

Table S1. Acute APP Suppression Pilot Study (Figure S1)

	Test	Measure	Effect	df	F value	p value
APP immunoblot	Two-way ANOVA	Signal intensity, relative to GAPDH	Treatment	1, 10	132.3	< 0.0001
			Age	1, 10	0.0104	0.9207
			Interaction	1, 10	0.0104	0.9207
CS Silver, cortex	Students t-test	% Surface area	Treatment	5	t = 1.193	0.2864
CS Silver, hippocampus	Students t-test	% Surface area	Treatment	5	t = 1.139	0.3064
MWM	Two-way ANOVA	Days to criteria	Treatment	1, 36	5.112	0.0299
			Genotype	1, 36	28.61	< 0.0001
			Interaction	1, 36	0.30	0.5886
RAWM	Two-way ANOVA	Average errors	Treatment	1, 34	1.047	0.3134
			Genotype	1, 34	21.39	< 0.0001
			Interaction	1, 34	0.013	0.9094
RAWM	Two-way ANOVA with Repeated Measures	Errors per trial	Trial	6, 204	2.93	0.0092
			Condition (genotype + treatment)	3, 34	7.23	0.0007
			Interaction	18, 204	0.60	0.9008
Amyloid Histology (Figure 2 and Figure S2)						
	Test	Measure	Effect	df	F value	p value
CS Silver, Cortex	One-way ANOVA	% Surface area	Treatment	4, 46	85.48	< 0.0001
NAB61, Cortex	One-way ANOVA	% Surface area	Treatment	4, 46	16.22	< 0.0001
Thio-S, Cortex	One-way ANOVA	% Surface area	Treatment	4, 46	19.62	< 0.0001
CS Silver, Hippocampus	One-way ANOVA	% Surface area	Treatment	4, 46	75.50	< 0.0001
NAB61, Hippocampus	One-way ANOVA	% Surface area	Treatment	4, 46	13.00	< 0.0001
Thio-S, Hippocampus	One-way ANOVA	% Surface area	Treatment	4, 46	20.34	< 0.0001
Aβ ELISA (Figure S3)						
	Test	Measure	Effect	df	F value	p value
Total A β , TBS	One-way ANOVA	Concentration	Treatment	4, 70	54.25	< 0.0001
Total A β , TBS-X	One-way ANOVA	Concentration	Treatment	4, 70	4.60	0.0024
Total A β , Guanidine	One-way ANOVA	Concentration	Treatment	4, 70	23.33	< 0.0001
A β 40, TBS	One-way ANOVA	Concentration	Treatment	4, 70	47.11	< 0.0001
A β 40, TBS-X	One-way ANOVA	Concentration	Treatment	4, 70	3.981	0.0057
A β 40, Guanidine	One-way ANOVA	Concentration	Treatment	4, 70	21.93	< 0.0001
A β 42, TBS	One-way ANOVA	Concentration	Treatment	4, 70	49.38	< 0.0001
A β 42, TBS-X	One-way ANOVA	Concentration	Treatment	4, 70	4.517	0.0026
A β 42, Guanidine	One-way ANOVA	Concentration	Treatment	4, 70	13.59	< 0.0001
Synaptophysin, Ubiquitin, LAMP1 Immunostain (Figures 3, 4)						
	Test	Measure	Effect	df	F value	p value
Synaptophysin	Two-way ANOVA with Repeated Measures	% surface area	Distance	2, 92	256.3	0.0008
			Treatment	4, 46	7.541	< 0.0001
			Interaction	8, 92	3.76	< 0.0001
Ubiquitin	One-way ANOVA	% surface area	Treatment	4, 46	15.93	< 0.0001
LAMP1	One-way ANOVA	% surface area	Treatment	4, 46	4.38	0.0044
TFEB, mTOR Immunoblots (Figures 4, 5)						
	Test	Measure	Effect	df	F value	p value
TFEB	One-way ANOVA	Signal intensity, relative to GAPDH	Treatment	4, 35	5.43	0.0016

