

Supplementary Material

Amyloid- β Causes Mitochondrial Dysfunction via a Ca^{2+} -Driven Upregulation of Oxidative Phosphorylation and Superoxide Production in Cerebrovascular Endothelial Cells

Supplementary Table 1. Dose-dependent Response to Amyloid- β

Assessment	Subject	Correlation Coefficient (R^2)	Linear Trend (p)	Data Depiction (Figure, Panel)
Basal Respiration	bEnd.3	0.4554	< 0.0001	Fig. 2B
Maximum Respiration	bEnd.3	0.5784	< 0.0001	Fig. 2C
Spare Capacity	bEnd.3	0.4988	< 0.0001	Fig. 2D
Proton Leak	bEnd.3	0.2811	0.0009	Fig. 2E
Basal Respiration	Primary Endothelial	0.1843	0.0853	Fig. 2F
Maximum Respiration	Primary Endothelial	0.3054	0.0193	Fig. 2G
Spare Capacity	Primary Endothelial	0.1327	0.1419	Fig. 2H
Proton Leak	Primary Endothelial	0.3646	0.0103	Fig. 2I
Mitochondrial Calcium	bEnd.3	0.241	0.004	Fig. 3A
Cytosolic Calcium	bEnd.3	0.223	0.0027	Fig. 3B
ATP Production	bEnd.3	0.4083	< 0.0001	Fig. 4A
ATP Production	Primary Endothelial	0.2028	0.0104	Fig. 4B
ATP Content, Intracellular	bEnd.3	0.6478	< 0.0001	Fig. 4C
ATP Content, Extracellular	bEnd.3	0.5056	0.0011	Fig. 4D
Mitochondrial Superoxide	bEnd.3	0.1897	0.0126	Fig. 5D
Mitochondrial Superoxide	Isolated Mitochondria	0.9637	< 0.0001	Fig. 5E

Analysis of linear trend (one-way ANOVA) was performed on experimental data to determine if the measurements are dose-dependent. Assessment, measured parameter; Subject, entity receiving treatment; Correlation Coefficient, R^2 value estimates the strength that the linear model describes the data; Linear Trend, p-value indicates whether there is a significant relationship between the model and the data; Data Depiction, figure number and panel to where the specified data is located. bEnd.3 (cell line); Primary Endothelial (primary cerebrovascular endothelial cells), isolated mitochondria (mitochondria isolated from primary cerebrovascular endothelial cells).

Supplementary Table 2. ANOVA Summary

Assay	F	p	R²	F(DFn, DFd)	Data Depiction (Figure, Panel)
Oxygen Consumption	17.96	< 0.0001	n.a.	57	Fig. 2A
Basal Respiration	59.70	< 0.0001	0.8028	3, 44	Fig. 2B
Maximum Respiration	91.92	< 0.0001	0.8733	3, 44	Fig. 2C
Spare Capacity	46.50	< 0.0001	0.7602	3, 44	Fig. 2D
Proton Leak	56.33	< 0.0001	0.8086	3, 44	Fig. 2E
Basal Respiration	12.08	< 0.0001	0.6016	3, 24	Fig. 2F
Maximum Respiration	24.03	< 0.0001	0.7503	3, 24	Fig. 2G
Spare Capacity	9.77	0.0002	0.55	3, 24	Fig. 2H
Proton Leak	20.88	< 0.0001	0.723	3, 24	Fig. 2I
Mitochondrial Calcium	12.58	< 0.0001	0.4395	3, 40	Fig. 3A
Cytosolic Calcium	35.19	< 0.0001	0.7457	3, 36	Fig. 3B
ATP Production	46.92	< 0.0001	0.7618	3, 44	Fig. 4A
ATP Production	5.71	0.0034	0.3715	3, 29	Fig. 4B
ATP Content, Intracellular	60.05	< 0.0001	0.8037	3, 44	Fig. 4C
ATP Content, Extracellular	9.13	0.0008	0.6171	3, 29	Fig. 4D
Mitochondrial Superoxide	23.68	< 0.0001	0.6764	3, 44	Fig. 5D
Mitochondrial Superoxide, Isolated Mitochondria	381.20	< 0.0001	0.9871	3, 17	Fig. 5E
Mitochondrial Calcium	15.46	< 0.0001	0.5189	3, 34	Fig. 6A
Basal Respiration	51.69	< 0.0001	0.866	4, 20	Fig. 6B
Maximum Respiration	56.03	< 0.0001	0.8751	3, 43	Fig. 6C
Spare Capacity	216.20	< 0.0001	0.9658	3, 24	Fig. 6D
Proton Leak	61.23	< 0.0001	0.8844	3, 24	Fig. 6E
ATP Production	126.90	< 0.0001	0.9407	3, 24	Fig. 6F
Mitochondrial Superoxide	90.11	< 0.0001	0.8739	3, 39	Fig. 6G

Analysis of means by ANOVA. Assay, measured parameter; F, group effect; p, probability; R², coefficient of determination; F (DFn, DFd), degrees of freedom for numerator and denominator; Data Depiction, figure number and panel to where the specified data is located.