

Figure	Sample Size	Statistical test	Values
1B	wild-type=17 MNK1 ^{KO} =14 MNK2 ^{KO} =17	RM two-way ANOVA	trial: $F_{(4, 180)} = 85.86$, $P < 0.0001$ genotype: $F_{(2, 45)} = 0.7987$, $P = 0.4562$ trial \times genotype: $F_{(8, 180)} = 1.933$, $P = 0.0577$
1C	wild-type=17 MNK1 ^{KO} =14 MNK2 ^{KO} =17	One-way ANOVA, Tukey's post-hoc test for multiple comparisons	$F_{(2, 45)} = 6.565$, $P = 0.0031$ wild-type vs MNK1 ^{KO} : $P = 0.0038$ wild-type vs MNK2 ^{KO} : $P = 0.8385$ MNK1 ^{KO} vs MNK2 ^{KO} : $P = 0.0164$
1D	wild-type=17 MNK1 ^{KO} =15 MNK2 ^{KO} =17	RM two-way ANOVA	trials: $F_{(3.882, 178.6)} = 41.79$, $P < 0.0001$ genotype: $F_{(2, 46)} = 1.825$, $P = 0.1727$ trials \times genotype: $F_{(22, 506)} = 1.265$, $P = 0.1887$
1E	wild-type=17 MNK1 ^{KO} =15 MNK2 ^{KO} =17	RM two-way ANOVA, Tukey's post-hoc test for multiple comparisons	trial: $F_{(2.514, 115.6)} = 37.21$, $P < 0.0001$ genotype: $F_{(2, 46)} = 10.58$, $P = 0.0002$ trial \times genotype: $F_{(8, 184)} = 6.180$, $P < 0.0001$ wild-type vs MNK1 ^{KO} Trial1: $P = 0.0037$ Trial2: $P = 0.0155$ Trial3: $P = 0.1663$ Trial4: $P = 0.0127$ Trial5: $P = 0.0005$ wild-type vs MNK2 ^{KO} Trial1: $P = 0.8023$ Trial2: $P = 0.8813$ Trial3: $P = 0.7782$ Trial4: $P = 0.9338$ Trial5: $P = 0.2891$ MNK1 ^{KO} vs MNK2 ^{KO} Trial1: $P = 0.0066$ Trial2: $P = 0.0309$ Trial3: $P = 0.3216$ Trial4: $P = 0.0086$ Trial5: $P < 0.0001$
1F	wild-type=17 MNK1 ^{KO} =15 MNK2 ^{KO} =17	Kruskal-Wallis test, Dunn's post-hoc test for multiple comparisons	$K_{(3)} = 19.25$, $P < 0.0001$ wild-type vs MNK1 ^{KO} : $P = 0.0073$ wild-type vs MNK2 ^{KO} : $P = 0.5720$ MNK1 ^{KO} vs MNK2 ^{KO} : $P < 0.0001$
1G	wild-type=17 MNK1 ^{KO} =15 MNK2 ^{KO} =17	RM two-way ANOVA, Tukey's post-hoc test for multiple comparisons	familiarity: $F_{(1, 46)} = 20.08$, $P < 0.0001$ genotype: $F_{(2, 46)} = 13.48$, $P = 0.0001$ familiarity \times genotype $F_{(2, 46)} = 4.183$, $P = 0.0409$

			familiar vs novel wild-type: P=0.0002 MNK1 ^{KO} : P=0.8610 MNK2 ^{KO} : P=0.0006
1H	wild-type=17 MNK1 ^{KO} =15 MNK2 ^{KO} =17	One-way ANOVA, Tukey's post-hoc test for multiple comparisons	F _(2, 46) = 4.843, P=0.0123 wild-type vs MNK1 ^{KO} : P= 0.0407 wild-type vs MNK2 ^{KO} : P= 0.9177 MNK1 ^{KO} vs MNK2 ^{KO} : P= 0.0158
1I	wild-type=16 MNK1 ^{KO} =15 MNK2 ^{KO} =17 <i>Last three minutes are missing from one MNK1^{KO} mouse</i>	Mixed-effects model, Tukey's post-hoc test for multiple comparisons	time: F _(4.129, 183.0) = 20.74, P<0.0001 genotype: F _(2, 45) = 3.984, P=0.0255 time × genotype: F _(18, 399) = 3.815, P<0.0001 wild-type vs MNK1 ^{KO} Minute 1: P=0.0640 Minute 2: P=0.0006 Minute 3: P=0.0652 Minute 4: P=0.1525 Minute 5: P=0.0203 Minute 6: P=0.3122 Minute 7: P=0.7071 Minute 8: P=0.8076 Minute 9: P=0.6218 Minute 10: P=0.2908 wild-type vs MNK2 ^{KO} Minute 1: P=0.1390 Minute 2: P=0.4599 Minute 3: P=0.2032 Minute 4: P=0.4710 Minute 5: P=0.0012 Minute 6: P=0.1773 Minute 7: P=0.9988 Minute 8: P=0.8445 Minute 9: P=0.6583 Minute 10: P=0.2778 MNK1 ^{KO} vs MNK2 ^{KO} Minute 1: P=0.0003 Minute 2: P=0.0266 Minute 3: P=0.6507 Minute 4: P=0.5080 Minute 5: P=0.6591 Minute 6: P=0.8818 Minute 7: P=0.6743 Minute 8: P=0.3860 Minute 9: P=0.9824 Minute 10: P=0.9967
