

Supplementary Information

Cinnamaldehyde, a major bioactive component of cinnamon bark, enhances social approach behavior associated with a liver–brain FGF21–isotocin axis in zebrafish

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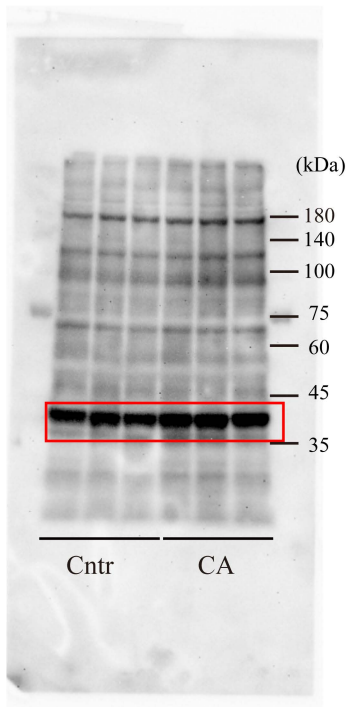
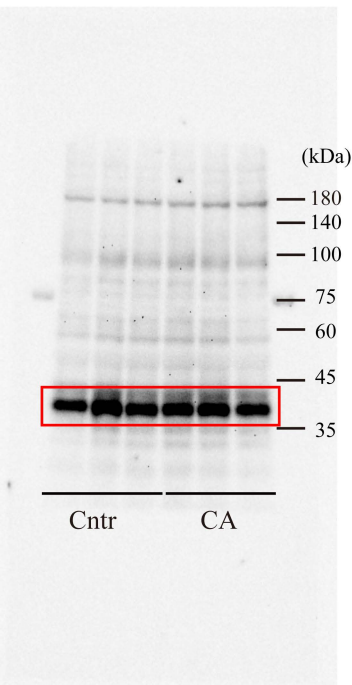
Supplementary Table 1 Primers used in this study

Supplementary Fig. 1 p-CREB and CREB expression pattern in zebrafish brain with CA treatment. Uncropped blot images using anti-p-CREB and CREB shown in Fig. 4.

Supplementary Table 2 Sample number used in this study

p-CREB

CREB



Supplementary Fig. 1

Supplementary Table 1 Primers used in this study

Gene	Primers	
<i>efla</i>	GTGCTGGCAAGGTCACAAAG	AGAGGTTGGGAAGAACACGC
<i>actb</i>	CGCCATACAGAGCAGAAGCCA	AGCACCCCTGTGCTGCTCACT
<i>ist</i>	TCTGGAAAGGCCTGCCCTTA	GCTGTTGGCCGGTTGATTGA
<i>avp</i>	CGCTCTCGTCTGCCTGCTAC	TCTTAAGTCCCGCGCTGCTG
<i>oxtra</i>	CACCCAAAGCATCCAAAGGC	GACCACATCTGCACGGAGAA
<i>oxtrb</i>	ACCAAACCTGTGAACCCCCTG	CTGGCCGTGTTTACTCGTCT
<i>avpr1aa</i>	TATAAGAGCAAGCGGACGCA	CCAGCAGATGACATAGGCGA
<i>avpr1ab</i>	ACCAAATCACGGCGAACAAC	CACAGATTTCCGACAACCGC
<i>gr</i>	AGCCGGAAAGGTAATCCAGC	TCCAGCCCAGTCCAAAAGAC
<i>mr</i>	CCCATTGAGGACCAAATCAC	AGTAGAGCATTGGGGCGTTG
<i>crh</i>	TCGTCCATGATCTTGC GGTT	GAATCTGCACGTGGTTGTCTG
<i>npy</i>	AAGATGTGGATGAGCTGGGC	TGAATAATACTTGGCGAGCTCCT
<i>cckb</i>	AGCGTCAACCACCGGATAAA	AGAGGACAGACGGAAACACG
<i>trpv1</i>	TTCGAATTTGTTTCCCTGGC	ATTAGAGGCAGCACCGGAAG
<i>trkb</i>	GACCTCGTACTTGCCCCAAA	GGATGTCCAGGTACACAGGC
<i>bdnf</i>	TTCTGAGCACGGCAGAAGTT	ACCTGTTGGAACATTTTCCCCTAT
<i>creb1</i>	CGAGTCTGTGTCGGGCTATC	CTTGTGCCAAGGTGGCAATC
<i>fgf21</i>	CTCTACCTCTGCGTCGATGA	ACGAATATCCATCCAGTAGCA
<i>klb</i>	ACAGACAGTCCGAGACAACG	GGATGCAGACGCACCTGTAATA
<i>fgfr1</i>	ATCACTCTGCATGGTTGACTGT	TCACACAGATGAGGAAGAAGCC
<i>th1</i>	TACATACGGCACGCTTCCTC	GAACCGCACAGAAAACGGTC
<i>th2</i>	AAAGGCTTATGGGGCTGGAC	GCTGCAAGTGTAGGGGTCAT
<i>slc6a3</i>	GCAGAACTTGTAGAAGGCGT	TAGCTTCGCCACCTTCAATC
<i>slc6a2</i>	TCTTGTTCTATGGCGTGGA	TCCGGAGGTAACAATGCTGG
<i>slc6a4a</i>	AACAACCGATGGAACACTCC	CAACACCTGCCGGACATAA
<i>htr1aa</i>	TGGTCCTTTACGGACGGATA	GAGACACCGCCAAGCATTTA
<i>p11</i>	TGCCATCCGAACTAGAGACC	CCAGAGAGCTCGTTCTCCAT
<i>tph1a</i>	CGAGTAAAAGCGACGGGCCA	TTCTTCGGGAACCACGGCAC
<i>gad1b</i>	GCTACCAACCACAGGGAGAC	CACAACGTGAAACATAGCCG
<i>gad2</i>	AACTTACCGCACCAAAACCT	CCCACAACGACGCTACCATA
<i>gabrala</i>	CCGTCTCAACCAGTATGACTT	TGACAACATACTCTCCAGTGCT

