

SUPPLEMENTARY FILE

Oxylipin Biomarkers of Auto-Oxidation Are Associated with Antioxidant Micronutrients and Multiple Sclerosis Disability

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Table S1. Associations of oxidized lipid products with low-density lipoprotein (LDL) particle subsets. The regression slope (β), generalized eta-squared effect size (η^2), and p -value are shown.

	LDLP Total	L-LDLP	M-LDLP	S-LDLP	ApoB
9-HODE	0.038 0.084 (0.025)	-0.014 0.002 (0.74)	-0.022 0.002 (0.77)	0.073 0.119 (0.007)	0.023 0.032 (0.12)
13-HODE	0.042 0.072 (0.039)	-0.014 0.001 (0.78)	-0.006 <0.001 (0.94)	0.061 0.064 (0.052)	0.036 0.054 (0.047)
9-HODE/13-HODE	0.025 0.010 (0.45)	-0.012 <0.001 (0.88)	-0.057 0.004 (0.67)	0.086 0.05 (0.085)	-0.005 <0.001 (0.86)
9-HpODE	0.101 0.072 (0.038)	0.123 0.019 (0.29)	-0.070 0.003 (0.72)	0.079 0.018 (0.30)	0.080 0.056 (0.042)
13-HpODE	0.099 0.067 (0.046)	0.116 0.017 (0.33)	-0.083 0.004 (0.67)	0.086 0.021 (0.27)	0.079 0.053 (0.049)
13-HOTE	0.014 0.004 (0.65)	0.009 <0.001 (0.90)	-0.023 <0.001 (0.85)	0.010 <0.001 (0.84)	-0.007 <0.001 (0.80)
12-HEPE	0.118 0.204 (<0.001)	0.118 0.037 (0.14)	-0.057 0.004 (0.67)	0.140 0.12 (0.007)	0.069 0.08 (0.014)
5-HETE	0.139 0.124 (0.006)	0.077 0.007 (0.53)	-0.434 0.088 (0.034)	0.258 0.179 (<0.001)	0.103 0.099 (0.006)
12-HETE	-0.024 0.008 (0.49)	-0.098 0.026 (0.22)	0.029 <0.001 (0.83)	-<0.001 <0.001 (0.99)	-0.045 0.028 (0.15)
12-HpETE	0.116 0.209 (<0.001)	0.125 0.044 (0.11)	-0.105 0.012 (0.44)	0.141 0.128 (0.005)	0.095 0.152 (<0.001)

Table S2. Associations of oxidized lipid products with high-density lipoprotein (HDL) particle distributions. The regression slope (β), generalized eta-squared effect size (η^2), and p -value are shown.

	HDLP Total	L-HDLP	M-HDLP	S-HDLP	Apo-AI	Apo-AII
9-HODE	-0.014 0.037 (0.086)	-0.089 0.065 (0.023)	-0.018 0.011 (0.35)	0.001 <0.001 (0.91)	-0.013 0.035 (0.061)	-0.007 0.007 (0.42)
13-HODE	-0.016 0.034 (0.10)	-0.094 0.049 (0.049)	-0.008 0.001 (0.75)	-0.005 0.002 (0.72)	-0.011 0.018 (0.18)	-0.004 0.001 (0.74)
9-HODE/13-HODE	-0.011 0.006 (0.49)	-0.090 0.018 (0.23)	-0.047 0.02 (0.20)	0.016 0.008 (0.44)	-0.020 0.024 (0.12)	-0.017 0.011 (0.29)
9-HpODE	-0.022 0.014 (0.30)	-0.046 0.002 (0.66)	-0.041 0.008 (0.43)	-0.011 0.002 (0.70)	-0.011 0.004 (0.54)	-0.018 0.006 (0.43)
13-HpODE	-0.021 0.012 (0.33)	-0.086 0.008 (0.42)	-0.027 0.003 (0.60)	-0.006 <0.001 (0.83)	-0.012 0.005 (0.50)	-0.015 0.004 (0.51)
13-HOTE	-0.003 <0.001 (0.82)	-0.019 <0.001 (0.79)	-0.031 0.01 (0.37)	0.012 0.005 (0.53)	-0.003 <0.001 (0.81)	-0.004 <0.010 (0.80)
12-HEPE	0.007 0.003 (0.64)	-0.018 <0.001 (0.81)	-0.164 0.002 (0.66)	0.027 0.022 (0.19)	0.004 <0.001 (0.76)	-0.010 0.003 (0.56)
5-HETE	-0.018 0.008 (0.44)	-0.131 0.016 (0.26)	-0.183 0.001 (0.75)	0.003 <0.001 (0.92)	-0.008 0.002 (0.64)	-0.005 <0.001 (0.84)
12-HETE	0.017 0.018 (0.24)	0.103 0.028 (0.14)	0.062 0.043 (0.065)	0.013 0.006 (0.49)	0.005 0.002 (0.68)	0.011 0.004 (0.52)
12-HpETE	-0.003 0.001 (0.84)	-0.067 0.01 (0.38)	-0.003 <0.001 (0.94)	0.014 0.006 (0.51)	-0.004 0.001 (0.74)	0.004 <0.001 (0.98)

FIGURE LEGENDS

Figure S1. Figures S1A and S1B show the associations of the cholesterol autoxidation product 7-ketocholesterol for the lowest, middle, and highest tertiles of 9-HODE and 13-HODE, respectively, in HC (salmon bars), RRMS (green bars), and PMS (blue bars). Figures S1C and S1D show the associations of the mitophagy biomarker LC3A (in ng/ml) for the lowest, middle, and highest tertiles of 9-HODE and 13-HODE, respectively, in HC (salmon bars), RRMS (green bars), and PMS (blue bars). The bars are mean values, and the error bars are standard errors.

FIGURE S1