1J	wild-type=16 MNK1 ^{KO} =15 MNK2 ^{KO} =17	Mixed-effects model	time: F _(5.368, 238.0) = 2.066, P=0.0655 genotype: F _(2, 45) = 0.08049, P=0.9228

	<i>Last three minutes are missing from one MNK1^{KO} mouse</i>		time × genotype interaction: $F_{(18, 399)} = 1.324$, $P=0.1684$
1L	<p>wild-type=17 MNK1^{KO}=14 MNK2^{KO}=17</p> <p><i>Trial 5 is missing from one MNK2^{KO} mouse</i></p>	Mixed-effects model, Tukey's post-hoc test for multiple comparisons	<p>trial: $F_{(3.512, 157.2)} = 8.760$, $P<0.0001$ genotype: $F_{(2, 45)} = 4.735$, $P=0.0136$ trial × genotype interaction: $F_{(8, 179)} = 0.8201$, $P=0.5858$</p> <p>wild-type vs MNK1^{KO} Trial1: $P=0.1996$ Trial2: $P=0.4601$ Trial3: $P=0.8604$ Trial4: $P=0.1793$ Trial5: $P=0.2983$</p> <p>wild-type vs MNK2^{KO} Trial1: $P=0.0500$ Trial2: $P=0.1476$ Trial3: $P=0.2713$ Trial4: $P=0.0609$ Trial5: $P=0.2653$</p> <p>MNK1^{KO} vs MNK2^{KO} Trial1: $P=0.9361$ Trial2: $P=0.7916$ Trial3: $P=0.0967$ Trial4: $P=0.9844$ Trial5: $P=0.9880$</p>
1M	<p>wild-type=17 MNK1^{KO}=14 MNK2^{KO}=17</p> <p><i>Trial 5 is missing from one MNK2^{KO} mouse</i></p>	Mixed-effects model, Tukey's post-hoc test for multiple comparisons	<p>trial: $F_{(3.318, 148.5)} = 0.5512$, $P=0.6658$ genotype: $F_{(2, 45)} = 6.569$, $P=0.0031$ trial × genotype interaction: $F_{(8, 179)} = 0.9465$, $P=0.4797$</p> <p>wild-type vs MNK1^{KO} Trial1: $P=0.0226$ Trial2: $P=0.0063$ Trial3: $P=0.5086$ Trial4: $P=0.7346$ Trial5: $P=0.066$</p> <p>wild-type vs MNK2^{KO} Trial1: $P=0.2453$ Trial2: $P=0.1319$ Trial3: $P=0.2567$ Trial4: $P=0.1472$ Trial5: $P=0.598$</p> <p>MNK1^{KO} vs MNK2^{KO} Trial1: $P=0.6477$ Trial2: $P=0.3311$ Trial3: $P=0.8572$ Trial4: $P=0.5895$</p>

			Trial5: P=0.4593
1N	<p>wild-type=17 MNK1^{KO}=14 MNK2^{KO}=17</p> <p><i>Trial 5 is missing from one MNK2^{KO} mouse</i></p>	Mixed-effects model, Tukey's post-hoc test for multiple comparisons	<p>trial: $F_{(2,703, 121.0)} = 3.131$, $P=0.0328$ genotype $F_{(2, 45)} = 13.24$, $P<0.0001$</p> <p>trial \times genotype interaction: $F_{(8, 179)} = 1.357$, $P=0.2183$</p> <p>wild-type vs MNK1^{KO} Trial1: $P=0.357$ Trial2: $P=0.0155$ Trial3: $P=0.2736$ Trial4: $P=0.0188$ Trial5: $P=0.0886$</p> <p>wild-type vs MNK2^{KO} Trial1: $P=0.0004$ Trial2: $P=0.0001$ Trial3: $P=0.0351$ Trial4: $P=0.3417$ Trial5: $P=0.0667$</p> <p>MNK1^{KO} vs MNK2^{KO} Trial1: $P=0.2773$ Trial2: $P=0.6374$ Trial3: $P=0.4472$ Trial4: $P=0.2077$ Trial5: $P=0.9735$</p>