Supplementary Table 2 Sample number used in this study

	Figure	Treatment	Initial n	Final n	Excluded n	Reason for exclusion	(Statistically excluded values)	
Fig. 1	F	Cntr	11	11	0			
		Cinnnamon bark	11	7	4	Immobility:3 Statistical outlier:1	0.71	
	G	Cntr	11	10	1	Statistical outlier:1	68.0	
		Cinnnamon bark	11	8	3	Immobility:3		
	H	Cntr	11	10	1	Statistical outlier:1	68.4	
		Cinnnamon bark	11	8	3	Immobility:3		
Fig. 2	E	Cntr	12	10	2	Immobility:2		
		CA-5	12	12	0			
		CA-25	12	11	1	Immobility:1		
		CA-50	12	12	0			
	F	Cntr	12	10	2	Immobility:2		
		CA-5	12	11	1	Statistical outlier:1	150	
		CA-25	12	11	1	Immobility:1		
		CA-50	12	12	0			
	G	Cntr	12	10	2	Immobility:2		
		CA-5	12	11	1	Statistical outlier:1	150	
		CA-25	12	11	1	Immobility:1		
		CA-50	12	12	0			
Fig. 3	D	Cntr	6	6	0			
		CA	6	6	0			
	E	Cntr	6	6	0			
		CA	6	6	0			
	F	Cntr	6	6	0			
		CA	6	6	0			
Fig. 4	C	Cntr	6	5	1	Immobility:1		
		CA	6	5	1	Immobility:1		
	D	Cntr	6	5	1	Immobility:1		
		CA	6	5	1	Immobility:1		
	E	trkb-Cntr	6	5	1	Failed melting curve validation:1		
		trkb-CA	6	5	1	Statistical outlier:1	0.25	
		bdnf-Cntr	6	6	0			
		bdnf-CA	6	6	0			
		creb1-Cntr	6	6	0			
		creb1-CA	6	6	0			
	G	Cntr	3	3	0			
		CA	3	3	0			
	Fig.5	A	ist-Cntr	12	12	0		
			ist-CA	12	10	2	Failed melting curve validation:2	
avt-Cntr			12	12	0			
Avt-CA			12	11	1	Failed melting curve validation:1		
B		oxtra-Cntr	6	6	0			
		oxtra-CA	6	6	0			
		oxtrb-Cntr	6	6	0			
		oxtrb-CA	6	6	0			
		avplaa-Cntr	6	5	1	Failed melting curve validation:1		
		avplaa-CA	6	6	0			
		avplab-Cntr	6	5	1	Failed melting curve validation:1		
		avplab-CA	6	6	0			
C		Cntr	9	8	1	Immobility:1		

		CA	9	9	0		
		L368899-Cntr	9	9	0		
		L368899-CA	9	7	2	Immobility:1 Statistical outlier:1	3.69
Fig. 6	D	Cntr	8	8	0		
		CA	8	8	0		
	E	Cntr	8	8	0		
		CA	8	8	0		
	F	Cntr	8	8	0		
		CA	8	8	0		
	G	Cntr	8	8	0		
		CA	8	8	0		
	H	Cntr	8	8	0		
		CA	8	8	0		
	I	slc6a4a-Cntr	6	6	0		
		slc6a4a-CA	6	6	0		
		ht1aa-Cntr	6	6	0		
		ht1aa-CA	6	6	0		
		p11-Cntr	6	6	0		
		p11-CA	6	6	0		
		tph1a-Cntr	6	5	1	Failed melting curve validation:1	
	J	tph1a-CA	6	5	1	Failed melting curve validation:1	
		th1-Cntr	6	5	1	Failed melting curve validation:1	
		th1-CA	6	6	0		
		th2-Cntr	6	5	1	Failed melting curve validation:1	
		th2-CA	6	6	0		
		slc6a2-Cntr	6	5	1	Failed melting curve validation:1	
		slc6a2-CA	6	6	0		
	K	slc6a3-Cntr	6	6	0		
		slc6a3-CA	6	6	0		
		gr-Cntr	6	5	1	Failed melting curve validation:1	
		gr-CA	6	6	0		
		mr-Cntr	6	5	1	Failed melting curve validation:1	
		mr-CA	6	6	0		
crh-Cntr		6	5	1	Statistical outlier:1	0.39	
crh-CA		6	6	0			
npv-Cntr		6	6	0			
npv-CA		6	6	0			
cckb-Cntr		6	6	0			
cckb-CA		6	6	0			
gad1b-Cntr		6	6	0			
gad1b-CA		6	6	0			
Fig.7	A	Cntr	12	12	0		
		CA	12	12	0		
	B	Cntr	10	10	0		
		CA	10	9	1	Statistical outlier:1	10.57
	C	Cntr	6	6	0		
CA		6	5	1	Statistical outlier:1	0.25	
D	Saline	8	8	0			
		gabrala-Cntr	6	6	0		
		gabrala-CA	6	5	1	Statistical outlier:1	0.24

	FGF21	8	6	2	Immobility:2
E	Saline	10	10	0	
	FGF21	10	10	0	
F	Saline	10	9	1	Failed melting curve validation:1
	FGF21	10	10	0	
G	Cntr	10	10	0	
	Pon-Cntr	10	10	0	
	Pon-CA	10	10	0	
