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Supplementary Data

Several Direct and Calculated Biomarkers from the Amyloid-β Pool in Blood are Associated with an Increased Likelihood of Suffering from Mild Cognitive Impairment

Virginia Pérez-Grijalba[a], Pedro Pesini[a,b,*], Inmaculada Monleón[b], Mercè Boada[c,d], Lluís Tárraga[c], Agustín Ruiz-Laza[c], Pablo Martínez-Lage[c,1], Itziar San-José[b] and Manuel Sarasa[a,b]
[a]*Araclon Biotech Ltd., Proteomic Laboratory, CIBIR Logroño, Spain*
[b]*Araclon Biotech Ltd., I + D Laboratory, Zaragoza, Spain*
[c]*Fundació ACE, Institut Català de Neurciències Aplicades, Barcelona, Spain*
[d]*Hospital Universitari Vall d'Hebron-Institut de Recerca, Universitat Autònoma de Barcelona (VHIR-UAB), Barcelona, Spain*

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[1]Present address: Fundación CITA Alzheimer, San Sebastian, Spain.

*Correspondence to: Pedro Pesini, Araclon Biotech, Frantz Schubert 2, (Hospital Montecanal), 50012 Zaragoza, Spain. Tel.: +34 876241666; Fax: +34 976020011; E-mail: pedropesini@araclon.com.

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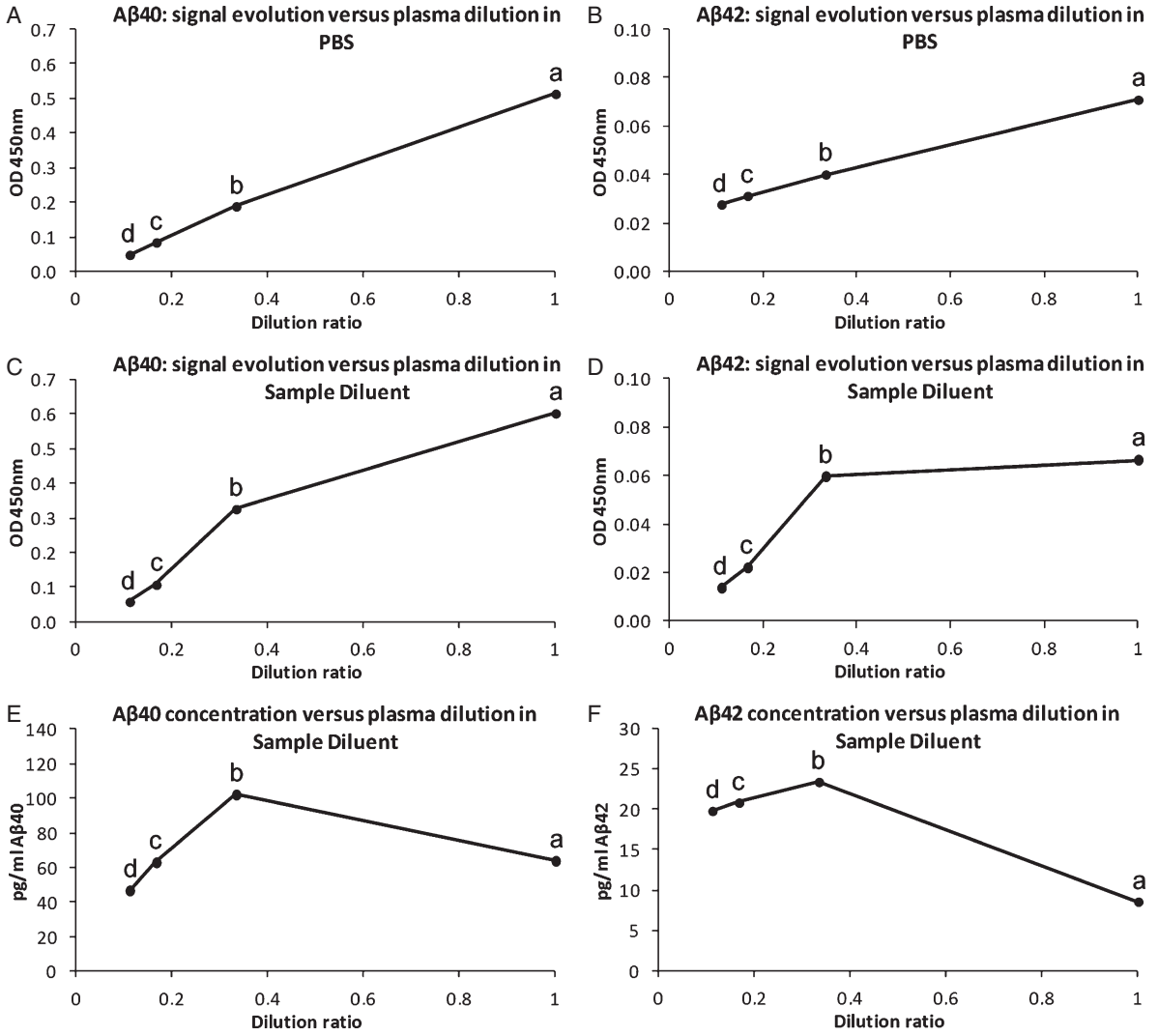
Supplementary Table 1
Correlation between amyloid-β markers and blood analytes

