditioned taste aversion 8 (Etohcta8, Published QTL Chr 9)
	GS84219	(Published QTL)	cocaine related behavior (Published QTL, Chr 9)
	GS84218	(Published QTL)	differences in cocaine responsiveness (Published QTL, Chr 9)
	GS84217	(Published QTL)	differences in cocaine responsiveness (Published QTL, Chr 9)
	GS246374	Differential Expression	Differential Expression Hippocampus Human Cocaine Addicts
	GS128199		Alcohol Preference union of 86 Gene Sets
	GS135133	Differential Expression	bHR vs bLR genes different in Hippocampus
	GS135132	Differential Expression	bHR vs bLR genes different in Nucleus Acumbens
Zbtb4	GS37188	(Published QTL)	Positional candidate on Chromosome 11 (30-110 Mb) for dominant deviation measuring EtOH consumption during Drinking in the Dark (DID), 24 hour access and Blood Ethanol Concentration (BEC).
	GS84251	(Published QTL)	chronic alcohol withdrawal severity (Published QTL, Chr 11)
	GS135823	(Published QTL)	ethanol conditioned taste aversion 9 (Etohcta9, Published QTL Chr 11)
	GS37187	(Published QTL)	Positional candidate on chromosome 11 (59-79Mb) for overdominant effect for 24-hour, 2 bottle choice 30g/kg EtOH excessive consumption.

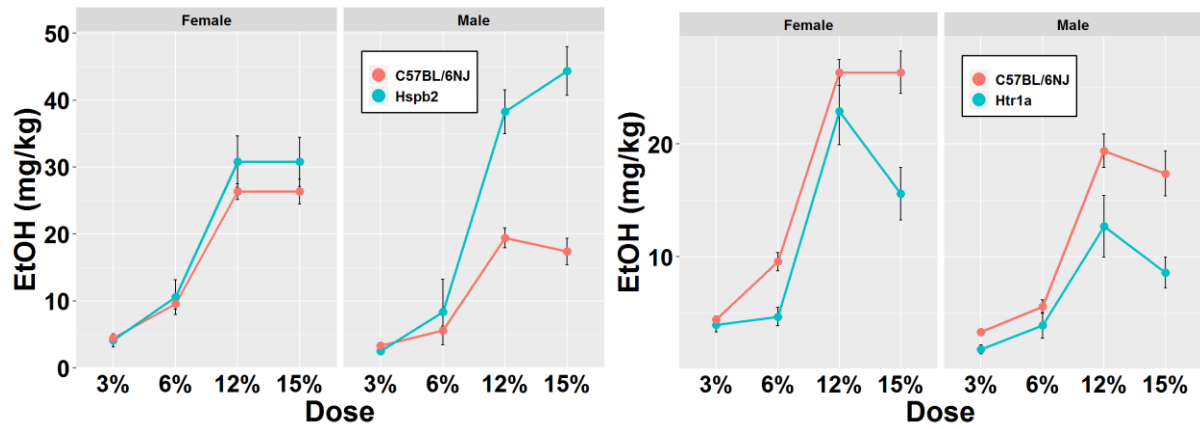
	GS137413	Differential Expression	Supplementary Table 2. CNA Overall results of WGCNA combined with differential expression between alcoholics and controls
	GS246376	Differential Expression	H3K4me3 ChIP Seq Hippocampus Human Cocaine Addicts
	GS246376	Differential Expression	H3K4me3 ChIP Seq Hippocampus Human Cocaine Addicts
	GS246373	Differential Expression	Differential Expression Hippocampus Human Alcoholic

Supplemental Panel 1: EtOH consumption

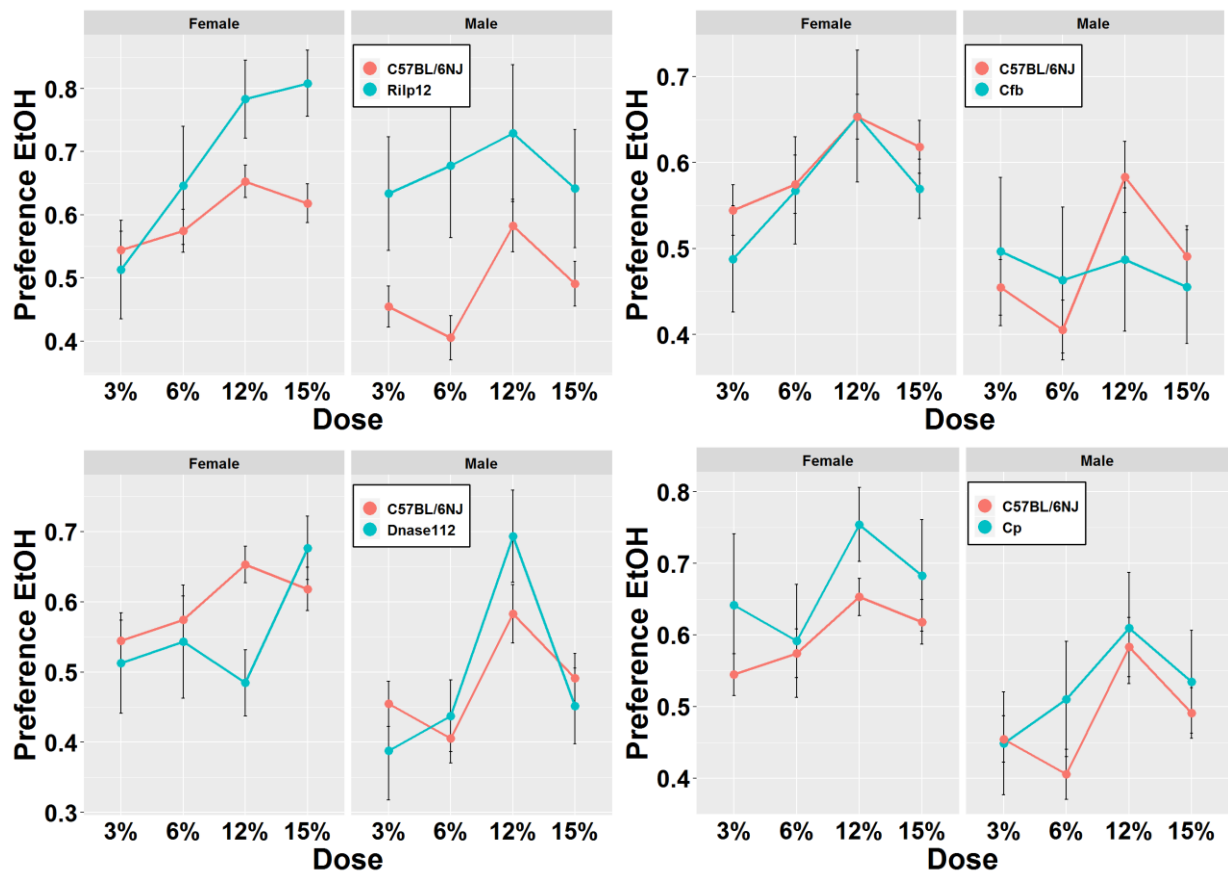


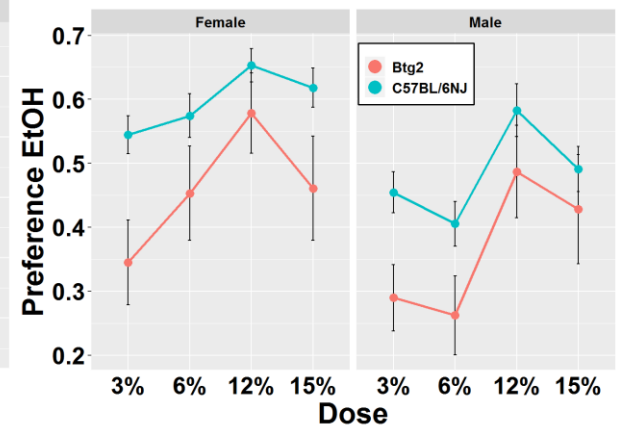
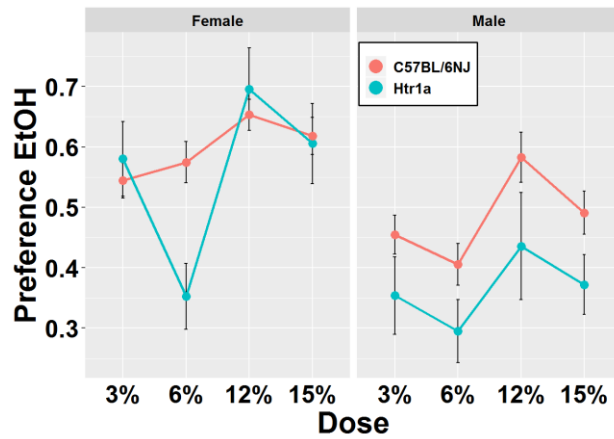
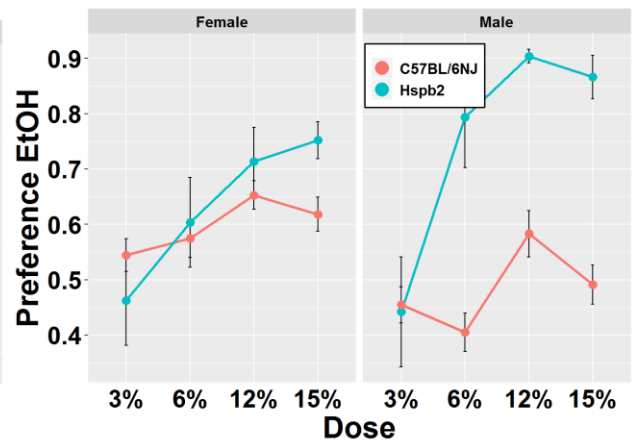
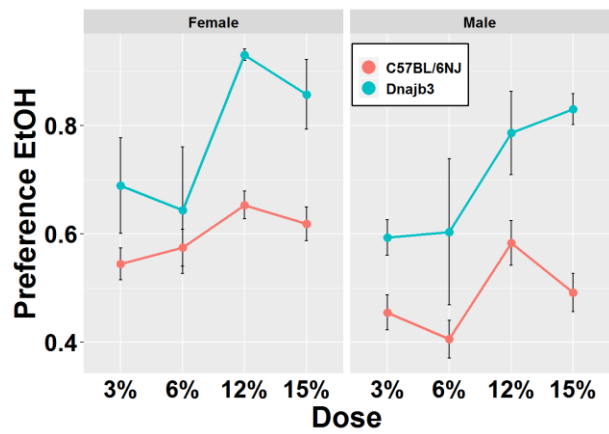
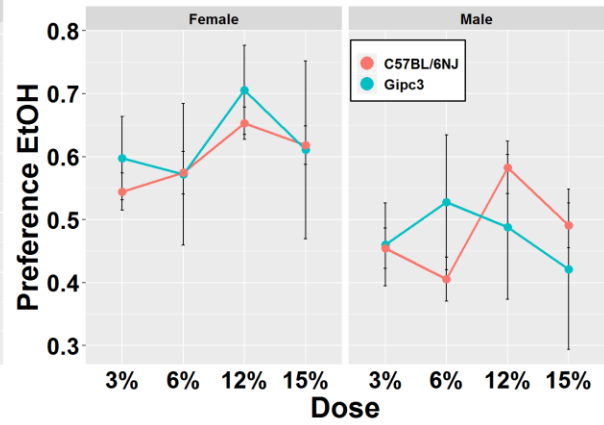
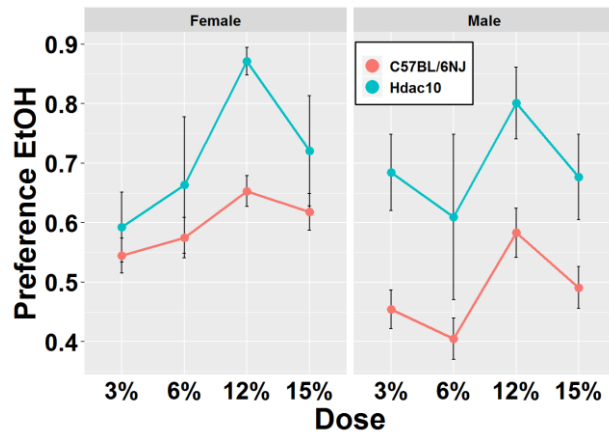