3B	<p>Mean log₂ value relative to wild-type from 4 mice per genotype. Number of pairs: 9114 proteins / genotype</p>	Pearson r	<p>MNK1^{KO} logFC vs MNK2^{KO} logFC: $r = 0.5574$ (95% confidence interval 0.5430 – 0.5713), $P<0.0001$</p> <p>MNK1^{KO} logFC vs MNK1/2^{DKO} logFC: $r = 0.5186$ (95% confidence interval 0.5034 – 0.5334), $P<0.0001$</p> <p>MNK2^{KO} logFC vs MNK1/2^{DKO} logFC: $r = 0.4770$ (95% confidence interval 0.4610 – 0.4927), $P<0.0001$</p>
4A	<p>Mean log₂ value relative to wild-type from 4 mice per genotype. Number of pairs: 9114 proteins / genotype</p>	Pearson r	<p>MNK1^{KO} logFC vs MNK2^{KO} logFC: $r = 0.05323$ (95% confidence interval 0.03273 – 0.07368), $P<0.0001$</p> <p>MNK1^{KO} logFC vs MNK1/2^{DKO} logFC: $r = 0.2309$ (95% confidence interval 0. 2114 – 0.2502), $P<0.0001$</p> <p>MNK2^{KO} logFC vs MNK1/2^{DKO} logFC: $r = 0.6062$ (95% confidence interval 0.5930 – 0.6190), $P<0.0001$</p>

4E	Mean log ₂ value relative to wild-type from 4 mice per genotype. Ribosomes: 73 All: 73 randomly selected proteins	Kolmogorov-Smirnov test	MNK1 ^{KO} CX: D= 0.3699, P<0.0001 MNK2 ^{KO} CX: D= 0.3288, P=0.0007 MNK1/2 ^{DKO} CX: D= 0.4110, P<0.0001 MNK1 ^{KO} SYP: D= 0.6849, P<0.0001 MNK2 ^{KO} SYP: D= 0.3288, P=0.0007 MNK1/2 ^{DKO} SYP: D= 0.6164, P<0.0001
6B	wild-type=14 MNK1 ^{KO} =14 MNK2 ^{KO} =16	One-way ANOVA, Tukey's post-hoc test for multiple comparisons	F _(2, 41) = 17.27, P<0.0001 wild-type vs MNK1 ^{KO} : P= 0.0026 wild-type vs MNK2 ^{KO} : P< 0.0001 MNK1 ^{KO} vs MNK2 ^{KO} : P= 0.0932
6C	wild-type=14 MNK1 ^{KO} =15 MNK2 ^{KO} =15	Kruskal-Wallis test, Dunn's post-hoc test for multiple comparisons	K ₍₃₎ =22.14, P<0.0001 wild-type vs MNK1 ^{KO} : P<0.0001 wild-type vs MNK2 ^{KO} : P=0.0166 MNK1 ^{KO} vs MNK2 ^{KO} : P= 0.1545
6D	wild-type=8 MNK1 ^{KO} =6 MNK2 ^{KO} =9 MNK1/2 ^{DKO} =9	One-way ANOVA, Tukey's post-hoc test for multiple comparisons	F _(3, 28) = 4.855, P=0.0076 wild-type vs MNK1 ^{KO} : P= 0.0038 wild-type vs MNK2 ^{KO} : P= 0.3164 wild-type vs MNK1/2 ^{DKO} : P= 0.1924 MNK1 ^{KO} vs MNK2 ^{KO} : P= 0.1274 MNK1 ^{KO} vs MNK1/2 ^{DKO} : P= 0.2121 MNK2 ^{KO} vs MNK1/2 ^{DKO} : P= 0.9893
6E	wild-type=9 MNK1 ^{KO} =9 MNK2 ^{KO} =11 MNK1/2 ^{DKO} =7	One-way ANOVA, Tukey's post-hoc test for multiple comparisons	F _(3, 32) = 7.421, P=0.0007 wild-type vs MNK1 ^{KO} : P= 0.0054 wild-type vs MNK2 ^{KO} : P= 0.0022 wild-type vs MNK1/2 ^{DKO} : P= 0.8317 MNK1 ^{KO} vs MNK2 ^{KO} : P= 0.9985 MNK1 ^{KO} vs MNK1/2 ^{DKO} : P= 0.0738 MNK2 ^{KO} vs MNK1/2 ^{DKO} : P= 0.0417
6G	wild-type=18 MNK1 ^{KO} =12 MNK2 ^{KO} =12	Kruskal-Wallis test, Dunn's post-hoc test for multiple comparisons	K ₍₃₎ =10.77, P=0.0046 wild-type vs MNK1 ^{KO} : P= 0.0142 wild-type vs MNK2 ^{KO} : P= 0.0234 MNK1 ^{KO} vs MNK2 ^{KO} : P>0.9999