Spearman's coefficient	DA 40	RP 40	CP 40	DA 42	RP 42	CP 42
RP 40	**−0.311***					
DA 40	0.237	−0.131				
DA 42	**0.361***	**−0.319***	**0.456****			
RP 42	−0.120	**0.439****	**−0.315***	−0.135		
CP 42	0.153	0.189	0.121	0.251	0.117	
Folic acid (ng/ml)	−0.251	0.194	−0.158	0.081	0.036	−0.068
Apolipoprotein E (mg/L)	0.024	−0.126	−0.026	0.213	−0.273	−0.004
Leukocytes (10^3/mcL)	0.007	0.054	0.093	−0.079	−0.180	0.102
Erythrocytes (10^6/mcL)	**−0.345***	0.008	0.101	**−0.346***	−0.196	**−0.300***
Hemoglobin (g/dl)	**−0.330***	−0.117	0.141	−0.158	−0.226	−0.267
Hematocrit (%)	**−0.351***	−0.101	0.094	−0.212	−0.235	−0.257
Mean corpuscular volume (fl)	−0.040	−0.119	−0.052	0.133	0.019	0.160
Mean corpuscular hemoglobin (pg)	0.030	−0.110	−0.034	0.237	−0.027	0.100
Mean corpuscular hemoglobin concentration (g/dl)	0.136	−0.151	0.165	0.339*	−0.142	0.052
Red blood cell distribution width (%)	−0.140	**0.407****	**−0.316***	−0.214	**0.453****	0.281
Mean platelet volume (fl)	0.125	−0.208	0.110	0.244	−0.175	−0.047
Plateletcrit (%)	−0.026	0.042	−0.028	0.028	−0.008	0.002
Platelets (10^3/mcL)	−0.172	0.108	−0.001	−0.178	0.014	−0.161
Neutrophils (%)	−0.057	0.069	−0.093	−0.256	−0.166	−0.149
Lymphocytes (%)	0.030	−0.098	0.116	0.271	0.191	0.141
Monocytes (%)	0.204	−0.185	0.055	**0.319****	−0.117	−0.107
Eosinophils (%)	0.167	0.065	0.140	0.056	0.078	0.140
Basophils (%)	−0.175	0.282	**−0.395****	−0.233	0.172	0.219
Neutrophils (10^3/mcL)	−0.034	0.034	−0.014	−0.161	−0.207	−0.015
Lymphocytes (10^3/mcL)	0.031	0.034	0.108	0.082	0.056	0.240
Monocytes (10^3/mcL)	0.200	−0.083	0.023	0.094	−0.189	−0.010
Eosinophils (10^3/mcL)	0.130	−0.009	0.174	0.066	−0.246	−0.038
Basophils (10^3/mcL)	−0.103	0.289	**−0.310***	−0.256	0.113	0.235
Basal glucose (mg/dl)	−0.183	−0.069	−0.064	−0.074	0.116	−0.091
Urea (mg/dl)	0.269	−0.232	**0.294***	0.275	−0.292*	−0.263
Creatinine (mg/dl)	**0.615****	−0.125	0.100	0.250	−0.139	0.003
Uric acid (mg/dl)	0.122	−0.064	−0.041	−0.034	0.040	−0.079
Total protein (g/dl)	−0.060	0.014	**−0.295***	−0.175	0.264	0.106
Albumin (g/dl)	−0.146	−0.214	0.094	0.010	−0.269	**−0.407****
Cholesterol (mg/dl)	−0.032	−0.236	−0.101	0.136	**−0.343***	−0.254
HDL-Cholesterol (mg/dl)	−0.195	0.050	−0.143	0.111	−0.145	−0.085
LDL-Cholesterol (mg/dl)	−0.005	−0.144	−0.189	0.045	−0.231	−0.262
Ferritin (ng/ml)	−0.017	0.076	−0.045	0.045	0.012	−0.129
Homocysteine (mcmol/L)	**0.344***	0.046	−0.099	0.104	0.187	0.094
Triglycerides (mg/dl)	0.136	**−0.291***	0.173	0.039	−0.229	−0.023
Total serum Ig	0.210	−0.112	0.283	**0.343***	−0.218	0.044
Vitamin B12 (pg/ml)	0.028	−0.060	−0.140	0.076	−0.210	0.061
C reactive protein (mg/L)	−0.281	−0.013	0.146	0.114	−0.117	−0.152
Serum immunoglobulin M (mg/dL)	−0.278	0.042	0.188	0.108	0.050	0.098
Serum immunoglobulin G (mg/dL)	0.084	−0.009	0.147	0.244	−0.237	−0.032
Serum immunoglobulin A (mg/dL)	**0.336***	−0.269	0.232	**0.384****	−0.057	0.041
Basal insulin (mcU/mL)	−0.130	−0.063	0.117	−0.022	−0.054	0.081
Free T4 (free thyroxine) levels (ng/dl)	0.289	−0.297	0.015	0.173	−0.078	0.181
Human TSH thyroid stimulating hormone (μiu/ml)	−0.119	**0.459***	−0.359	0.010	**0.409***	−0.149

*$p < 0.05$, **$p < 0.01$.



Supplementary Figure 1. Dilutional linearity assessment in plasma samples ($n = 7$). a) undiluted plasma; b) 1/3 dilution; c) 1/6 dilution; d) 1/9 dilution. The figure illustrates the signal (A-D) of Aβ concentration (E-F) evolution obtained after serial plasma dilution either in saline buffer (PBS; A-B) or in our formulated Sample Diluent (C-D), both for $Aβ_{40}$ (C) and $Aβ_{42}$ (D). Serial dilution of plasma in PBS provided a linear association between signal and dilution (A-B). However, when plasma samples were diluted in Sample Diluent (C-D), a lack of dilutional linearity is exhibited with a smaller or almost no signal reduction from the undiluted (a) to the 1/3 dilution (b), followed by a marked signal reduction for the consecutive dilutions. This signal evolution pattern led to a maximum Aβ recovery from the plasma matrix by a 3-fold dilution of plasma in Sample Diluent (E-F).