pS6	One-way ANOVA	Signal intensity, relative to GAPDH	Treatment	4, 35	7.03	0.0003
pAKT	One-way ANOVA	Signal intensity, relative to GAPDH	Treatment	4, 35	9.26	< 0.0001
p-cofilin	One-way ANOVA	Signal intensity, relative to GAPDH	Treatment	4, 35	7.83	< 0.0001
Open Field (Figure S4)						
	Test	Measure	Effect	df	F value	p value
Distance Traveled	One-way ANOVA	Distance traveled	Treatment	4, 126	0.26	0.9048
% Path in Center	One-way ANOVA	% path	Treatment	4, 126	2.67	0.0357
Straight Swim (Figure S4)						
	Test	Measure	Effect	df	F value	p value
Mean speed	One-way ANOVA	Swim speed	Treatment	4, 126	2.87	0.0258
MWM (Figure 6 and Figure S4)						
	Test	Measure	Effect	df	F or H value	p value
Training	Two-way ANOVA with Repeated Measures	Path length, days 1 and 2	Day	1, 126	44.56	< 0.0001
			Treatment	4, 126	4.45	0.0021
			Interaction	4, 126	2.83	0.0274
Training	Two-way ANOVA with Repeated Measures	STM Probe proximity, days 1 and 2	Day	1, 126	19.09	< 0.0001
			Treatment	4, 126	6.62	< 0.0001
			Interaction	4, 126	3.82	0.0058
Days to Criteria	Kruskal-Wallis	Number of Days	Treatment	-	43.66	< 0.0001
LTM Probe	One-way ANOVA	% Path in target	Treatment	4, 96	1.01	0.4078
LTM Probe	One-way ANOVA	Proximity	Treatment	4, 96	1.26	0.2894
Visible Platform (Figure S4)						
	Test	Measure	Effect	df	F value	p value
Distance traveled	One-way ANOVA	Average path length	Treatment	4, 126	2.39	0.0545
RAWM (Figure 6)						
	Test	Measure	Effect	df	F value	p value
Total re-entry errors	One-way ANOVA	Errors	Treatment	4, 125	9.44	< 0.0001
Re-entry errors by trial	Two-way ANOVA with Repeated Measures	Errors	Trial	6, 750	4.073	0.0005
			Treatment	4, 125	9.42	< 0.0001
			Interaction	24, 750	0.83	0.6901
CFC (Figure 6)						
	Test	Measure	Effect	df	F value	p value
% Time immobile	One-way ANOVA	% Time immobile	Treatment	4, 126	3.27	0.0138
% Time immobile by minute	Two-way ANOVA with Repeated Measures	% Time immobile	Minute	4, 504	16.81	< 0.0001
			Treatment	4, 126	2.80	0.0288
			Interaction	16, 504	1.92	0.0166
Aggregate Behavior						
	Test	Measure	Effect	df	F value	p value
Cognitive function	MANOVA	Behavioral Performance	Treatment	3, 49	3.78	0.02
Behavioral Performance vs. Aβ Correlations (Figure 7)						
	Test	Measure	Effect	df	F value	p value
MWM Total Ave Distance	ANOVA	Total A β , TBS	linear	1, 73	23.85	<0.0001
MWM Total Ave Distance	ANOVA	Total A β , TBS	poly, degree = 2	2, 72	21.95	<<0.0001

MWM, D2 Probe Proximity	ANOVA	Total A β , TBS	poly, degree = 2	2, 72	16.16	<<0.0001
RAWM Ave Errors	ANOVA	Total A β , TBS	poly, degree = 2	2, 72	31.39	<<0.0001
ISF Aβ (Figure 7)						
	Test	Measure	Effect	df	t value	p value
A β 40	Students t-test	A β concentration	Treatment	11	2.78	0.0179
A β 42	Students t-test	A β concentration	Treatment	7	4.97	0.0016

Pearson Correlations						
Aβ concentration						
	A β 40, TBS	A β 40, TBS-X	A β 40, Guanidine	A β 42, TBS	A β 42, TBS-X	A β 42, Guanidine
A β 40, TBS	1.000	0.570	0.511	0.935	0.512	0.432
A β 40, TBS-X	0.570	1.000	0.222	0.590	0.802	0.196
A β 40, Guanidine	0.511	0.222	1.000	0.517	0.166	0.246
A β 42, TBS	0.935	0.590	0.517	1.000	0.546	0.381
A β 42, TBS-X	0.512	0.802	0.166	0.546	1.000	0.233
A β 42, Guanidine	0.432	0.196	0.246	0.381	0.233	1.000
Behavioral performance						
	MWM Total Ave Distance	MWM D2 Probe Proximity	RAWM Ave Errors	FC Ave % Time Immobile		
MWM Total Ave Distance	1.000	0.679	0.551	-0.069		
MWM D2 Probe Proximity	0.679	1.000	0.378	-0.171		
RAWM Ave Errors	0.551	0.378	1.000	-0.109		
FC Ave % Time Immobile	-0.069	-0.171	-0.109	1.000		
Aβ concentration x Behavioral performance						
	MWM Total Ave Distance	MWM D2 Probe Proximity	RAWM Ave Errors	FC Ave % Time Immobile		
A β 40, TBS	0.513	0.404	0.626	-0.103		
A β 40, TBS-X	0.022	0.263	0.340	-0.072		
A β 40, Guanidine	0.356	0.303	0.528	-0.167		
A β 42, TBS	0.475	0.409	0.636	-0.067		
A β 42, TBS-X	0.060	0.244	0.295	0.034		
A β 42, Guanidine	0.239	0.328	0.208	-0.090		

Additional Posthoc Analyses				
*, P < 0.05; **, P < 0.01; ***, P < 0.001; ****, P < 0.0001				
Amyloid Histology (Figure 2 and Figure S2)				
CS Silver Cortex (Tukey post hoc)				
Comparison	Significant?	Summary	p value	
Pretreatment vs No Treatment	Yes	****	< 0.0001	
Pretreatment vs Ab9 Only	Yes	****	< 0.0001	
Pretreatment vs Dox Only	No	ns	0.9924	
Pretreatment vs Dox + Ab9	Yes	****	< 0.0001	
Dox Only vs Dox + Ab9	Yes	****	< 0.0001	
No Treatment vs Ab9 Only	Yes	**	0.0039	
No Treatment vs Dox Only	Yes	****	< 0.0001	
No Treatment vs Dox + Ab9	Yes	****	< 0.0001	
Ab9 Only vs Dox Only	Yes	****	< 0.0001	
Ab9 Only vs Dox + Ab9	Yes	****	< 0.0001	
CS Silver Hippocampus (Tukey post hoc)				

Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	Yes	****	< 0.0001
Pretreatment vs Ab9 Only	Yes	****	< 0.0001
Pretreatment vs Dox Only	No	ns	0.9739
Pretreatment vs Dox + Ab9	Yes	***	0.0006
Dox Only vs Dox + Ab9	Yes	**	0.0030
No Treatment vs Ab9 Only	No	ns	0.0734
No Treatment vs Dox Only	Yes	****	< 0.0001
No Treatment vs Dox + Ab9	Yes	****	< 0.0001
Ab9 Only vs Dox Only	Yes	****	< 0.0001
Ab9 Only vs Dox + Ab9	Yes	****	< 0.0001

NAB61 Cortex (Tukey post hoc)

Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	Yes	**	0.0018
Pretreatment vs Ab9 Only	No	ns	0.2721
Pretreatment vs Dox Only	No	ns	0.2092
Pretreatment vs Dox + Ab9	No	ns	0.0859
Dox Only vs Dox + Ab9	No	ns	0.9873
No Treatment vs Ab9 Only	No	ns	0.3527
No Treatment vs Dox Only	Yes	****	< 0.0001
No Treatment vs Dox + Ab9	Yes	****	< 0.0001
Ab9 Only vs Dox Only	Yes	**	0.0012
Ab9 Only vs Dox + Ab9	Yes	***	0.0004

NAB61 Hippocampus (Tukey post hoc)

Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	Yes	***	0.0004
Pretreatment vs Ab9 Only	No	ns	0.4994
Pretreatment vs Dox Only	No	ns	0.8668
Pretreatment vs Dox + Ab9	No	ns	0.3908
Dox Only vs Dox + Ab9	No	ns	0.9090
No Treatment vs Ab9 Only	No	ns	0.0566
No Treatment vs Dox Only	Yes	****	< 0.0001
No Treatment vs Dox + Ab9	Yes	****	< 0.0001
Ab9 Only vs Dox Only	No	ns	0.0892
Ab9 Only vs Dox + Ab9	Yes	*	0.0133

Thioflavin-S Cortex (Tukey post hoc)

Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	Yes	****	< 0.0001
Pretreatment vs Ab9 Only	Yes	**	0.0051
Pretreatment vs Dox Only	No	ns	0.9994
Pretreatment vs Dox + Ab9	No	ns	0.9453
Dox Only vs Dox + Ab9	No	ns	0.8594
No Treatment vs Ab9 Only	No	ns	0.0868
No Treatment vs Dox Only	Yes	****	< 0.0001
No Treatment vs Dox + Ab9	Yes	****	< 0.0001
Ab9 Only vs Dox Only	Yes	**	0.0076
Ab9 Only vs Dox + Ab9	Yes	***	0.0006

Thioflavin-S Hippocampus (Tukey post hoc)

Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	Yes	****	< 0.0001
Pretreatment vs Ab9 Only	Yes	***	0.0009
Pretreatment vs Dox Only	No	ns	0.8641
Pretreatment vs Dox + Ab9	No	ns	0.8431
Dox Only vs Dox + Ab9	No	ns	> 0.9999
No Treatment vs Ab9 Only	No	ns	0.7626
No Treatment vs Dox Only	Yes	****	< 0.0001
No Treatment vs Dox + Ab9	Yes	****	< 0.0001
Ab9 Only vs Dox Only	Yes	****	< 0.0001
Ab9 Only vs Dox + Ab9	Yes	****	< 0.0001

