

Supplementary Data

Omega-3 Fatty Acids Enhance Phagocytosis of Alzheimer's Disease-Related Amyloid- β_{42} by Human Microglia and Decrease Inflammatory Markers

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Supplementary Table 1

Differential expression of M1 and M2 polarization markers in human CHME3 microglia. The percentages of immunoreactive microglia in the phagocytic and non-phagocytic populations in each treatment were compared with Wilcoxon matched-pairs test. Significant differences are indicated by *p*-values. Bold numbers indicate the group (phagocytic or non-phagocytic) that has the largest percentage of immunoreactive microglia. n.s. = non-significant

DHA (μ M)	M1	<i>p</i> -value	Median (non-phagocytic) (%)	Median (phagocytic) (%)	M2	<i>p</i> -value	Median (non-phagocytic) (%)	Median (phagocytic) (%)
0		0.013	35.5	10.2		0.003	10.0	24.1
0.05		0.013	38.3	8.5		0.003	9.8	28.3
0.1	2 h - CD40	0.009	34.8	10.5	2 h - CD163	0.002	8.7	23.5
0.5		0.013	32.5	9.3		0.006	10.4	24.0
1		0.005	38.2	10.0		0.003	12.9	23.2
0		0.022	14.3	2.9		0.022	9.4	12.8
0.05		0.059	15.9	2.5		0.037	7.9	18.7
0.1	2 h - CD86	n.s.	14.2	2.5	2 h - CD206	n.s.	6.6	11.4
0.5		n.s.	15.2	2.9		n.s.	5.5	14.0
1		n.s.	13.4	2.5		n.s.	4.4	13.0
0		0.005	42.0	5.7		0.003	4.5	19.5
0.05		0.005	40.2	6.1		0.003	4.5	18.5
0.1	6 h - CD40	0.005	36.8	4.9	6 h - CD163	0.003	5.1	21.8
0.5		0.005	36.3	6.7		0.003	4.9	24.5
1		0.008	36.9	6.0		0.003	4.8	20.6
0		0.005	14.7	5.4		0.003	9.1	27.9
0.05		0.009	12.0	4.4		0.008	6.9	25.1
0.1	6 h - CD86	0.021	13.3	3.9	6 h - CD206	0.003	8.5	26.8
0.5		0.021	12.1	4.7		0.003	6.1	27.6
1		0.008	9.8	4.3		0.003	8.4	22.5
0		0.005	40.5	10.2		0.005	9.1	14.7
0.05		0.093	37.0	10.0		0.005	7.4	13.9
0.1	24 h - CD40	0.005	35.2	10.8	24 h - CD163	0.005	9.2	14.7
0.5		0.005	35.4	9.2		0.005	8.2	14.0
1		0.008	35.1	12.3		0.005	7.1	12.4
0		n.s.	7.9	7.4		n.s.	7.2	14.4
0.05		0.037	6.9	5.3		0.008	4.3	9.2
0.1	24 h - CD86	0.005	9.4	5.5	24 h - CD206	0.008	4.2	11.3
0.5		0.013	6.9	6.2		0.008	5.2	11.3
1		0.063	7.3	5.2		0.008	5.7	12.3
EPA (μ M)	M1	<i>p</i> -value	Median (non-phagocytic) (%)	Median (phagocytic) (%)	M2	<i>p</i> -value	Median (non-phagocytic) (%)	Median (phagocytic) (%)
0		0.013	27.0	11.0		0.005	8.8	27.2
0.005		0.013	20.9	9.3		0.005	5.8	24.2
0.01	2 h - CD40	0.009	27.3	6.1	2 h - CD163	0.005	9.3	24.9
0.5		0.013	18.7	7.0		0.005	7.0	23.9
1		0.005	21.5	8.2		0.005	6.8	23.2
0		0.022	10.8	3.9		n.s.	8.3	8.3
0.005		n.s.	8.5	3.8		n.s.	8.9	8.9
0.01	2 h - CD86	0.037	9.6	4.1	2 h - CD206	n.s.	8.7	9.9
0.5		0.013	9.9	3.3		n.s.	8.2	10.9
1		n.s.	7.6	4.6		n.s.	8.1	9.5
0		0.005	37.0	5.8		0.005	5.7	20.8
0.005		0.005	34.6	5.3		0.005	5.3	25.2
0.01	6 h - CD40	0.005	32.4	5.7	6 h - CD163	0.005	5.4	23.2
0.5		0.005	32.6	5.0		0.005	4.9	25.3
1		0.008	34.1	7.5		0.005	4.9	25.2
0		0.005	11.7	6.9		0.005	6.7	34.9
0.005		0.009	12.9	5.3		0.005	6.1	27.3
0.01	6 h - CD86	0.021	11.1	5.3	6 h - CD206	0.005	5.9	28.3
0.5		0.021	13.4	6.2		0.005	6.0	26.9
1		0.008	9.3	5.2		0.005	6.5	30.2
0		0.005	44.5	12.8		0.005	6.2	12.6
0.005		n.s.	30.2	12.4		0.005	4.1	9.4

Table 1
(Continued)

EPA (μ M)	M1	<i>p</i> -value	Median (non-phagocytic) (%)	Median (phagocytic) (%)	M2	<i>p</i> -value	Median (non-phagocytic) (%)	Median (phagocytic) (%)
0.01	24 h - CD40	0.005	25.5	11.1	24 h - CD163	0.005	5.6	11.6
0.5		0.005	26.6	12.4		0.005	4.9	10.7
1		0.008	37.2	12.4		0.005	4.5	10.3
0		0.009	11.4	8.9		0.005	5.8	12.0
0.005		0.037	11.5	9.5		0.005	5.8	12.8
0.01	24 h - CD86	0.005	11.9	7.2	24 h - CD206	0.005	5.9	12.8
0.5		0.013	10.7	7.7		0.005	9.2	17.5
1		n.s.	10.8	8.7		0.005	13.6	21.1

Supplementary Table 2

Correlation between the levels of microglial secretory products and the percentage of microglia showing phagocytosis of A β ₄₂. The mean-normalized data from the variables in the analysis were correlated using the Spearman Rank-Order correlation test. Significant correlations ($p < 0.05$) are indicated by asterisks (*)

	BDNF	IL-6	TNF- α	IL-10
BDNF				
IL-6	0.35*			
TNF- α	0.16	0.22*		
IL-10	0.08	0.10	0.26*	
Phagocytosis	0.33*	0.12	-0.10	-0.15