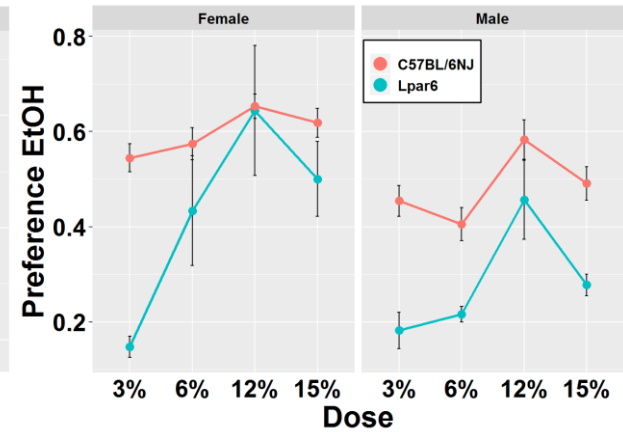
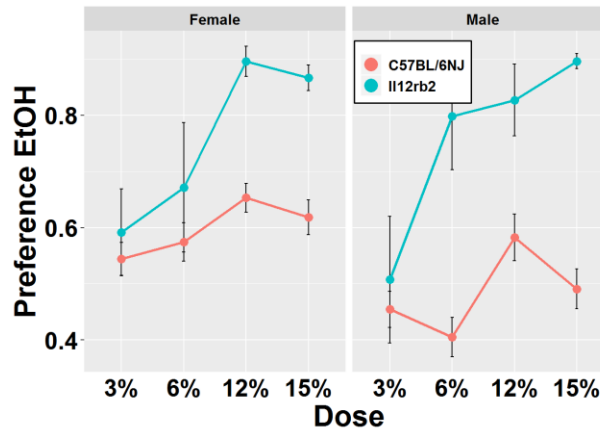
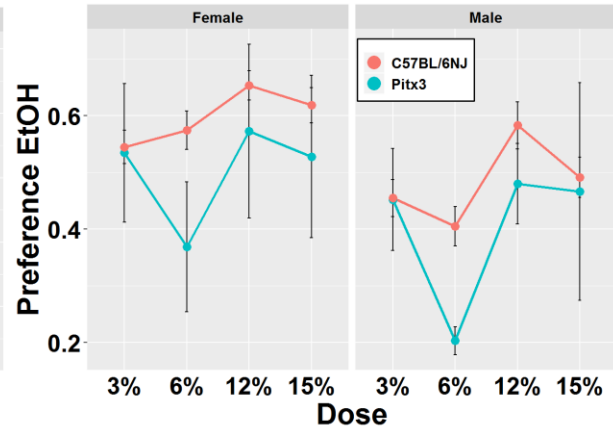
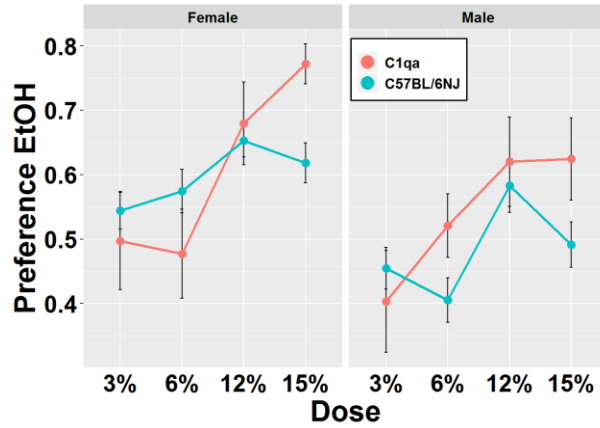
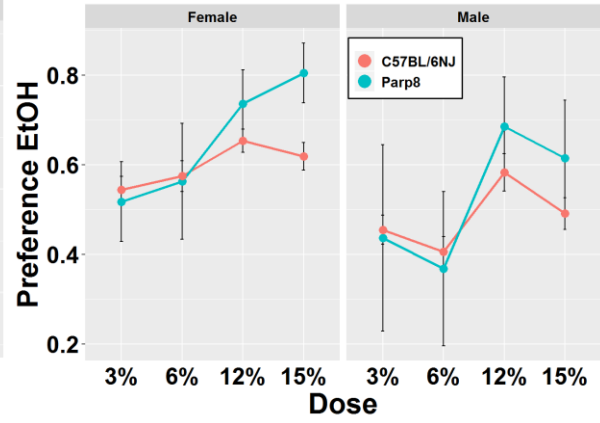
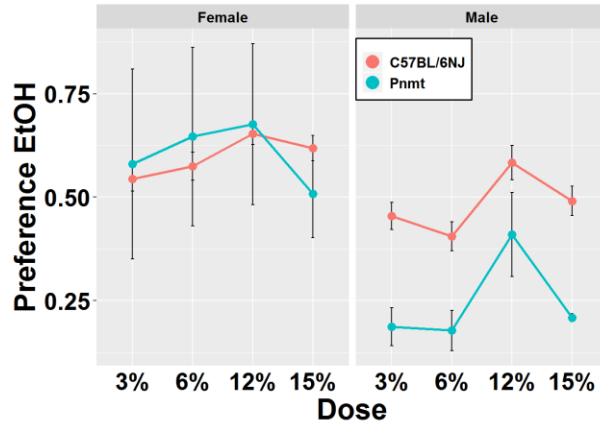