TBS Aβ40 ELISA (Tukey post hoc)			
Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	Yes	****	< 0.0001
Pretreatment vs Ab9 Only	Yes	****	< 0.0001
Pretreatment vs Dox Only	Yes	***	0.0007
Pretreatment vs Dox + Ab9	Yes	****	< 0.0001
Dox Only vs Dox + Ab9	No	ns	0.9136
No Treatment vs Ab9 Only	No	ns	0.9951
No Treatment vs Dox Only	Yes	****	< 0.0001
No Treatment vs Dox + Ab9	Yes	****	< 0.0001
Ab9 Only vs Dox Only	Yes	****	< 0.0001
Ab9 Only vs Dox + Ab9	Yes	****	< 0.0001
TBS Aβ42 ELISA (Tukey post hoc)			
Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	Yes	***	0.0002
Pretreatment vs Ab9 Only	Yes	***	0.0008
Pretreatment vs Dox Only	Yes	****	< 0.0001
Pretreatment vs Dox + Ab9	Yes	****	< 0.0001
Dox Only vs Dox + Ab9	No	ns	0.9281
No Treatment vs Ab9 Only	No	ns	0.9926
No Treatment vs Dox Only	Yes	****	< 0.0001
No Treatment vs Dox + Ab9	Yes	****	< 0.0001
Ab9 Only vs Dox Only	Yes	****	< 0.0001
Ab9 Only vs Dox + Ab9	Yes	****	< 0.0001
TBS Total Aβ ELISA (Tukey post hoc)			
Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	Yes	****	< 0.0001
Pretreatment vs Ab9 Only	Yes	****	< 0.0001
Pretreatment vs Dox Only	Yes	****	< 0.0001
Pretreatment vs Dox + Ab9	Yes	****	< 0.0001
Dox Only vs Dox + Ab9	No	ns	0.9071
No Treatment vs Ab9 Only	No	ns	> 0.9999
No Treatment vs Dox Only	Yes	****	< 0.0001
No Treatment vs Dox + Ab9	Yes	****	< 0.0001
Ab9 Only vs Dox Only	Yes	****	< 0.0001
Ab9 Only vs Dox + Ab9	Yes	****	< 0.0001
TBS-X Aβ40 ELISA (Tukey post hoc)			
Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.3633
Pretreatment vs Ab9 Only	No	ns	0.1306
Pretreatment vs Dox Only	No	ns	0.9656
Pretreatment vs Dox + Ab9	No	ns	0.9821
Dox Only vs Dox + Ab9	No	ns	> 0.9999
No Treatment vs Ab9 Only	No	ns	0.9809
No Treatment vs Dox Only	No	ns	0.1057
No Treatment vs Dox + Ab9	No	ns	0.1332
Ab9 Only vs Dox Only	Yes	*	0.0266
Ab9 Only vs Dox + Ab9	Yes	*	0.0353
TBS-X Aβ42 ELISA (Tukey post hoc)			
Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.9962
Pretreatment vs Ab9 Only	No	ns	0.2458
Pretreatment vs Dox Only	No	ns	0.8401
Pretreatment vs Dox + Ab9	No	ns	0.3261
Dox Only vs Dox + Ab9	No	ns	0.9067
No Treatment vs Ab9 Only	No	ns	0.4377
No Treatment vs Dox Only	No	ns	0.6337
No Treatment vs Dox + Ab9	No	ns	0.1689
Ab9 Only vs Dox Only	Yes	*	0.0227
Ab9 Only vs Dox + Ab9	Yes	**	0.0016

TBS-X Total Aβ ELISA (Tukey post hoc)			
Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.9569
Pretreatment vs Ab9 Only	No	ns	0.1857
Pretreatment vs Dox Only	No	ns	0.8595
Pretreatment vs Dox + Ab9	No	ns	0.4519
Dox Only vs Dox + Ab9	No	ns	0.9574
No Treatment vs Ab9 Only	No	ns	0.5521
No Treatment vs Dox Only	No	ns	0.4505
No Treatment vs Dox + Ab9	No	ns	0.1340
Ab9 Only vs Dox Only	Yes	*	0.0168
Ab9 Only vs Dox + Ab9	Yes	**	0.0020
Guanidine Aβ40 ELISA (Tukey post hoc)			
Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	Yes	****	< 0.0001
Pretreatment vs Ab9 Only	No	ns	0.4579
Pretreatment vs Dox Only	No	ns	0.6246
Pretreatment vs Dox + Ab9	No	ns	0.4894
Dox Only vs Dox + Ab9	No	ns	0.9995
No Treatment vs Ab9 Only	Yes	****	< 0.0001
No Treatment vs Dox Only	Yes	****	< 0.0001
No Treatment vs Dox + Ab9	Yes	****	< 0.0001
Ab9 Only vs Dox Only	Yes	*	0.0239
Ab9 Only vs Dox + Ab9	Yes	*	0.0131
Guanidine Aβ42 ELISA (Tukey post hoc)			
Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.0812
Pretreatment vs Ab9 Only	Yes	****	< 0.0001
Pretreatment vs Dox Only	No	ns	0.0830
Pretreatment vs Dox + Ab9	No	ns	0.9342
Dox Only vs Dox + Ab9	Yes	*	0.0103
No Treatment vs Ab9 Only	Yes	*	0.0153
No Treatment vs Dox Only	No	ns	> 0.9999
No Treatment vs Dox + Ab9	Yes	**	0.0100
Ab9 Only vs Dox Only	Yes	*	0.0149
Ab9 Only vs Dox + Ab9	Yes	****	< 0.0001
Guanidine Total Aβ ELISA (Tukey post hoc)			
Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	Yes	****	< 0.0001
Pretreatment vs Ab9 Only	No	ns	0.0634
Pretreatment vs Dox Only	No	ns	0.9062
Pretreatment vs Dox + Ab9	No	ns	0.4351
Dox Only vs Dox + Ab9	No	ns	0.9181
No Treatment vs Ab9 Only	Yes	**	0.0014
No Treatment vs Dox Only	Yes	****	< 0.0001
No Treatment vs Dox + Ab9	Yes	****	< 0.0001
Ab9 Only vs Dox Only	Yes	**	0.0056
Ab9 Only vs Dox + Ab9	Yes	***	0.0003
Synaptophysin Histology (Figure 3)			
10 μm (Tukey post hoc)			
Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.8117
Pretreatment vs Ab9 Only	Yes	*	0.0105
Pretreatment vs Dox Only	No	ns	0.1637
Pretreatment vs Dox + Ab9	Yes	**	0.0012
Dox Only vs Dox + Ab9	No	ns	0.3987
No Treatment vs Ab9 Only	No	ns	0.1453
No Treatment vs Dox Only	No	ns	0.7504
No Treatment vs Dox + Ab9	Yes	*	0.0313

