

Supplementary Data

Endogenous Conversion of Omega-6 into Omega-3 Fatty Acids Improves Neuropathology in an Animal Model of Alzheimer's Disease

Meryem Lebbadi^{a,b}, Carl Julien^{a,b}, Alix Phivilay^{a,b}, Cyntia Tremblay^{a,b}, Vincent Emond^{a,b},
Jing X. Kang^c and Frédéric Calon^{a,b,*}

^a*Faculty of Pharmacy, Laval University, Quebec, QC, Canada*

^b*Centre Hospitalier de l'Université Laval (CHUL) Research Center, Quebec, QC, Canada*

^c*Department of Medicine, Massachusetts General Hospital and Harvard Medical School, Boston, MA, USA*

Handling Associate Editor: Othman Ghribi

Accepted 2 August 2011

SUPPLEMENTARY DATA

*Correspondence to: Dr. Frédéric Calon, Centre Hospitalier de l'Université Laval (CHUL) Research Center, Room TR-72, 2705 Laurier Blvd, Quebec, QC, Canada. G1V 4G2; Tel.: +418 654 2296 or 418 656 4141 x48697; Fax: +(418) 654 2761; E-mail: frederic.calon@crchul.ulaval.ca.

Supplementary Table 1

The expression of *fat-1* gene increases the amount of DHA in aged 3 × Tg-AD mice. Effect of age and the expression of *fat-1* gene on the fatty acid profile in the frontal cortex of 3 × Tg-AD mice. Statistical analyses were performed using ANOVA test followed by post-hoc Tukey-Kramer

	12 months of age		20 months of age		
	Fat-1 (wt) 3 × Tg-AD(he)	Fat-1 (he) 3 × Tg-AD(he)	Fat-1 (wt) 3 × Tg-AD(he)	Fat-1 (he) 3 × Tg-AD(he)	
Fatty acid (%)	<i>n</i> = 18	<i>n</i> = 21	<i>n</i> = 25	<i>n</i> = 29	
C16:0	21.90 ± 0.14	22.15 ± 0.18	21.36 ± 0.18	21.48 ± 0.11	††
C18:0	22.39 ± 0.11	22.56 ± 0.08	22.19 ± 0.10	22.24 ± 0.11	
C20:0	0.16 ± 0.04	0.11 ± 0.03	0.23 ± 0.03	0.17 ± 0.03	
C22:0	0.27 ± 0.03	0.22 ± 0.03	0.26 ± 0.03	0.22 ± 0.03	
Total SFA	45.31 ± 0.18	45.56 ± 0.16	44.65 ± 0.18	44.71 ± 0.14	††
C18:1n-9	14.69 ± 0.08	14.39 ± 0.10	14.97 ± 0.12	14.89 ± 0.08	†††
Total MUFA	21.98 ± 0.17	21.41 ± 0.15	22.44 ± 0.24	22.43 ± 0.15	†††
C18:2n-6 LA	0.73 ± 0.05	0.88 ± 0.04	0.94 ± 0.06	0.93 ± 0.04	†
C20:4n-6ARA	11.50 ± 0.08	11.11 ± 0.10	11.33 ± 0.06	11.02 ± 0.07	**
C22:4n-6 DTA	3.49 ± 0.06	3.20 ± 0.06	3.44 ± 0.05	3.19 ± 0.03	***
C22:5n-6DPA	0.43 ± 0.08	0.18 ± 0.05	0.60 ± 0.09	0.22 ± 0.04	***
Total n-6 PUFA	16.48 ± 0.21	15.75 ± 0.18	16.68 ± 0.15	15.80 ± 0.13	***
C18:3n-3 LNA	0.01 ± 0.01	0.01 ± 0.01	0.00 ± 0.00	0.00 ± 0.00	
C20:5 n-3 EPA	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	
C22:6n-3 DHA	16.16 ± 0.18	17.06 ± 0.20	16.05 ± 0.18	16.92 ± 0.11	***
Total n-3 PUFA	16.22 ± 0.18	17.28 ± 0.22	16.22 ± 0.18	17.06 ± 0.12	***
n-3 : n-6 ratio	0.98 ± 0.02	1.10 ± 0.02	0.97 ± 0.01	1.08 ± 0.01	***
Total PUFA	32.70 ± 0.16	33.03 ± 0.17	32.90 ± 0.15	32.86 ± 0.18	

Abbreviations: ARA, arachidonic acid; DHA, docosahexaenoic acid; DPA, docosapentaenoic acid; DTA, docosate-traenoic acid; EPA, eicosapentaenoic acid; he, heterozygous; LA, linoleic acid; LNA, linolenic acid; MUFA, monounsaturated fatty acids; PUFA, polyunsaturated fatty acids; SFA, saturated fatty acids; wt, wild type; Values are expressed as mean ± S.E.M.; *, **, ***, $P < 0.05$, $P < 0.01$, $P < 0.001$, versus Fat-1(-/-) 3 × Tg-AD(+/-) (same age of death); †, ††, †††, $P < 0.05$, $P < 0.01$, $P < 0.001$, versus 12 months (same genotype).