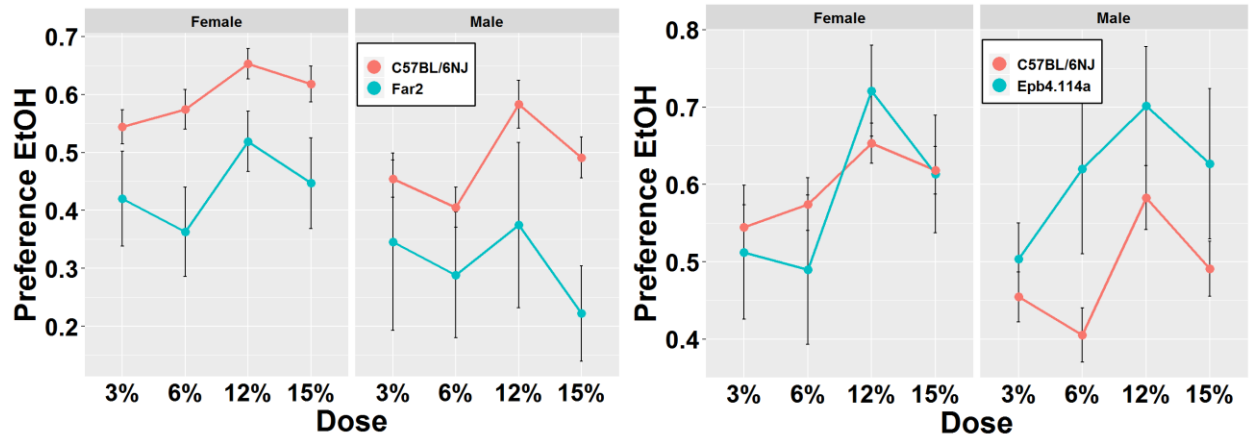


Supplemental Panel 2: EtOH Preference

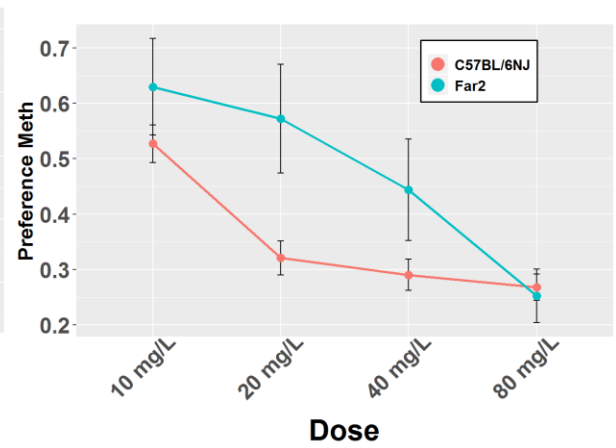
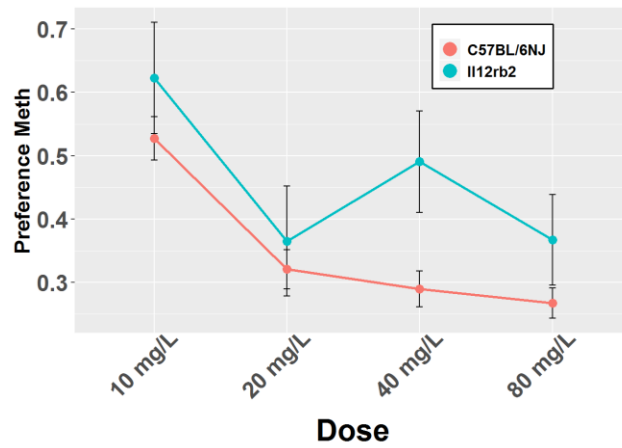
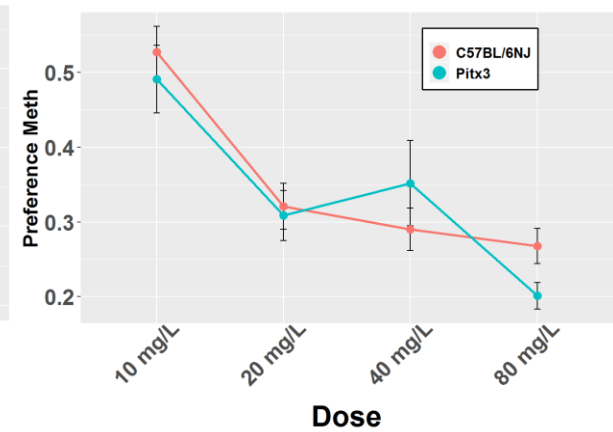
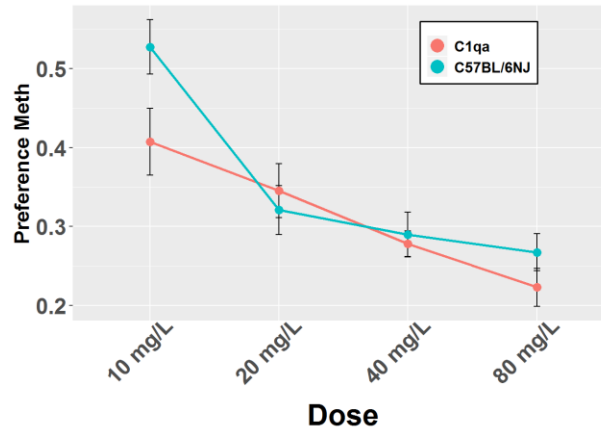
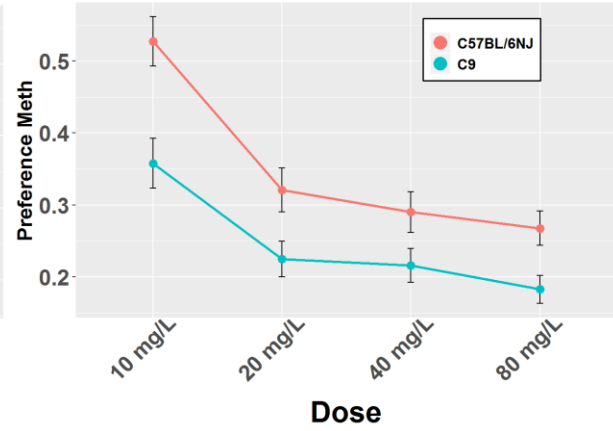
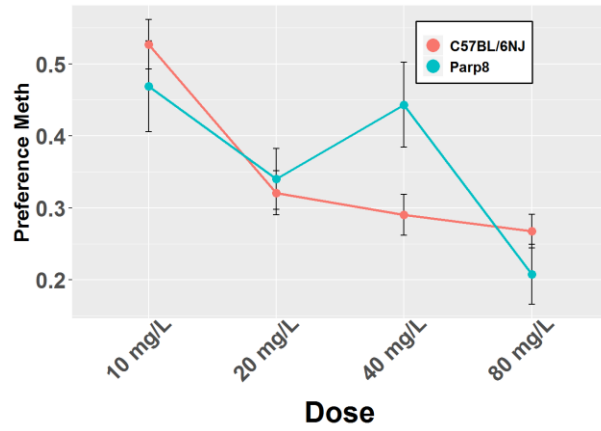


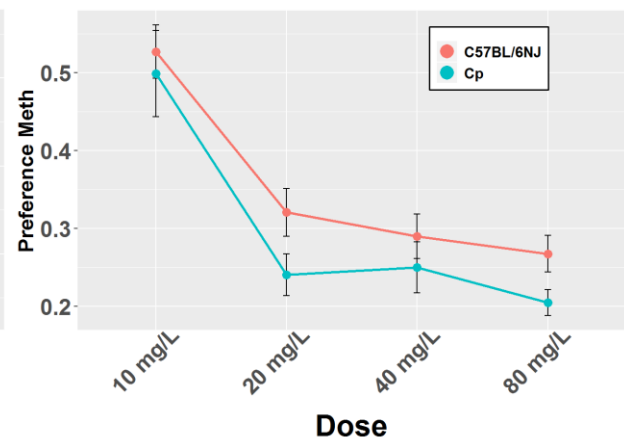
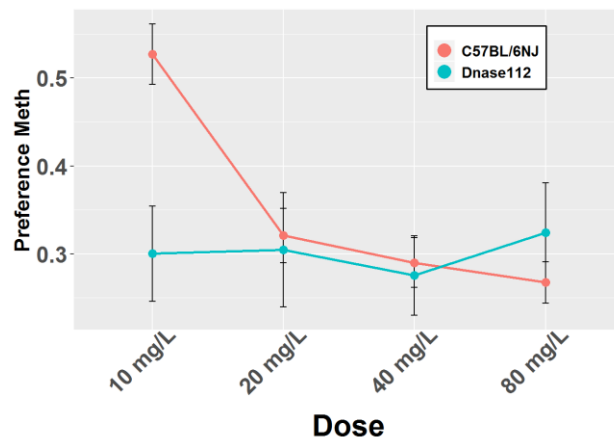
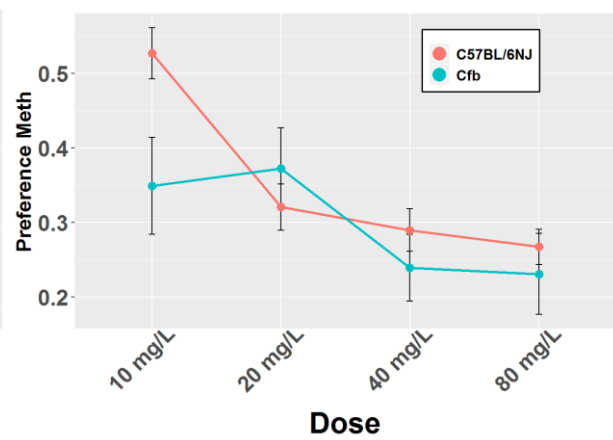
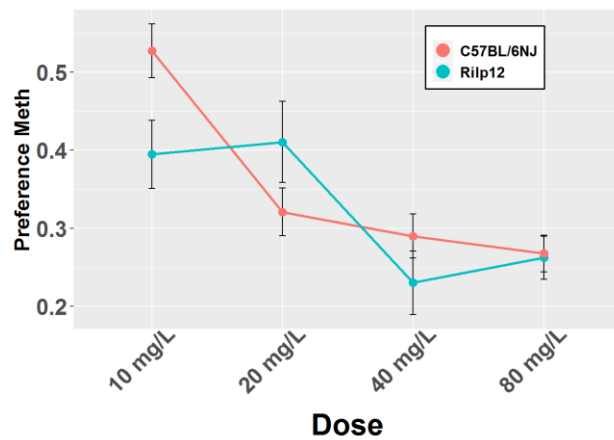
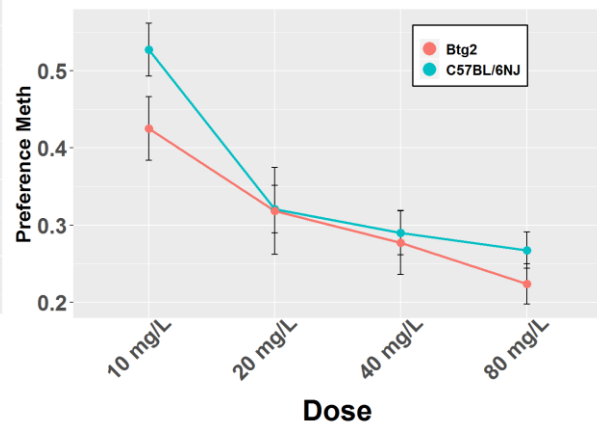
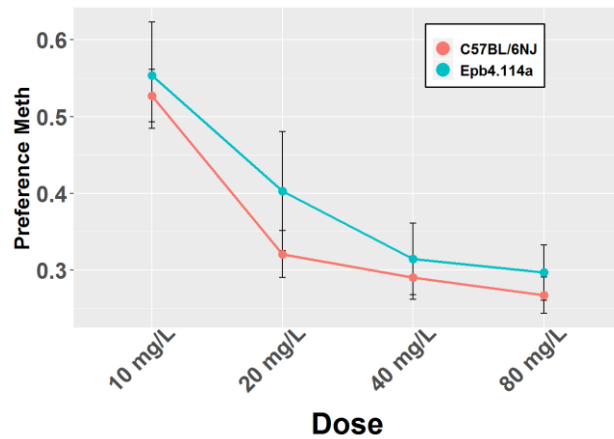