Ab9 Only vs Dox Only	No	ns	0.7637
Ab9 Only vs Dox + Ab9	No	ns	0.9847
20 μm (Tukey post hoc)			
Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.9959
Pretreatment vs Ab9 Only	No	ns	0.0979
Pretreatment vs Dox Only	Yes	***	0.0001
Pretreatment vs Dox + Ab9	Yes	****	< 0.0001
Dox Only vs Dox + Ab9	No	ns	0.8676
No Treatment vs Ab9 Only	No	ns	0.1904
No Treatment vs Dox Only	Yes	***	0.0004
No Treatment vs Dox + Ab9	Yes	****	< 0.0001
Ab9 Only vs Dox Only	No	ns	0.3713
Ab9 Only vs Dox + Ab9	No	ns	0.0597
30 μm (Tukey post hoc)			
Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.8085
Pretreatment vs Ab9 Only	No	ns	0.4338
Pretreatment vs Dox Only	No	ns	0.0817
Pretreatment vs Dox + Ab9	Yes	*	0.0153
Dox Only vs Dox + Ab9	No	ns	0.9592
No Treatment vs Ab9 Only	No	ns	0.9608
No Treatment vs Dox Only	No	ns	0.5573
No Treatment vs Dox + Ab9	No	ns	0.2012
Ab9 Only vs Dox Only	No	ns	0.9429
Ab9 Only vs Dox + Ab9	No	ns	0.6348
Ubiquitin, LAMP1 Immunostains (Figure 4)			
Ubiquitin (Tukey post hoc)			
Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.8433
Pretreatment vs Ab9 Only	No	ns	0.9891
Pretreatment vs Dox Only	Yes	**	0.0016
Pretreatment vs Dox + Ab9	Yes	****	< 0.0001
Dox Only vs Dox + Ab9	No	ns	0.8274
No Treatment vs Ab9 Only	No	ns	0.9862
No Treatment vs Dox Only	Yes	****	< 0.0001
No Treatment vs Dox + Ab9	Yes	****	< 0.0001
Ab9 Only vs Dox Only	Yes	***	0.0005
Ab9 Only vs Dox + Ab9	Yes	****	< 0.0001
LAMP1 (Tukey post hoc)			
Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.9997
Pretreatment vs Ab9 Only	No	ns	> 0.9999
Pretreatment vs Dox Only	No	ns	0.1169
Pretreatment vs Dox + Ab9	No	ns	0.0538
Dox Only vs Dox + Ab9	No	ns	0.9938
No Treatment vs Ab9 Only	No	ns	0.9989
No Treatment vs Dox Only	No	ns	0.0657
No Treatment vs Dox + Ab9	Yes	*	0.0282
Ab9 Only vs Dox Only	No	ns	0.1571
Ab9 Only vs Dox + Ab9	No	ns	0.0761
TFEB, mTOR Immunoblots (Figures 4 and 5)			
TFEB (Tukey post hoc)			
Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.9557
Pretreatment vs Ab9 Only	No	ns	0.7303
Pretreatment vs Dox Only	No	ns	0.8475
Pretreatment vs Dox + Ab9	Yes	*	0.0431
Dox Only vs Dox + Ab9	No	ns	0.3233

No Treatment vs Ab9 Only	No	ns	0.9826
No Treatment vs Dox Only	No	ns	0.4407
No Treatment vs Dox + Ab9	Yes	**	0.0074
Ab9 Only vs Dox Only	No	ns	0.1857
Ab9 Only vs Dox + Ab9	Yes	**	0.0017

p-s6 (Tukey post hoc)

Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.9986
Pretreatment vs Ab9 Only	No	ns	0.9285
Pretreatment vs Dox Only	No	ns	0.1085
Pretreatment vs Dox + Ab9	Yes	**	0.0070
Dox Only vs Dox + Ab9	No	ns	0.7871
No Treatment vs Ab9 Only	No	ns	0.8151
No Treatment vs Dox Only	No	ns	0.1880
No Treatment vs Dox + Ab9	Yes	*	0.0145
Ab9 Only vs Dox Only	Yes	*	0.0167
Ab9 Only vs Dox + Ab9	Yes	***	0.0007

p-AKT (Tukey post hoc)

Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	> 0.9999
Pretreatment vs Ab9 Only	No	ns	0.9066
Pretreatment vs Dox Only	No	ns	0.2471
Pretreatment vs Dox + Ab9	Yes	***	0.0008
Dox Only vs Dox + Ab9	No	ns	0.1625
No Treatment vs Ab9 Only	No	ns	0.9435
No Treatment vs Dox Only	No	ns	0.1998
No Treatment vs Dox + Ab9	Yes	***	0.0006
Ab9 Only vs Dox Only	Yes	*	0.0412
Ab9 Only vs Dox + Ab9	Yes	****	< 0.0001

p-cofilin (Tukey post hoc)

Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.9997
Pretreatment vs Ab9 Only	No	ns	> 0.9999
Pretreatment vs Dox Only	Yes	*	0.0295
Pretreatment vs Dox + Ab9	Yes	**	0.0023
Dox Only vs Dox + Ab9	No	ns	0.8729
No Treatment vs Ab9 Only	No	ns	0.9978
No Treatment vs Dox Only	Yes	*	0.0463
No Treatment vs Dox + Ab9	Yes	**	0.0040
Ab9 Only vs Dox Only	Yes	*	0.0217
Ab9 Only vs Dox + Ab9	Yes	**	0.0017