6I	Mean log ₂ value relative to wild-type from 4 mice per genotype. Number of pairs: 10230 phosphosites / genotype	Pearson r	<i>synaptoneurosomes</i> : MNK1 ^{KO} logFC vs MNK2 ^{KO} logFC: r = 0.2254 (95% confidence interval 0.2069 – 0.2437), P<0.0001 <i>cortex</i> : MNK1 ^{KO} logFC vs MNK2 ^{KO} logFC: r = 0.4523 (95% confidence interval 0.4368 – 0.4676), P<0.0001
Extended data Figures	Sample Size	Statistical test	Values

S1A-B	<p><i>females:</i> wild-type=10 MNK1^{KO}=8 MNK2^{KO}=12</p> <p><i>males:</i> wild-type=7 MNK1^{KO}=6 MNK2^{KO}=5</p>	Three-way Repeated Measures ANOVA	<p>Genotype: $F_{(2, 42)}=0.28$, $P=0.760$ Sex: $F_{(1, 42)}=1.19$, $P=0.2820$ genotype x Sex $F_{(2, 42)}=1.63$, $P=0.2080$ trials: $F_{(3.35, 140.79)}=81.16$, $P<0.0001$ genotype x trials: $F_{(6.7, 140.79)}=1.887$, $P=0.0820$ Sex x trials $F_{(3.35, 140.79)}=0.86$, $P=0.4720$ Sex x trials x genotype $F_{(6.7, 140.79)}=0.67$, $P=0.6880$</p>
S1C	<p><i>females:</i> wild-type=10 MNK1^{KO}=8 MNK2^{KO}=12</p> <p><i>males:</i> wild-type=7 MNK1^{KO}=6 MNK2^{KO}=5</p>	Two-way ANOVA	<p>Interaction: $F_{(2, 42)} = 0.2222$, $P=0.8017$ Sex: $F_{(1, 42)} = 0.2822$, $P=0.5980$ Genotype: $F_{(2, 42)} = 6.141$, $P=0.0046$</p>
S1D-E	<p><i>females:</i> wild-type=10 MNK1^{KO}=8 MNK2^{KO}=12</p> <p><i>males:</i> wild-type=7 MNK1^{KO}=7 MNK2^{KO}=5</p>	Three-way Repeated Measures ANOVA	<p>Genotype: $F_{(2, 43)}=2.48$, $P=0.0950$ Sex: $F_{(1, 43)}=2.23$, $P=0.1430$ genotype x sex: $F_{(2, 42)}=2.06$, $P=0.139$ trials: $F_{(3.87, 166.45)}=42.84$, $P<0.0001$ genotype x trials: $F_{(7.74, 166.45)}=1.47$, $P=0.175$ Sex x trials: $F_{(3.87, 166.45)}=0.58$, $P=0.669$ Sex x trials x genotype: $F_{(7.74, 166.45)}=1.62$, $P=0.125$</p>
S1F-G	<p><i>females:</i> wild-type=10 MNK1^{KO}=8 MNK2^{KO}=12</p> <p><i>males:</i> wild-type=7 MNK1^{KO}=7 MNK2^{KO}=5</p>	Three-way Repeated Measures ANOVA	<p>Genotype: $F_{(2, 43)}=9.80$, $P<0.0001$ Sex: $F_{(1, 43)}=0.54$, $P=0.465$ genotype x sex: $F_{(2, 43)}=1.74$, $P=0.188$ trials: $F_{(2.43, 104.6)}=34.96$, $P<0.0001$ genotype x trials: $F_{(4.86, 104.6)}=5.89$, $P<0.0001$ Sex x trials: $F_{(2.43, 104.6)}=0.83$, $P=0.461$ Sex x trials x genotype: $F_{(4.86, 104.6)}=0.61$, $P=0.689$</p>
S1H	<p><i>females:</i> wild-type=10 MNK1^{KO}=8 MNK2^{KO}=12</p> <p><i>males:</i> wild-type=7 MNK1^{KO}=7 MNK2^{KO}=5</p>	Two-way ANOVA	<p>Interaction: $F_{(2, 43)} = 0.9540$, $P=0.3932$ Sex: $F_{(1, 43)} = 0.6882$, $P=0.4114$ Genotype: $F_{(2, 43)} = 14.51$, $P<0.0001$</p>

S1I	<p>females: wild-type=10 MNK1^{KO}=8 MNK2^{KO}=12</p> <p>males: wild-type=7 MNK1^{KO}=7 MNK2^{KO}=5</p>	Three-way Repeated Measures ANOVA	<p>Genotype: $F_{(2, 43)} = 11.66$, $P < 0.0001$ Sex: $F_{(1, 43)} = 0.51$, $P = 0.479$ Novelty: $F_{(1, 43)} = 21.05$, $P < 0.0001$ genotype x sex: $F_{(2, 43)} = 3.23$, $P = 0.049$ genotype x novelty: $F_{(2, 43)} = 4.62$, $P = 0.015$ Sex x novelty: $F_{(1, 43)} = 0.70$, $P = 0.409$ Sex x novelty x genotype: $F_{(2, 43)} = 0.52$, $P = 0.596$</p>