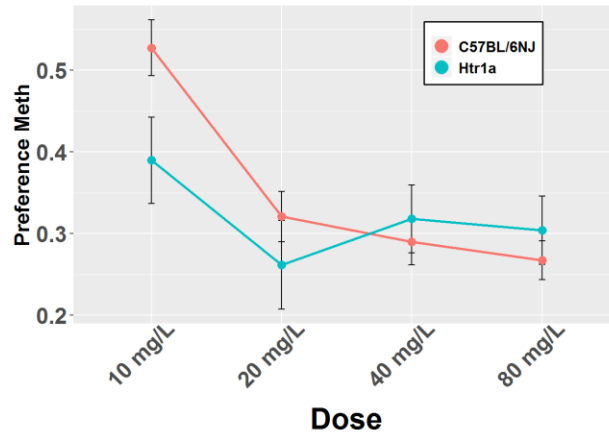
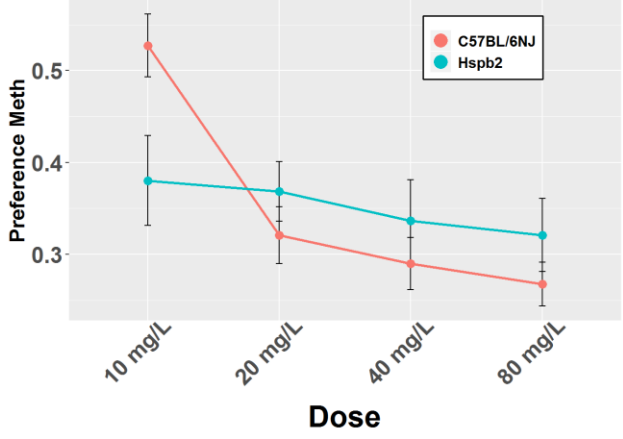
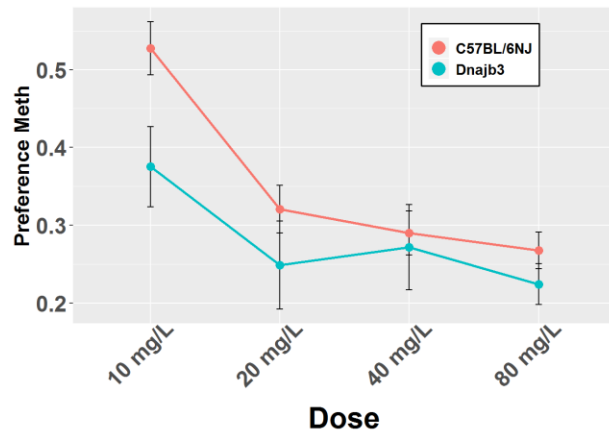
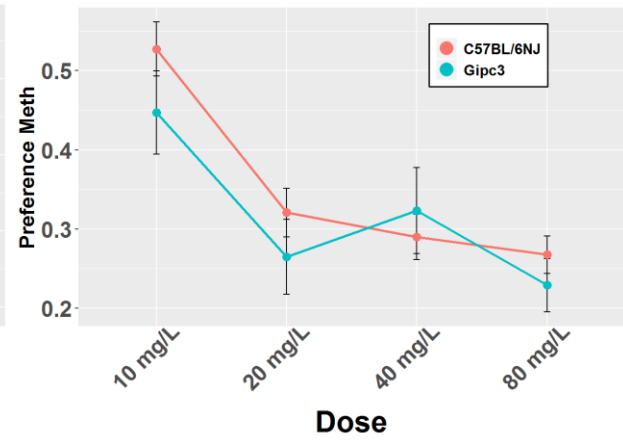
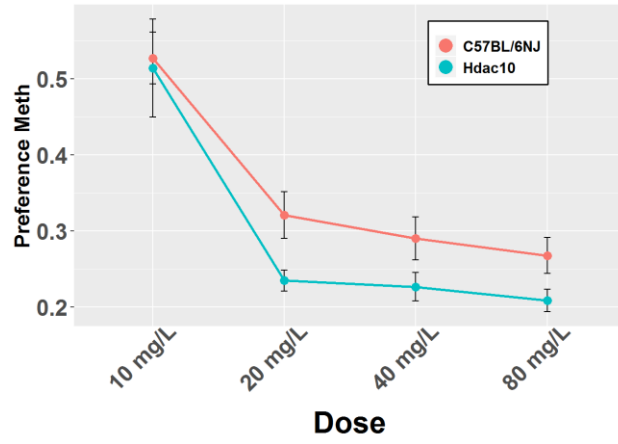




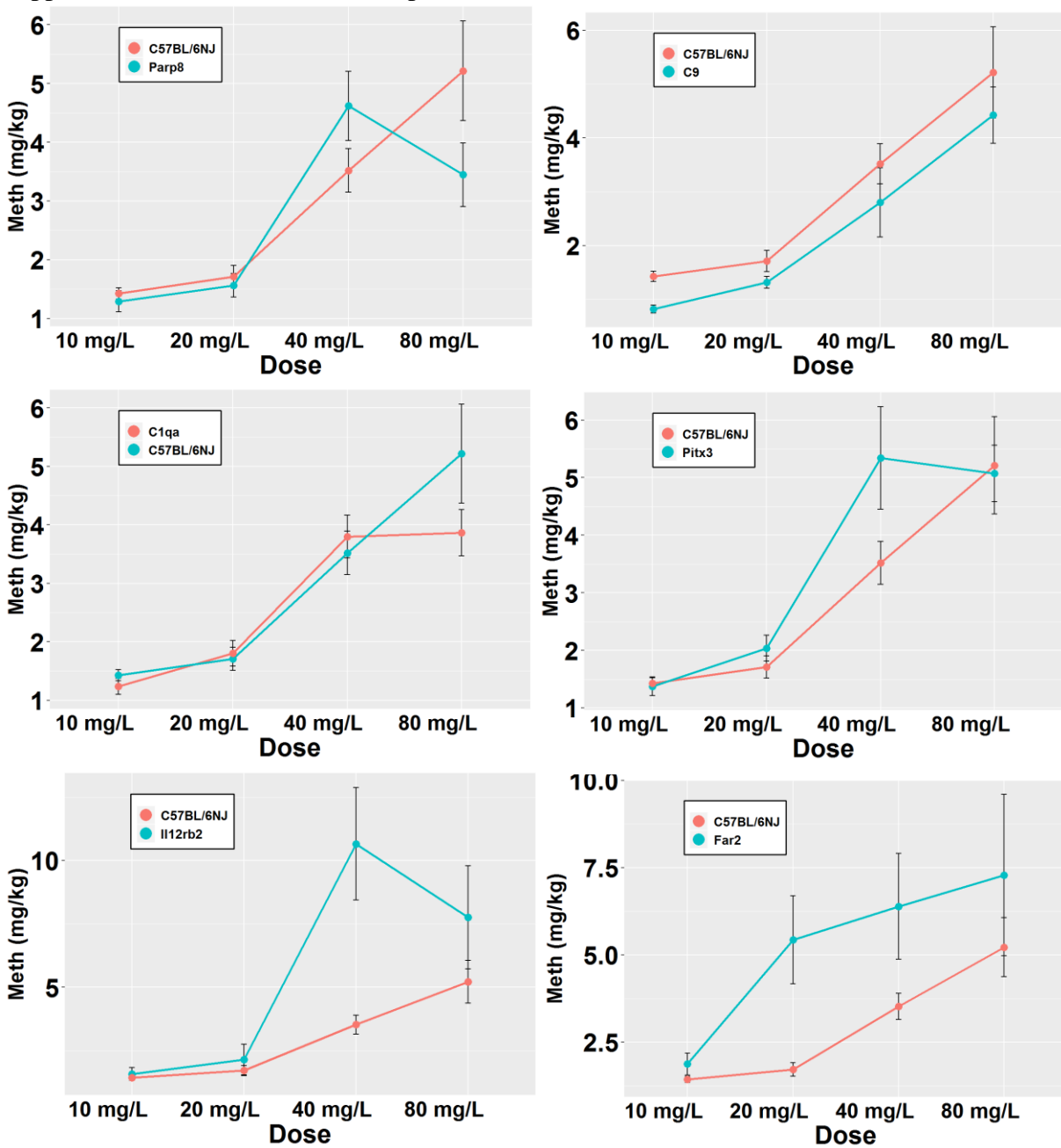
Supplemental Panel 3: MA Preference

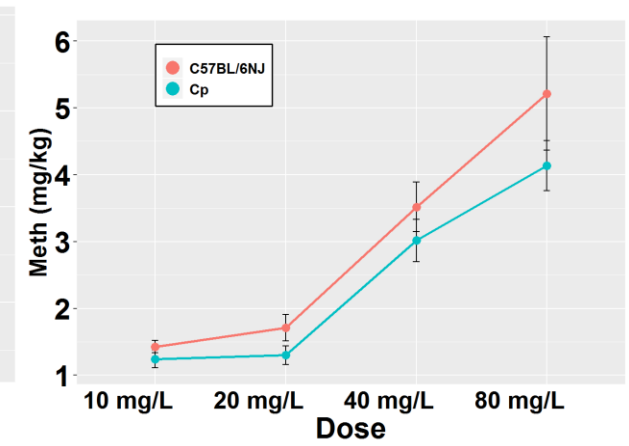
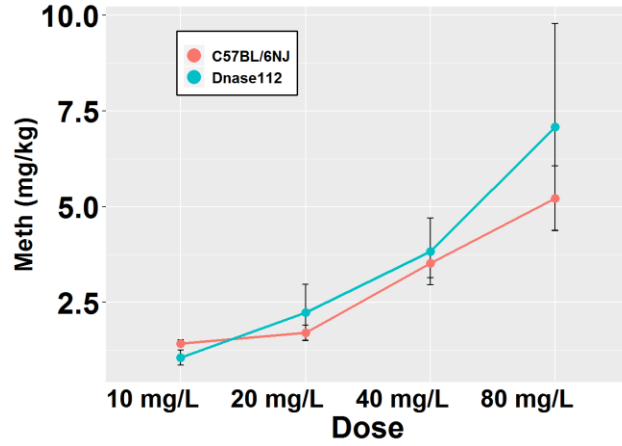
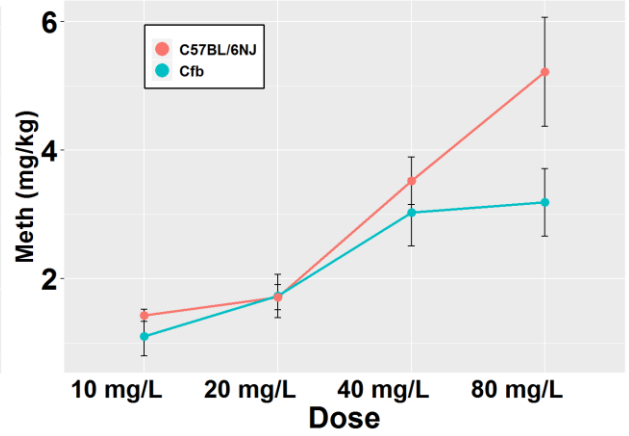
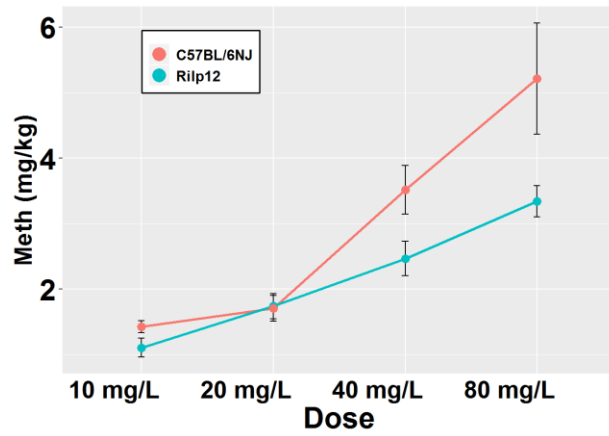
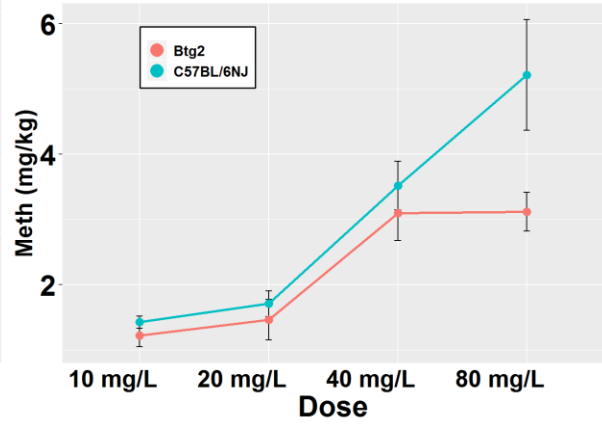
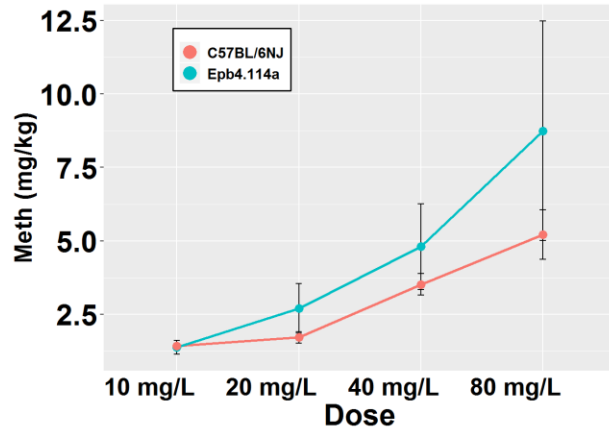