Behavior (Figure 6)

MWM Days to criteria (Dunn's)

Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.2018
Pretreatment vs Ab9 Only	No	ns	> 0.9999
Pretreatment vs Dox Only	No	ns	0.8903
Pretreatment vs Dox + Ab9	Yes	**	0.0031
Dox Only vs Dox + Ab9	No	ns	0.4815
No Treatment vs Ab9 Only	No	ns	0.8852
No Treatment vs Dox Only	Yes	***	0.0003
No Treatment vs Dox + Ab9	Yes	****	< 0.0001
Ab9 Only vs Dox Only	No	ns	0.1641
Ab9 Only vs Dox + Ab9	Yes	***	0.0001

MWM STM Probe (Tukey post hoc)

Day 1 Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	> 0.9999
Pretreatment vs Ab9 Only	No	ns	0.9778
Pretreatment vs Dox Only	No	ns	0.6302

Pretreatment vs Dox + Ab9	No	ns	0.5610
Dox Only vs Dox + Ab9	No	ns	> 0.9999
No Treatment vs Ab9 Only	No	ns	0.9817
No Treatment vs Dox Only	No	ns	0.5596
No Treatment vs Dox + Ab9	No	ns	0.4890
Ab9 Only vs Dox Only	No	ns	0.2572
Ab9 Only vs Dox + Ab9	No	ns	0.2116

Day 2 Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.0928
Pretreatment vs Ab9 Only	No	ns	0.4380
Pretreatment vs Dox Only	No	ns	0.6816
Pretreatment vs Dox + Ab9	Yes	*	0.0440
Dox Only vs Dox + Ab9	No	ns	0.5401
No Treatment vs Ab9 Only	No	ns	0.9318
No Treatment vs Dox Only	Yes	***	0.0009
No Treatment vs Dox + Ab9	Yes	****	< 0.0001
Ab9 Only vs Dox Only	Yes	*	0.0187
Ab9 Only vs Dox + Ab9	Yes	****	< 0.0001

RAWM Total Error (Tukey post hoc)

Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.1323
Pretreatment vs Ab9 Only	No	ns	0.9815
Pretreatment vs Dox Only	No	ns	0.2754
Pretreatment vs Dox + Ab9	Yes	*	0.0380
Dox Only vs Dox + Ab9	No	ns	0.8836
No Treatment vs Ab9 Only	No	ns	0.3434
No Treatment vs Dox Only	Yes	***	0.0001
No Treatment vs Dox + Ab9	Yes	****	< 0.0001
Ab9 Only vs Dox Only	No	ns	0.0704
Ab9 Only vs Dox + Ab9	Yes	**	0.0051

RAWM Error by Trial (Tukey post hoc)

Trial 1 Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.9852
Pretreatment vs Ab9 Only	No	ns	0.8319
Pretreatment vs Dox Only	No	ns	0.9989
Pretreatment vs Dox + Ab9	No	ns	0.6624
Dox Only vs Dox + Ab9	No	ns	0.7911
No Treatment vs Ab9 Only	No	ns	0.9800
No Treatment vs Dox Only	No	ns	0.9989
No Treatment vs Dox + Ab9	No	ns	0.9056
Ab9 Only vs Dox Only	No	ns	0.9243
Ab9 Only vs Dox + Ab9	No	ns	0.9981

Trial 2 Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.8622
Pretreatment vs Ab9 Only	No	ns	0.9786
Pretreatment vs Dox Only	No	ns	0.3352
Pretreatment vs Dox + Ab9	No	ns	0.2039
Dox Only vs Dox + Ab9	No	ns	0.9982
No Treatment vs Ab9 Only	No	ns	0.4833
No Treatment vs Dox Only	Yes	*	0.0236
No Treatment vs Dox + Ab9	Yes	**	0.0099
Ab9 Only vs Dox Only	No	ns	0.6726
Ab9 Only vs Dox + Ab9	No	ns	0.4880

Trial 3 Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.6335
Pretreatment vs Ab9 Only	No	ns	0.9835
Pretreatment vs Dox Only	No	ns	0.6367
Pretreatment vs Dox + Ab9	No	ns	0.3094
Dox Only vs Dox + Ab9	No	ns	0.9801
No Treatment vs Ab9 Only	No	ns	0.9068