S1J	<p>females: wild-type=10 MNK1^{KO}=8 MNK2^{KO}=12</p> <p>males: wild-type=7 MNK1^{KO}=7 MNK2^{KO}=5</p>	Two-way ANOVA	<p>Interaction: $F_{(2, 43)} = 0.8828$, $P = 0.4210$ Sex: $F_{(1, 43)} = 1.423$, $P = 0.2394$ Genotype: $F_{(2, 43)} = 5.574$, $P = 0.0070$</p>
S1K	<p>females: wild-type=10 MNK1^{KO}=7 MNK2^{KO}=12</p> <p>males: wild-type=6 MNK1^{KO}=7 MNK2^{KO}=5</p>	Two-way ANOVA	<p>Interaction: $F_{(2, 40)} = 2.048$, $P = 0.1424$ Sex: $F_{(1, 40)} = 0.03098$, $P = 0.8612$ Genotype: $F_{(2, 40)} = 2.365$, $P = 0.1069$</p>
S1L	<p>females: wild-type=10 MNK1^{KO}=7 MNK2^{KO}=12</p> <p>males: wild-type=6 MNK1^{KO}=7 MNK2^{KO}=5</p>	Two-way ANOVA	<p>Interaction: $F_{(2, 40)} = 0.1903$, $P = 0.8275$ Sex: $F_{(1, 40)} = 2.104$, $P = 0.1547$ Genotype: $F_{(2, 40)} = 0.06901$, $P = 0.9334$</p>
S2A	<p>wild-type=17 MNK1^{KO}=14 MNK2^{KO}=17</p> <p><i>Trial 5 is missing from one MNK2^{KO} mouse</i></p>	Mixed-effects model	<p>trial: $F_{(2.235, 100.0)} = 5.231$, $P = 0.0052$ genotype: $F_{(2, 45)} = 1.827$, $P = 0.1726$ trial × genotype: $F_{(8, 179)} = 1.186$, $P = 0.3099$</p>
S2B	<p>wild-type=17 MNK1^{KO}=14 MNK2^{KO}=17</p> <p><i>Trial 5 is missing from one MNK2^{KO} mouse</i></p>	Mixed-effects model	<p>trial: $F_{(2.676, 119.8)} = 30.94$, $P < 0.0001$ genotype: $F_{(2, 45)} = 2.411$, $P = 0.1012$ trial × genotype: $F_{(8, 179)} = 0.1849$, $P = 0.9927$</p>

S2C	<p>wild-type=17 MNK1^{KO}=14 MNK2^{KO}=17</p> <p><i>Trial 5 is missing from one MNK2^{KO} mouse</i></p>	Mixed-effects model, Tukey's post-hoc test for multiple comparisons	<p>trial: $F_{(3.757, 168.1)} = 4.985$, $P=0.0010$ genotype: $F_{(2, 45)} = 4.599$, $P=0.0152$ trial \times genotype: $F_{(8, 179)} = 0.8569$, $P=0.5541$</p> <p>wild-type vs MNK1^{KO} Trial1: $P= 0.0520$ Trial2: $P= 0.4134$ Trial3: $P= 0.9037$ Trial4: $P= 0.6319$ Trial5: $P= 0.3153$</p> <p>wild-type vs MNK2^{KO} Trial1: $P= 0.0155$ Trial2: $P= 0.0752$ Trial3: $P= 0.4734$ Trial4: $P= 0.1237$ Trial5: $P= 0.0995$</p> <p>MNK1^{KO} vs MNK2^{KO} Trial1: $P= 0.9999$ Trial2: $P= 0.6942$ Trial3: $P= 0.3563$ Trial4: $P= 0.5535$ Trial5: $P= 0.9831$</p>
S2D	<p>wild-type=17 MNK1^{KO}=14 MNK2^{KO}=17</p> <p><i>Trial 5 is missing from one MNK2^{KO} mouse</i></p>	Mixed-effects model, Tukey's post-hoc test for multiple comparisons	<p>trial: $F_{(2.492, 111.5)} = 3.214$, $P=0.0336$ genotype: $F_{(2, 45)} = 3.387$, $P=0.0426$ trial \times genotype: $F_{(8, 179)} = 0.7083$, $P=0.6840$</p> <p>wild-type vs MNK1^{KO} Trial1: $P= 0.0714$ Trial2: $P= 0.0610$ Trial3: $P= 0.9046$ Trial4: $P= 0.7391$ Trial5: $P= 0.1718$</p> <p>wild-type vs MNK2^{KO} Trial1: $P= 0.2334$ Trial2: $P= 0.4526$ Trial3: $P= 0.5697$ Trial4: $P= 0.3383$ Trial5: $P= 0.9498$</p> <p>MNK1^{KO} vs MNK2^{KO} Trial1: $P= 0.7469$ Trial2: $P= 0.6209$ Trial3: $P= 0.7352$ Trial4: $P= 0.7417$ Trial5: $P= 0.2276$</p>