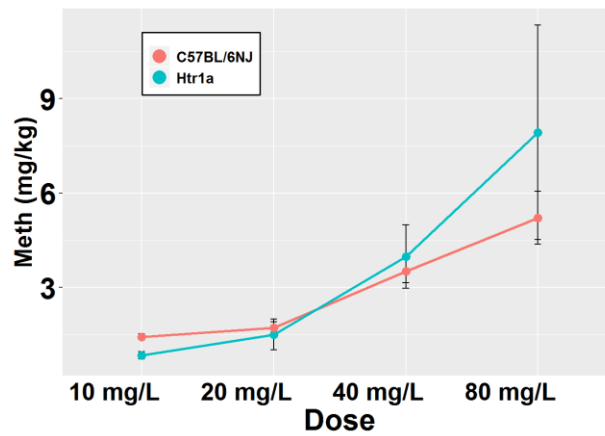
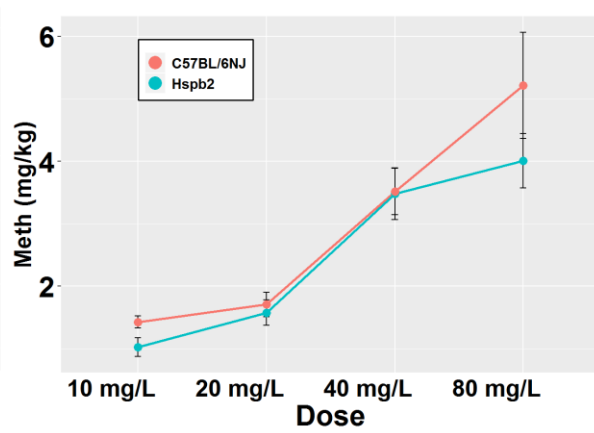
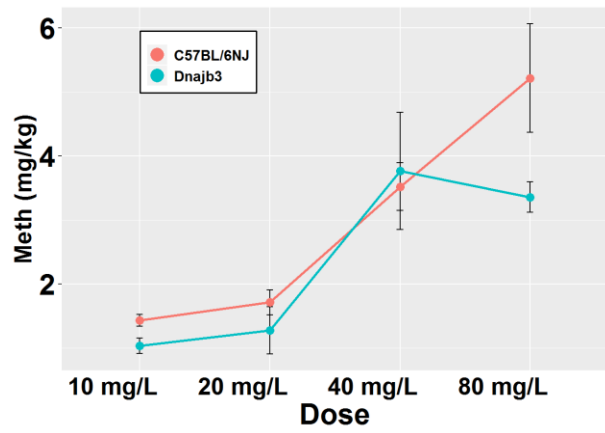
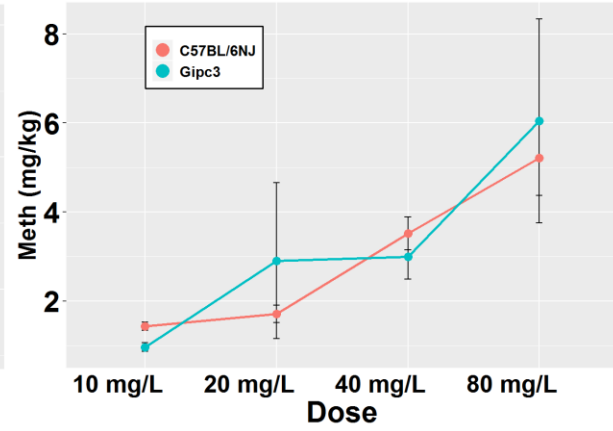
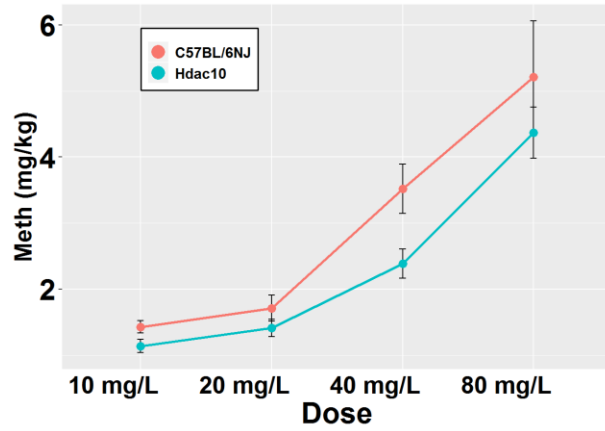