No Treatment vs Dox Only	Yes	*	0.0303
No Treatment vs Dox + Ab9	Yes	**	0.0053
Ab9 Only vs Dox Only	No	ns	0.2712
Ab9 Only vs Dox + Ab9	No	ns	0.0845
Trial 4 Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.9725
Pretreatment vs Ab9 Only	No	ns	0.9779
Pretreatment vs Dox Only	No	ns	0.9507
Pretreatment vs Dox + Ab9	No	ns	0.1850
Dox Only vs Dox + Ab9	No	ns	0.5427
No Treatment vs Ab9 Only	No	ns	0.7232
No Treatment vs Dox Only	No	ns	0.6238
No Treatment vs Dox + Ab9	Yes	*	0.0280
Ab9 Only vs Dox Only	No	ns	> 0.9999
Ab9 Only vs Dox + Ab9	No	ns	0.4603
Trial 5 Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.4680
Pretreatment vs Ab9 Only	No	ns	0.7072
Pretreatment vs Dox Only	No	ns	0.2638
Pretreatment vs Dox + Ab9	No	ns	0.2549
Dox Only vs Dox + Ab9	No	ns	> 0.9999
No Treatment vs Ab9 Only	No	ns	0.9963
No Treatment vs Dox Only	Yes	**	0.0013
No Treatment vs Dox + Ab9	Yes	**	0.0013
Ab9 Only vs Dox Only	Yes	**	0.0063
Ab9 Only vs Dox + Ab9	Yes	**	0.0062
Trial 6 Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.6313
Pretreatment vs Ab9 Only	No	ns	0.9942
Pretreatment vs Dox Only	No	ns	0.6855
Pretreatment vs Dox + Ab9	No	ns	0.1421
Dox Only vs Dox + Ab9	No	ns	0.8290
No Treatment vs Ab9 Only	No	ns	0.3343
No Treatment vs Dox Only	Yes	*	0.0379
No Treatment vs Dox + Ab9	Yes	**	0.0011
Ab9 Only vs Dox Only	No	ns	0.8865
Ab9 Only vs Dox + Ab9	No	ns	0.2844
Trial 7 Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.0780
Pretreatment vs Ab9 Only	No	ns	0.2273
Pretreatment vs Dox Only	No	ns	> 0.9999
Pretreatment vs Dox + Ab9	No	ns	0.9835
Dox Only vs Dox + Ab9	No	ns	0.9868
No Treatment vs Ab9 Only	No	ns	0.9910
No Treatment vs Dox Only	No	ns	0.0505
No Treatment vs Dox + Ab9	Yes	*	0.0118
Ab9 Only vs Dox Only	No	ns	0.1710
Ab9 Only vs Dox + Ab9	No	ns	0.0537
Trial 8 Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.1876
Pretreatment vs Ab9 Only	No	ns	> 0.9999
Pretreatment vs Dox Only	No	ns	0.3959
Pretreatment vs Dox + Ab9	No	ns	0.2846
Dox Only vs Dox + Ab9	No	ns	0.9994
No Treatment vs Ab9 Only	No	ns	0.2040
No Treatment vs Dox Only	Yes	***	0.0004
No Treatment vs Dox + Ab9	Yes	***	0.0002
Ab9 Only vs Dox Only	No	ns	0.3001
Ab9 Only vs Dox + Ab9	No	ns	0.2045

FC % Freezing (Tukey post hoc)

Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.9996
Pretreatment vs Ab9 Only	No	ns	0.2795
Pretreatment vs Dox Only	No	ns	0.9876
Pretreatment vs Dox + Ab9	Yes	*	0.0385
Dox Only vs Dox + Ab9	No	ns	0.1101
No Treatment vs Ab9 Only	No	ns	0.3461
No Treatment vs Dox Only	No	ns	0.9980
No Treatment vs Dox + Ab9	Yes	*	0.0494
Ab9 Only vs Dox Only	No	ns	0.5398
Ab9 Only vs Dox + Ab9	No	ns	0.8968

FC % Freezing by minute (Tukey post hoc)

Minute 1 Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.8403
Pretreatment vs Ab9 Only	No	ns	0.4717
Pretreatment vs Dox Only	No	ns	0.9526
Pretreatment vs Dox + Ab9	No	ns	0.7292
Dox Only vs Dox + Ab9	No	ns	0.2637
No Treatment vs Ab9 Only	No	ns	0.9664
No Treatment vs Dox Only	No	ns	0.3684
No Treatment vs Dox + Ab9	No	ns	0.9994
Ab9 Only vs Dox Only	No	ns	0.1106
Ab9 Only vs Dox + Ab9	No	ns	0.9940

Minute 2 Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.8746
Pretreatment vs Ab9 Only	No	ns	0.3217
Pretreatment vs Dox Only	No	ns	> 0.9999
Pretreatment vs Dox + Ab9	No	ns	0.1006
Dox Only vs Dox + Ab9	No	ns	0.0888
No Treatment vs Ab9 Only	No	ns	0.8590
No Treatment vs Dox Only	No	ns	0.8718
No Treatment vs Dox + Ab9	No	ns	0.5087
Ab9 Only vs Dox Only	No	ns	0.3035
Ab9 Only vs Dox + Ab9	No	ns	0.9779

Minute 3 Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.9912
Pretreatment vs Ab9 Only	No	ns	0.5740
Pretreatment vs Dox Only	No	ns	0.9998
Pretreatment vs Dox + Ab9	Yes	*	0.0418
Dox Only vs Dox + Ab9	No	ns	0.0528
No Treatment vs Ab9 Only	No	ns	0.8186
No Treatment vs Dox Only	No	ns	0.9983
No Treatment vs Dox + Ab9	No	ns	0.1046
Ab9 Only vs Dox Only	No	ns	0.6549
Ab9 Only vs Dox + Ab9	No	ns	0.6631