S2E	<p>wild-type=17 MNK1^{KO}=14 MNK2^{KO}=17</p>	Mixed-effects model, Tukey's post-hoc test for multiple comparisons	<p>trial: $F_{(3.672, 164.3)} = 1.060$, $P=0.3753$ genotype: $F_{(2, 45)} = 5.983$, $P=0.0050$ trial \times genotype: $F_{(8, 179)} = 0.5915$, $P=0.7841$</p>

	<p><i>Trial 5 is missing from one MNK2^{KO} mouse</i></p>		<p>wild-type vs MNK1^{KO} Trial1: P= 0.2486 Trial2: P= 0.0274 Trial3: P= 0.3846 Trial4: P= 0.9537 Trial5: P= 0.1072</p> <p>wild-type vs MNK2^{KO} Trial1: P= 0.3977 Trial2: P= 0.1633 Trial3: P= 0.2106 Trial4: P=0.4885 Trial5: P= 0.4039</p> <p>MNK1^{KO} vs MNK2^{KO} Trial1: P= 0.8071 Trial2: P= 0.3965 Trial3: P= 0.9997 Trial4: P= 0.7163 Trial5: P= 0.8183</p>
S2F	<p>wild-type=17 MNK1^{KO}=14 MNK2^{KO}=17</p> <p><i>Trial 5 is missing from one MNK2^{KO} mouse</i></p>	<p>Mixed-effects model, Tukey's post-hoc test for multiple comparisons</p>	<p>trial: F_(2.962, 132.5) = 3.233, P=0.0250 genotype: F_(2, 45) = 12.11, P<0.0001 trial × genotype: F_(8, 179) = 1.633, P= 0.1182</p> <p>wild-type vs MNK1^{KO} Trial1: P= 0.5450 Trial2: P= 0.0354 Trial3: P= 0.3064 Trial4: P= 0.0154 Trial5: P= 0.2479</p> <p>wild-type vs MNK2^{KO} Trial1: P= 0.0001 Trial2: P= 0.0008 Trial3: P= 0.0182 Trial4: P= 0.2998 Trial5: P= 0.0304</p> <p>MNK1^{KO} vs MNK2^{KO} Trial1: P= 0.0472 Trial2: P= 0.3948 Trial3: P= 0.3763 Trial4: P= 0.1547 Trial5: P= 0.8933</p>
S2G	<p>wild-type=17 MNK1^{KO}=14 MNK2^{KO}=17</p> <p><i>Trial 5 is missing from one MNK2^{KO} mouse</i></p>	<p>Mixed-effects model, Tukey's post-hoc test for multiple comparisons</p>	<p>trial: F_(3.078, 137.8) = 1.141, P=0.3355 genotype: F_(2, 45) = 5.391, P=0.0080 trial × genotype: F_(8, 179) = 0.5523, P= 0.8157</p> <p>wild-type vs MNK1^{KO} Trial1: P= 0.3453</p>

			<p>Trial2: P= 0.1734 Trial3: P= 0.4833 Trial4: P= 0.2026 Trial5: P= 0.0955</p> <p>wild-type vs MNK2^{KO} Trial1: P= 0.0298 Trial2: P= 0.0693 Trial3: P= 0.2653 Trial4: P= 0.6798 Trial5: P= 0.7745</p> <p>MNK1^{KO} vs MNK2^{KO} Trial1: P= 0.9522 Trial2: P= 0.9916 Trial3: P= 0.8581 Trial4: P= 0.5523 Trial5: P= 0.3675</p>
S2H	<p>wild-type=17 MNK1^{KO}=14 MNK2^{KO}=17</p> <p><i>Trial 5 is missing from one MNK2^{KO} mouse</i></p>	Mixed-effects model, Tukey's post-hoc test for multiple comparisons	<p>trial: F_(3.629, 162.4) = 17.83, P<0.0001 genotype: F_(2, 45) = 1.410, P=0.2548 trial × genotype: F_(8, 179) = 0.9646, P= 0.4652</p>
S2I	<p><i>Trial 1-4</i> wild-type=17 MNK1^{KO}=14 MNK2^{KO}=17</p> <p><i>Trial 5</i> wild-type=17 MNK1^{KO}=14 MNK2^{KO}=16</p> <p><i>Trial 5 is missing from one MNK2^{KO} mouse</i></p>	<p><i>Trial 1-4</i> RM two-way ANOVA Tukey's post-hoc test for multiple comparisons</p> <p><i>Trial 5</i> Kruskal-Wallis test, Dunn's post-hoc test for multiple comparisons</p>	<p>trial: F_(2.405, 108.2) = 9.880, P<0.0001 genotype: F_(2, 45) = 0.1016, P=0.9036 trial × genotype: F_(6, 135) = 0.2036, P=0.9752</p> <p><i>Trial 5</i> K₍₃₎= 1.752, P= 0.4164</p>