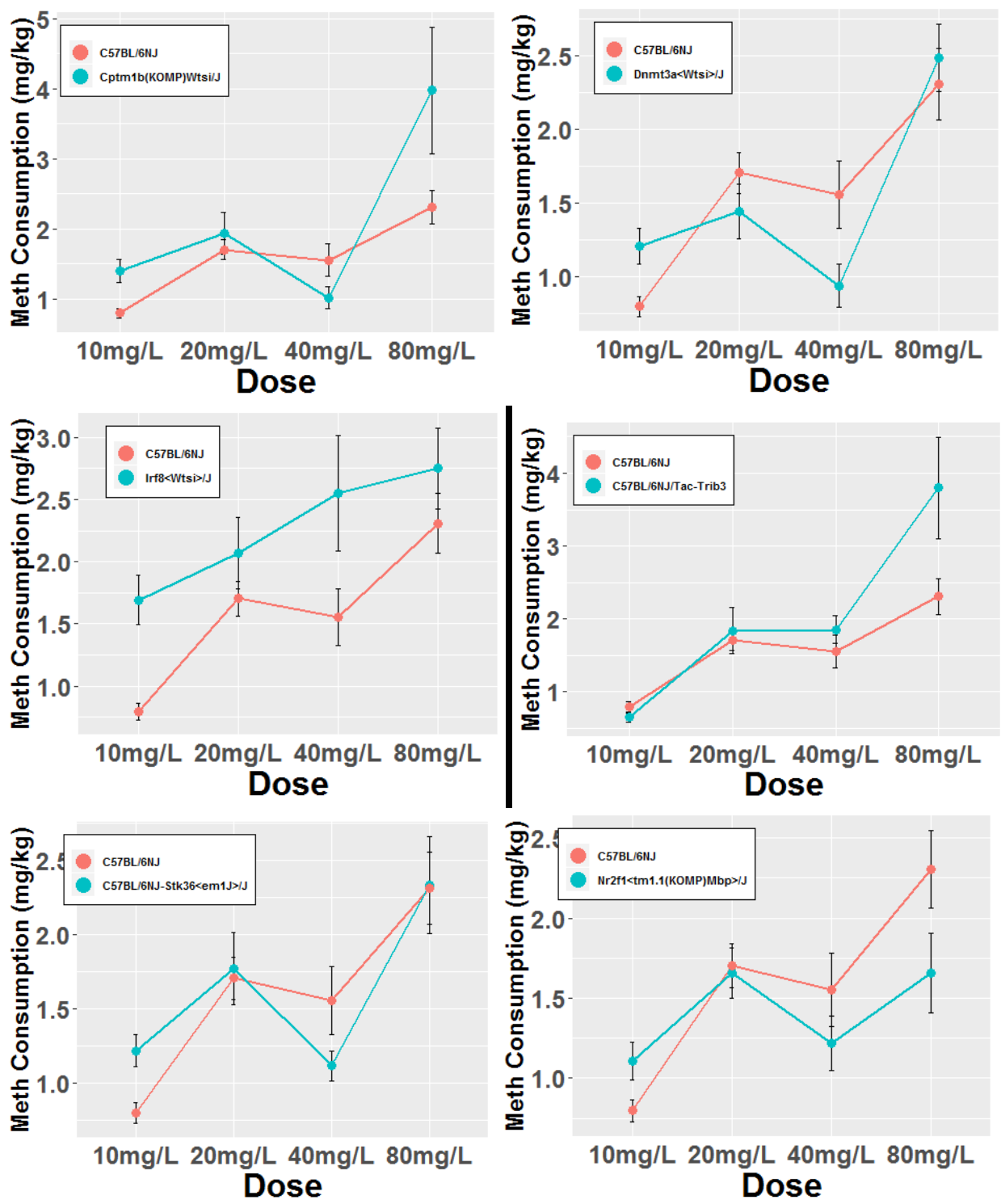
Supplemental Panel 4: MA Consumption

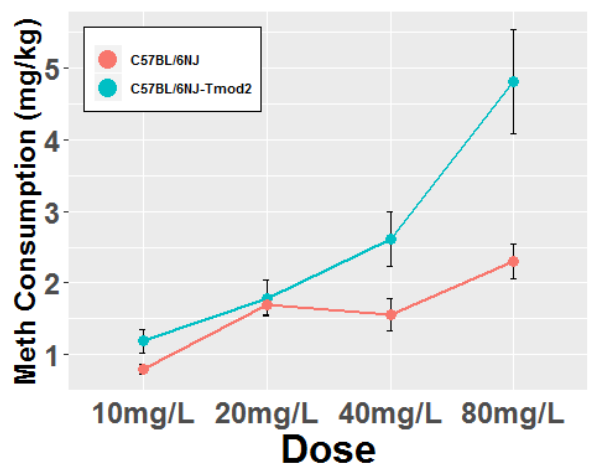
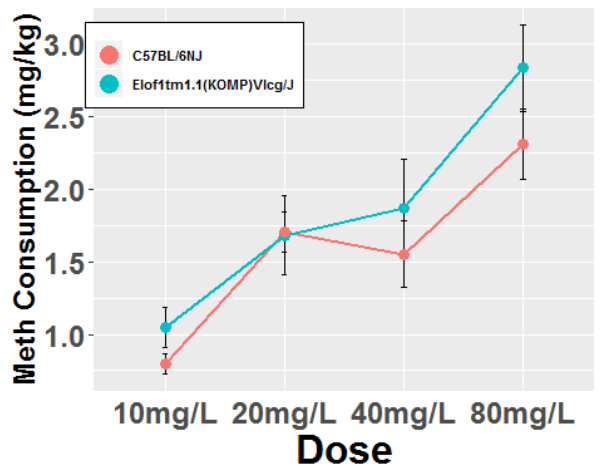
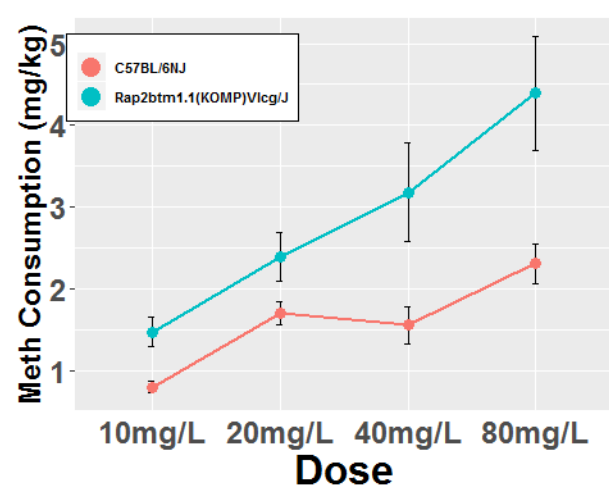
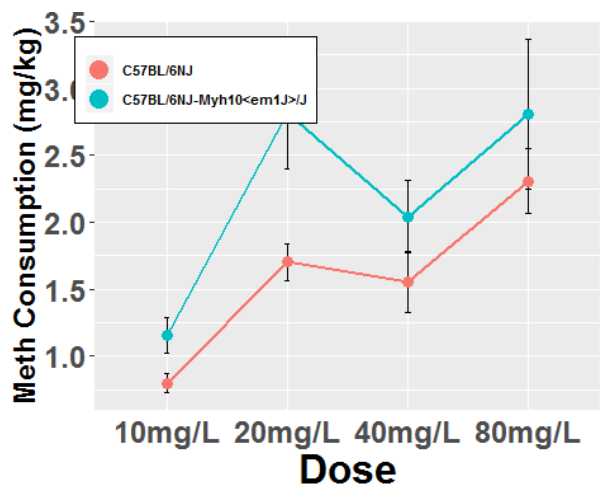
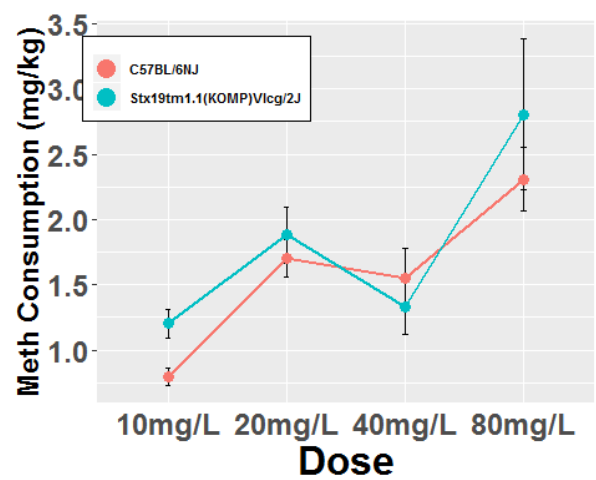
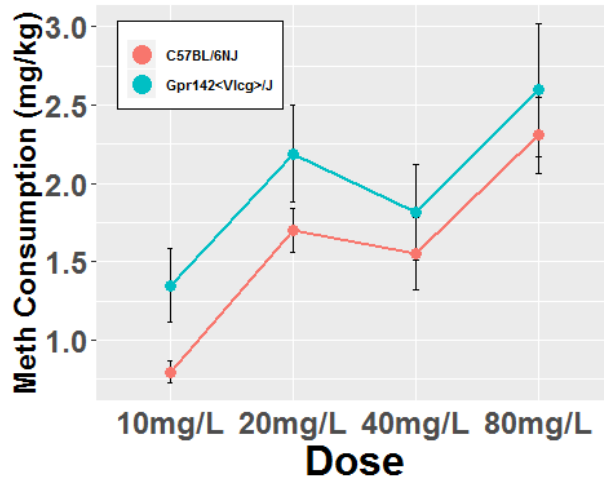


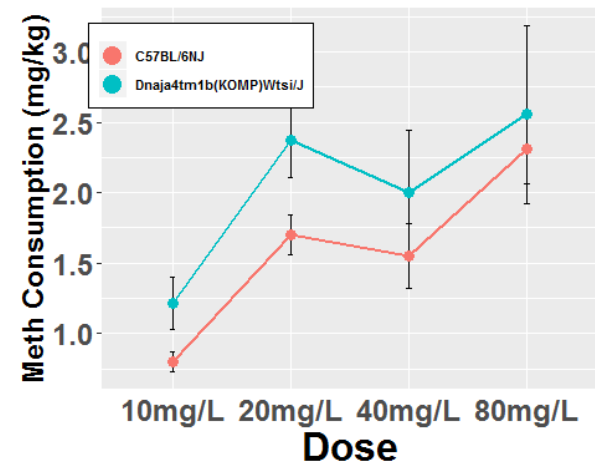
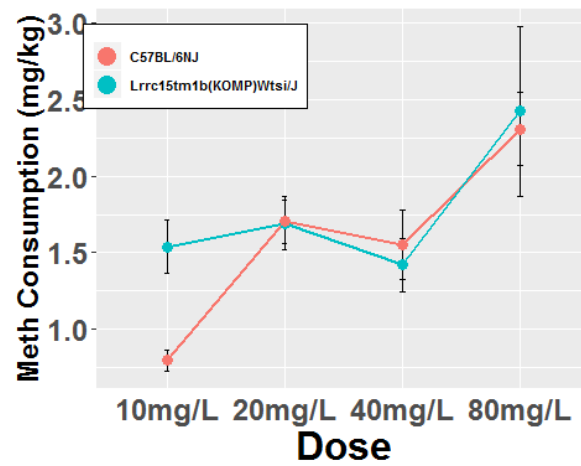
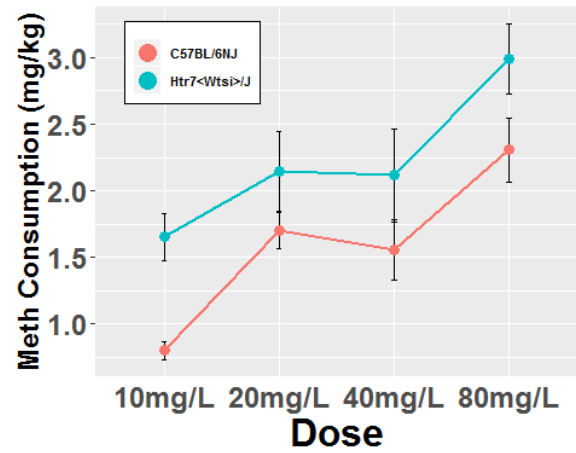
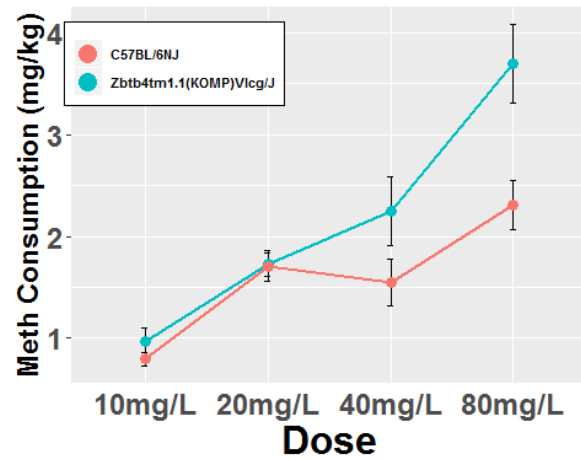