Minute 4 Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.9896
Pretreatment vs Ab9 Only	No	ns	0.6424
Pretreatment vs Dox Only	No	ns	0.9649
Pretreatment vs Dox + Ab9	No	ns	0.1266
Dox Only vs Dox + Ab9	No	ns	0.3963
No Treatment vs Ab9 Only	No	ns	0.3092
No Treatment vs Dox Only	No	ns	0.7654
No Treatment vs Dox + Ab9	Yes	*	0.0278
Ab9 Only vs Dox Only	No	ns	0.9454
Ab9 Only vs Dox + Ab9	No	ns	0.8521

Minute 5 Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.9373
Pretreatment vs Ab9 Only	No	ns	0.3476
Pretreatment vs Dox Only	No	ns	0.3203
Pretreatment vs Dox + Ab9	Yes	*	0.0208

Dox Only vs Dox + Ab9	No	ns	0.7547
No Treatment vs Ab9 Only	No	ns	0.7927
No Treatment vs Dox Only	No	ns	0.7678
No Treatment vs Dox + Ab9	No	ns	0.1264
Ab9 Only vs Dox Only	No	ns	> 0.9999
Ab9 Only vs Dox + Ab9	No	ns	0.7419

Behavior Continued (Figure S4)

Open Field Distance (Tukey post hoc)

Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	> 0.9999
Pretreatment vs Ab9 Only	No	ns	0.9998
Pretreatment vs Dox Only	No	ns	0.9512
Pretreatment vs Dox + Ab9	No	ns	> 0.9999
Dox Only vs Dox + Ab9	No	ns	0.9144
No Treatment vs Ab9 Only	No	ns	0.9985
No Treatment vs Dox Only	No	ns	0.9073
No Treatment vs Dox + Ab9	No	ns	> 0.9999
Ab9 Only vs Dox Only	No	ns	0.9792
Ab9 Only vs Dox + Ab9	No	ns	0.9987

Open Field % Path in Center (Tukey post hoc)

Day 1 Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.9830
Pretreatment vs Ab9 Only	No	ns	0.8844
Pretreatment vs Dox Only	No	ns	0.4098
Pretreatment vs Dox + Ab9	No	ns	0.8046
Dox Only vs Dox + Ab9	No	ns	0.9670
No Treatment vs Ab9 Only	No	ns	0.9937
No Treatment vs Dox Only	No	ns	0.1296
No Treatment vs Dox + Ab9	No	ns	0.4389
Ab9 Only vs Dox Only	No	ns	0.0535
Ab9 Only vs Dox + Ab9	No	ns	0.2370

Straight Swim (Tukey post hoc)

Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.9983
Pretreatment vs Ab9 Only	No	ns	> 0.9999
Pretreatment vs Dox Only	No	ns	0.3602
Pretreatment vs Dox + Ab9	No	ns	0.2128
Dox Only vs Dox + Ab9	No	ns	0.9975
No Treatment vs Ab9 Only	No	ns	0.9997
No Treatment vs Dox Only	No	ns	0.1820
No Treatment vs Dox + Ab9	No	ns	0.0925
Ab9 Only vs Dox Only	No	ns	0.2822
Ab9 Only vs Dox + Ab9	No	ns	0.1566

Visible Platform (Tukey post hoc)

Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.9947
Pretreatment vs Ab9 Only	No	ns	0.9989
Pretreatment vs Dox Only	No	ns	0.2205
Pretreatment vs Dox + Ab9	No	ns	0.1809
Dox Only vs Dox + Ab9	No	ns	> 0.9999
No Treatment vs Ab9 Only	No	ns	> 0.9999
No Treatment vs Dox Only	No	ns	0.3839
No Treatment vs Dox + Ab9	No	ns	0.3242
Ab9 Only vs Dox Only	No	ns	0.3311
Ab9 Only vs Dox + Ab9	No	ns	0.2773

Long Term Memory % Path in Target Quadrant (Tukey post hoc)

Day 1 Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.8490
Pretreatment vs Ab9 Only	No	ns	0.9909
Pretreatment vs Dox Only	No	ns	0.9964

Pretreatment vs Dox + Ab9	No	ns	0.9259
Dox Only vs Dox + Ab9	No	ns	0.7059
No Treatment vs Ab9 Only	No	ns	0.6305
No Treatment vs Dox Only	No	ns	0.9444
No Treatment vs Dox + Ab9	No	ns	0.3702
Ab9 Only vs Dox Only	No	ns	0.9208
Ab9 Only vs Dox + Ab9	No	ns	0.9985

Long Term Memory Proximity to Target (Tukey post hoc)

Comparison	Significant?	Summary	p value
Pretreatment vs No Treatment	No	ns	0.3223
Pretreatment vs Ab9 Only	No	ns	0.9441
Pretreatment vs Dox Only	No	ns	0.9357
Pretreatment vs Dox + Ab9	No	ns	> 0.9999
Dox Only vs Dox + Ab9	No	ns	0.9045
No Treatment vs Ab9 Only	No	ns	0.7862
No Treatment vs Dox Only	No	ns	0.6841
No Treatment vs Dox + Ab9	No	ns	0.2521
Ab9 Only vs Dox Only	No	ns	> 0.9999
Ab9 Only vs Dox + Ab9	No	ns	0.9223