S2J	<p><i>Trial 1-4</i> wild-type=17 MNK1^{KO}=14 MNK2^{KO}=17</p> <p><i>Trial 5</i> wild-type=17 MNK1^{KO}=14 MNK2^{KO}=16</p> <p><i>Trial 5 is missing from one MNK2^{KO} mouse</i></p>	<p><i>Trial 1-4</i> RM two-way ANOVA Tukey's post-hoc test for multiple comparisons</p> <p><i>Trial 5</i> Kruskal-Wallis test, Dunn's post-hoc test for multiple comparisons</p>	<p>trial: F_(1.831, 82.39) = 1.237, P=0.2933 genotype: F_(2, 45) = 1.049, P=0.3587 trial × genotype: F_(6, 135) = 0.7871, P=0.5815</p> <p><i>Trial 5</i> K₍₃₎= 1.133, P= 0.5676</p>
S2K	<p><i>Trial 1-4</i> wild-type=17 MNK1^{KO}=14 MNK2^{KO}=17</p> <p><i>Trial 5</i> wild-type=17 MNK1^{KO}=14 MNK2^{KO}=16</p>	<p><i>Trial 1-4</i> RM two-way ANOVA Tukey's post-hoc test for multiple comparisons</p> <p><i>Trial 5</i> Kruskal-Wallis test, Dunn's post-hoc test for multiple comparisons</p>	<p>trial: F_(2.726, 122.7) = 0.8485, P=0.4608 genotype: F_(2, 45) = 4.349, P=0.0188 trial × genotype: F_(6, 135) = 1.347, P=0.2405</p> <p>wild-type vs MNK1^{KO} Trial1: P= 0.2406</p>

	<p><i>Trial 5 is missing from one MNK2^{KO} mouse</i></p>		<p>Trial2: P= 0.0848 Trial3: P= 0.8704 Trial4: P= 0.5397</p> <p>wild-type vs MNK2^{KO} Trial1: P= 0.0840 Trial2: P= 0.0009 Trial3: P= 0.1845 Trial4: P= 0.7983</p> <p>MNK1^{KO} vs MNK2^{KO} Trial1: P= 0.8235 Trial2: P= 0.5235 Trial3: P= 0.4831 Trial4: P= 0.8956</p> <p><i>Trial 5</i> K₍₃₎= 7.106, P= 0.0286 wild-type vs MNK1^{KO}: P= 0.1021 wild-type vs MNK2^{KO}: P= 0.0465 MNK1^{KO} vs MNK2^{KO}: P >0.9999</p>
S2L	<p><i>Trial 1-4</i> wild-type=17 MNK1^{KO}=14 MNK2^{KO}=17</p> <p><i>Trial 5</i> wild-type=17 MNK1^{KO}=14 MNK2^{KO}=16</p> <p><i>Trial 5 is missing from one MNK2^{KO} mouse</i></p>	<p><i>Trial 1-4</i> RM two-way ANOVA Tukey's post-hoc test for multiple comparisons</p> <p><i>Trial 5</i> Kruskal-Wallis test, Dunn's post-hoc test for multiple comparisons</p>	<p>trial: F_(2,199, 98.94) = 13.31, P<0.0001 genotype: F_(2, 45) = 9.062, P=0.0005 trial × genotype: F_(6, 135) = 1.747, P=0.1149</p> <p>wild-type vs MNK1^{KO} Trial1: P= 0.0098 Trial2: P= 0.0122 Trial3: P= 0.0029 Trial4: P= 0.3759</p> <p>wild-type vs MNK2^{KO} Trial1: P= 0.1692 Trial2: P= 0.1393 Trial3: P= 0.0425 Trial4: P>0.9999</p> <p>MNK1^{KO} vs MNK2^{KO} Trial1: P= 0.6840 Trial2: P= 0.2173 Trial3: P= 0.5598 Trial4: P= 0.2081</p> <p><i>Trial 5</i> K₍₃₎= 8.680, P= 0.0130 wild-type vs MNK1^{KO}: P= 0.0100 wild-type vs MNK2^{KO}: P= 0.7436 MNK1^{KO} vs MNK2^{KO}: P = 0.2177</p>
S2M	<p><i>Trial 1-4</i> wild-type=17 MNK1^{KO}=14</p>	<p><i>Trial 1-4</i></p>	<p>trial: F_(2,267, 102.0) = 48.06, P<0.0001 genotype: F_(2, 45) = 3.162, P=0.0519</p>