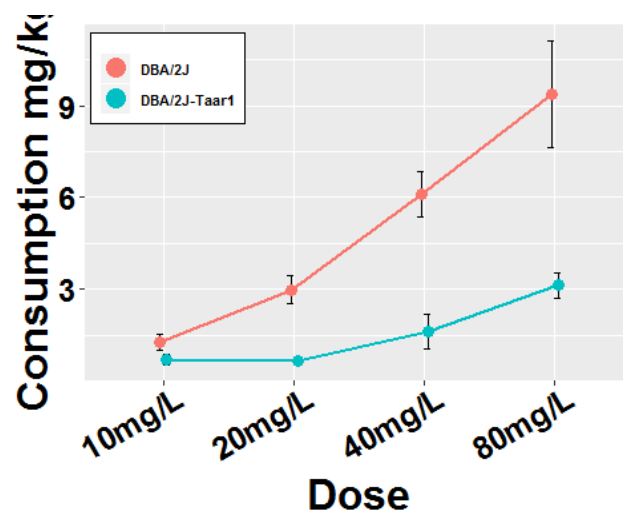
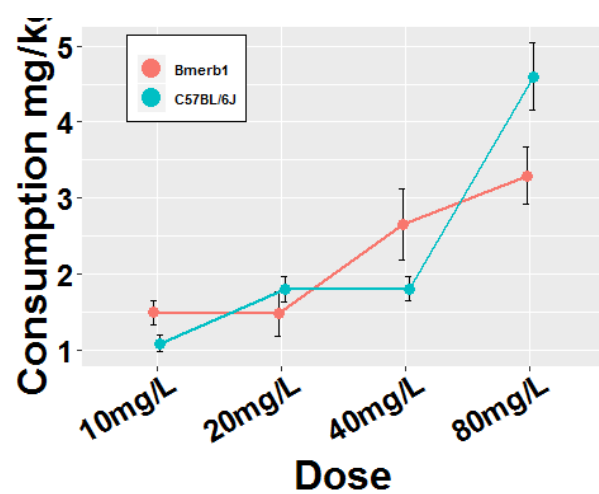
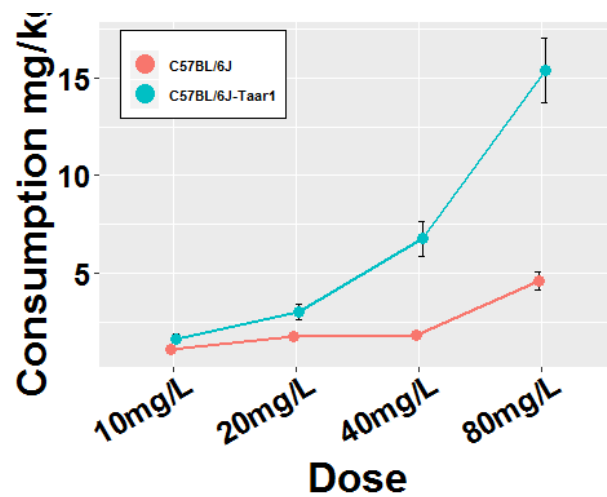
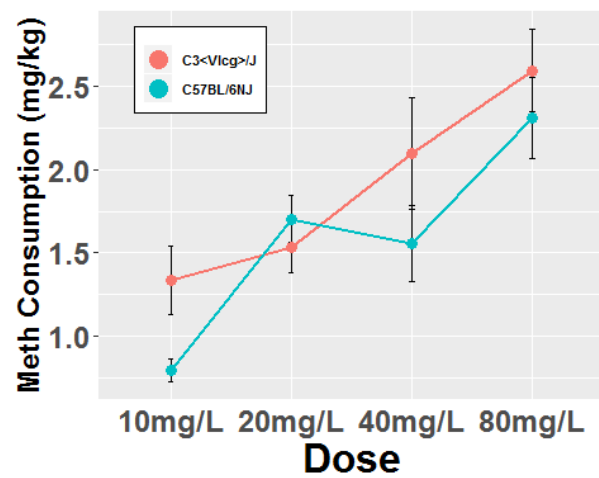


Supplemental Panel 5: MA consumption Second Screen

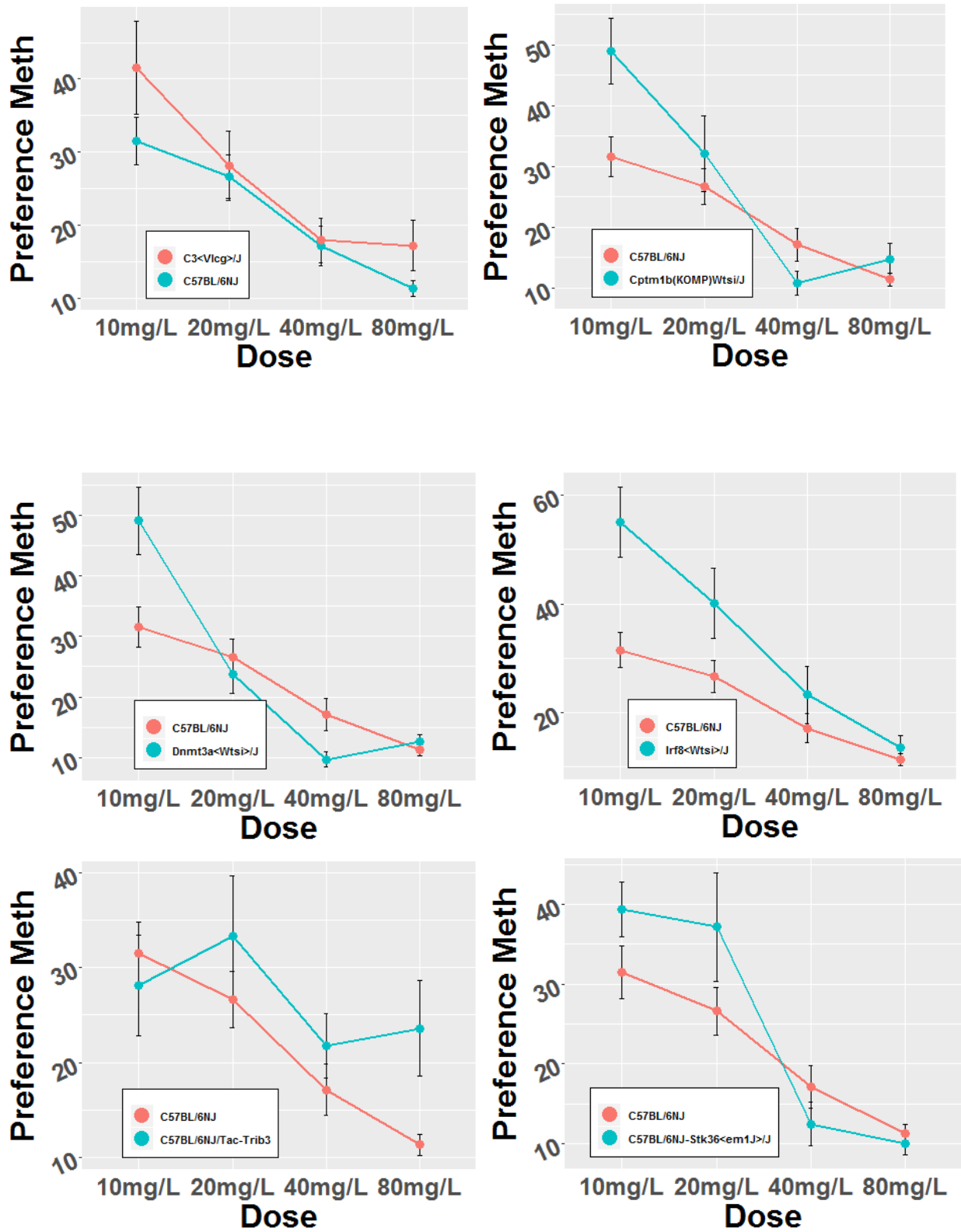


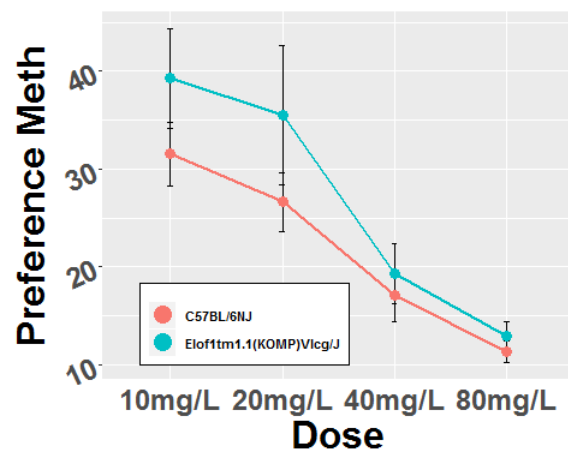
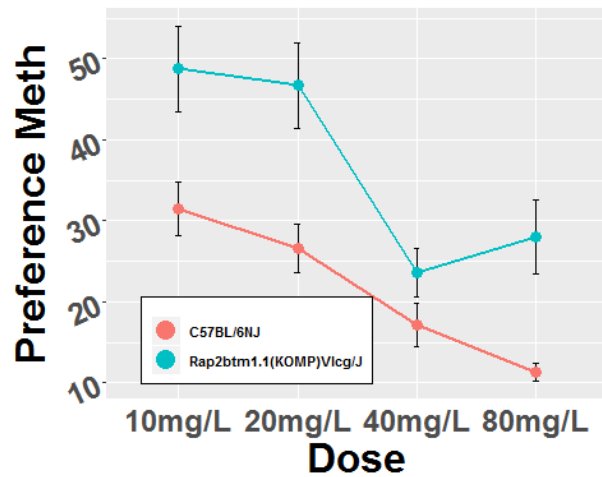
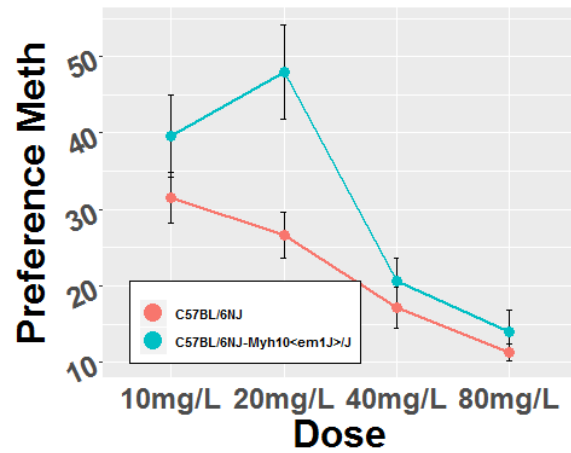
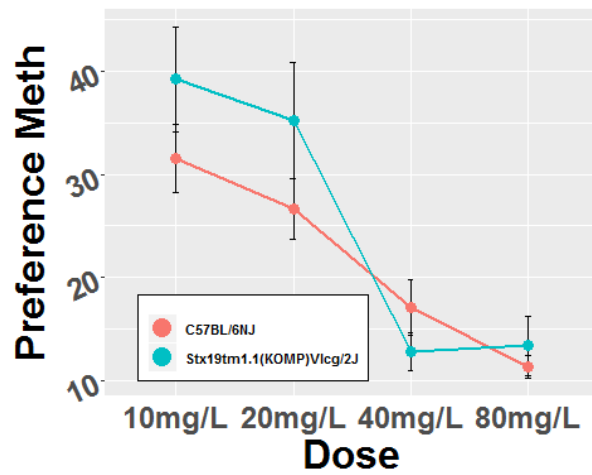
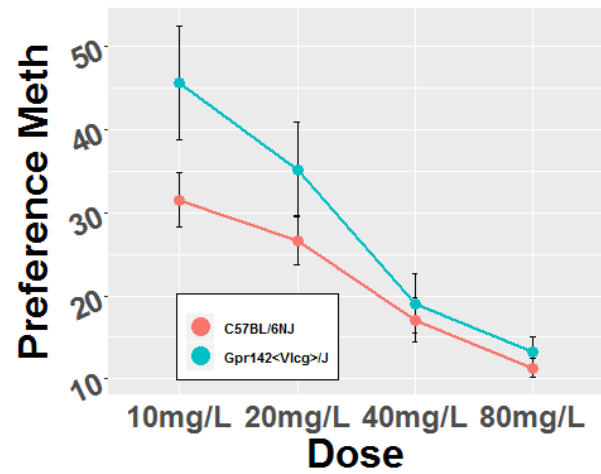
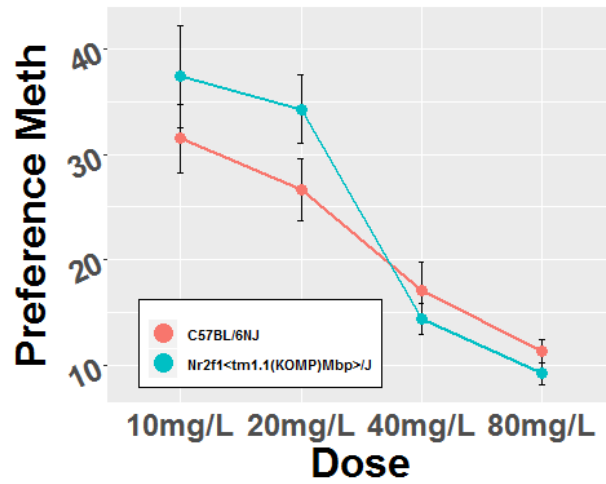


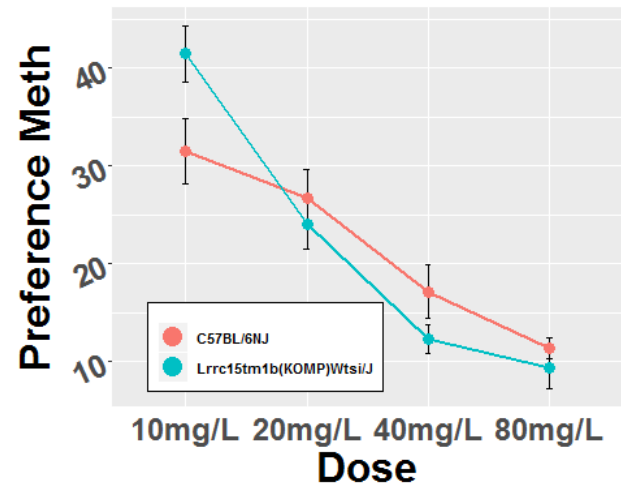
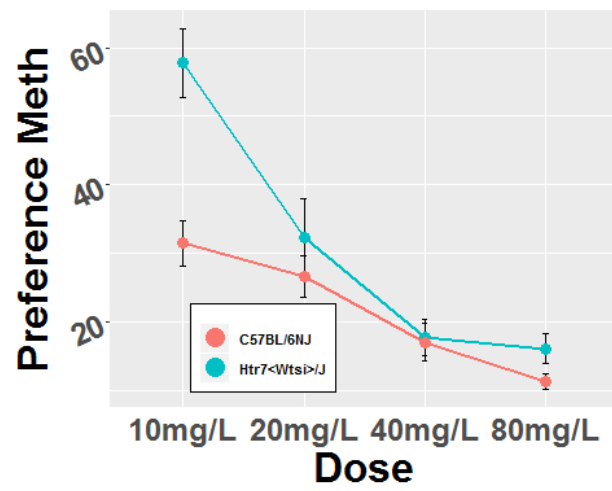
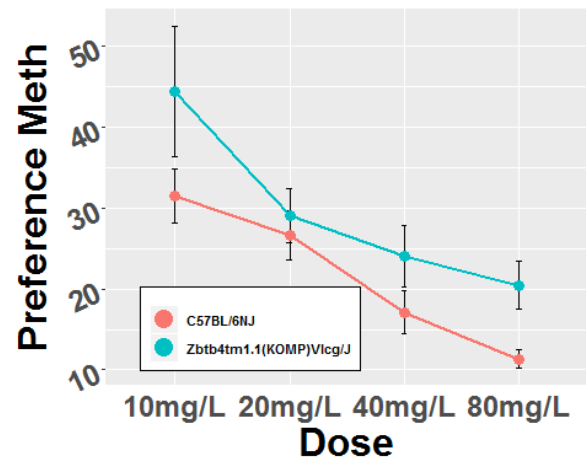
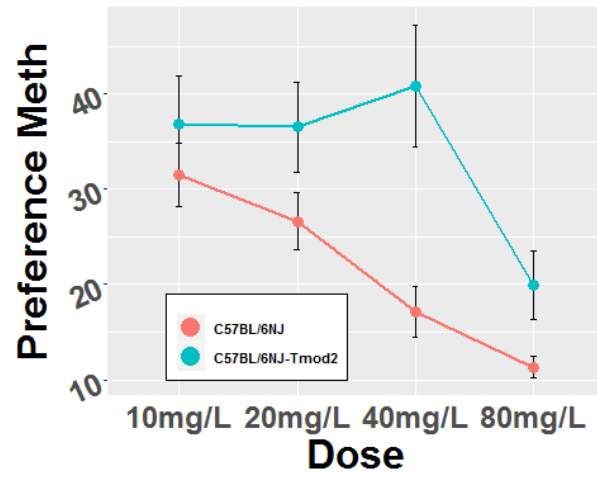


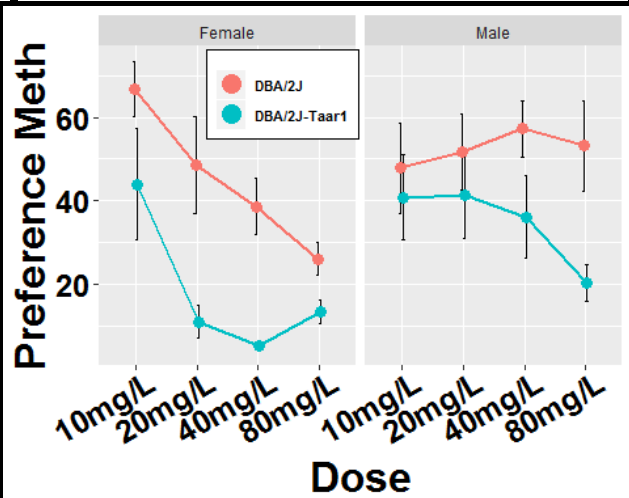
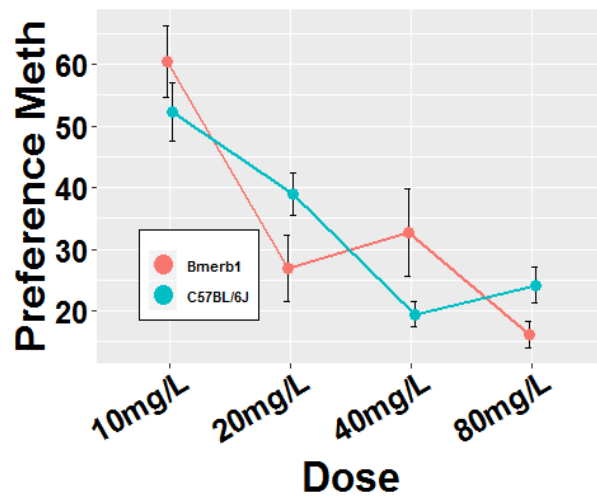
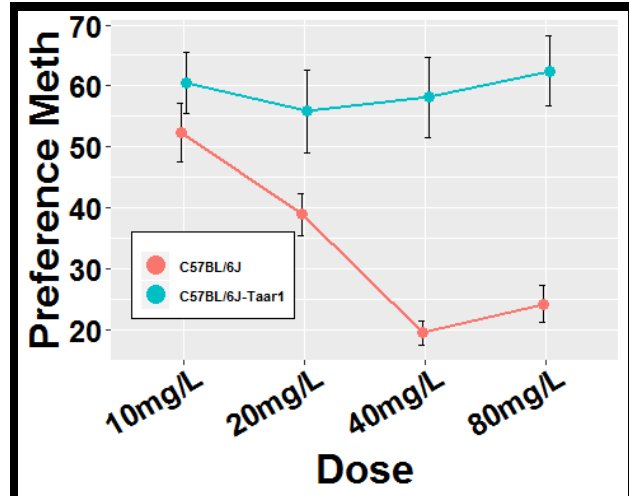
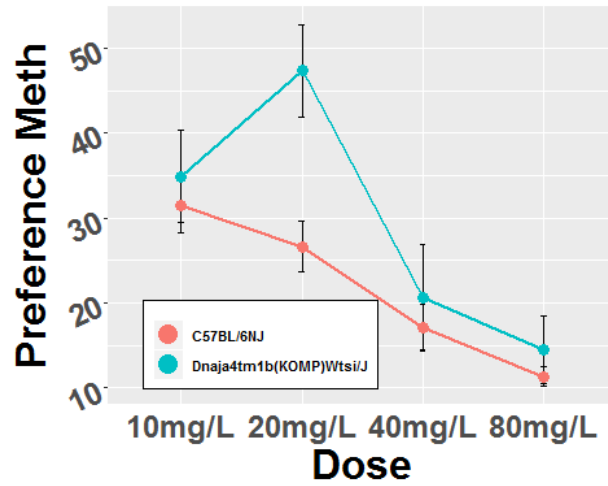


Supplementary Panel 6: MA Preference Second Screen









Supplementary Panel 7: EtOH 4 Day Consumption