	<p>MNK2^{KO}=17</p> <p><i>Trial 5</i> wild-type=17 MNK1^{KO}=14 MNK2^{KO}=16</p> <p><i>Trial 5 is missing from one MNK2^{KO} mouse</i></p>	<p>RM two-way ANOVA Tukey's post-hoc test for multiple comparisons</p> <p><i>Trial 5</i> One-way ANOVA, Tukey's post-hoc test for multiple comparisons</p>	<p>trial × genotype: $F_{(6, 135)} = 3.638$, $P=0.0022$</p> <p>wild-type vs MNK1^{KO} Trial1: $P= 0.0014$ Trial2: $P= 0.0247$ Trial3: $P= 0.0725$ Trial4: $P= 0.7854$</p> <p>wild-type vs MNK2^{KO} Trial1: $P= 0.9622$ Trial2: $P= 0.9987$ Trial3: $P= 0.6026$ Trial4: $P= 0.8590$</p> <p>MNK1^{KO} vs MNK2^{KO} Trial1: $P= 0.0272$ Trial2: $P= 0.0407$ Trial3: $P= 0.4160$ Trial4: $P= 0.9713$</p> <p><i>Trial 5</i> $F_{(2, 44)} = 3.811$, $P=0.0298$ wild-type vs MNK1^{KO}: $P= 0.0577$ wild-type vs MNK2^{KO}: $P= 0.9865$ MNK1^{KO} vs MNK2^{KO}: $P= 0.0442$</p>
S2L	<p>wild-type=17 MNK1^{KO}=14 MNK2^{KO}=17</p>	<p>RM two-way ANOVA, Tukey's post-hoc test for multiple comparisons</p>	<p>PC: $F_{(1, 45)} = 0.02775$, $P=0.8684$ genotype: $F_{(2, 45)} = 16.44$, $P<0.0001$ PC × genotype: $F_{(2, 45)} = 11.61$, $P<0.0001$</p> <p>PC1: wild-type vs MNK1^{KO}: $P<0.0001$ wild-type vs MNK2^{KO}: $P=0.0092$ MNK1^{KO} vs MNK2^{KO}: $P=0.0057$</p> <p>PC1: wild-type vs MNK1^{KO}: $P=0.8159$ wild-type vs MNK2^{KO}: $P=0.0021$ MNK1^{KO} vs MNK2^{KO}: $P=0.0005$</p>
S4B	<p>Mean log₂ value of ETC-168 treated wild-type relative to vehicle-treated wild-type from 4 mice per treatment. Ribosomes: 77 All: 77 randomly selected proteins</p>	<p>Kolmogorov-Smirnov test</p>	<p>WT ETC-168: $D= 0.3506$, $P=0.0002$</p>
S5C	<p>Mean log₂ value relative to wild-type from 3 mice per genotype.</p>	<p>Pearson r</p>	<p>MNK1^{KO} logFC vs MNK2^{KO} logFC: $r = 0.1540$ (95% confidence interval 0.1398 – 0.1683), $P<0.0001$</p>

	Number of pairs: 18019 RNAs / genotype		
S6A	wild-type=6 MNK1 ^{KO} =7 MNK2 ^{KO} =7	Kruskal-Wallis test, Dunn's post-hoc test for multiple comparisons	K ₍₃₎ =12.46, P=0.0002 wild-type vs MNK1 ^{KO} : P=0.0200 wild-type vs MNK2 ^{KO} : P=0.0023 MNK1 ^{KO} vs MNK2 ^{KO} : P>0.9999
S6B	wild-type=6 MNK1 ^{KO} =7 MNK2 ^{KO} =7	Kruskal-Wallis test, Dunn's post-hoc test for multiple comparisons	K ₍₃₎ =15.43, P<0.0001 wild-type vs MNK1 ^{KO} : P=0.0003 wild-type vs MNK2 ^{KO} : P=0.0950 MNK1 ^{KO} vs MNK2 ^{KO} : P=0.1920
S6C	wild-type=14 MNK1 ^{KO} =14 MNK2 ^{KO} =16 MNK1/2 ^{DKO} =8	One-way ANOVA	F _{F (3, 48)} = 2.378, P=0.0814
S6D	wild-type=14 MNK1 ^{KO} =15 MNK2 ^{KO} =15 MNK1/2 ^{DKO} =8	One-way ANOVA	F _(3, 48) = 1.523, P=0.2204
S6E	wild-type=8 MNK1 ^{KO} =8 MNK2 ^{KO} =9	One-way ANOVA	F _(2, 22) = 0.9563, P=0.3997
S6F	wild-type=9 MNK1 ^{KO} =9 MNK2 ^{KO} =10 MNK1/2 ^{DKO} =7	One-way ANOVA	F _(3, 31) = 0.7150, P=0.5505
S6G	wild-type=6 MNK1 ^{KO} =7 MNK2 ^{KO} =7 MNK1/2 ^{DKO} =4	One-way ANOVA	F _(3, 20) = 1.050, P=0.3922
S6H	wild-type=14 MNK2 ^{KO} =16	Mann-Whitney test	Mann-Whitney U = 52, P=0.0118
S6H	wild-type=8 MNK2 ^{KO} =9	Mann-Whitney test	Mann-Whitney U = 19, P=0.1139