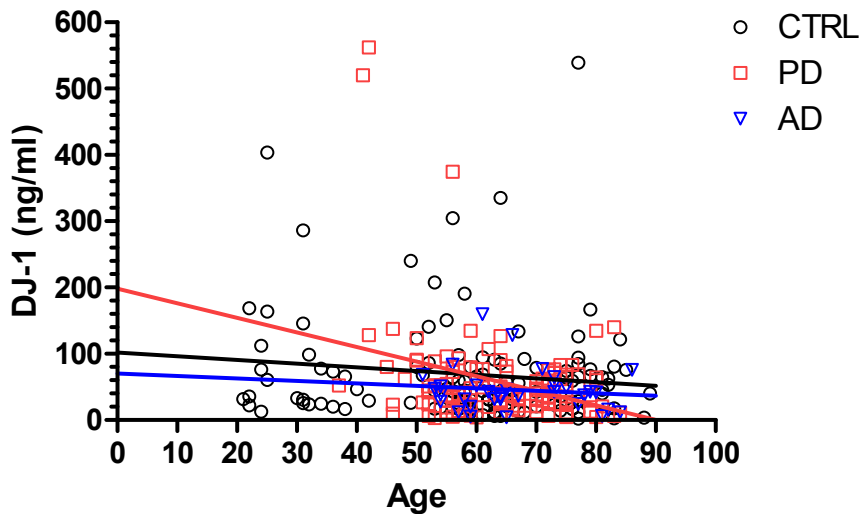
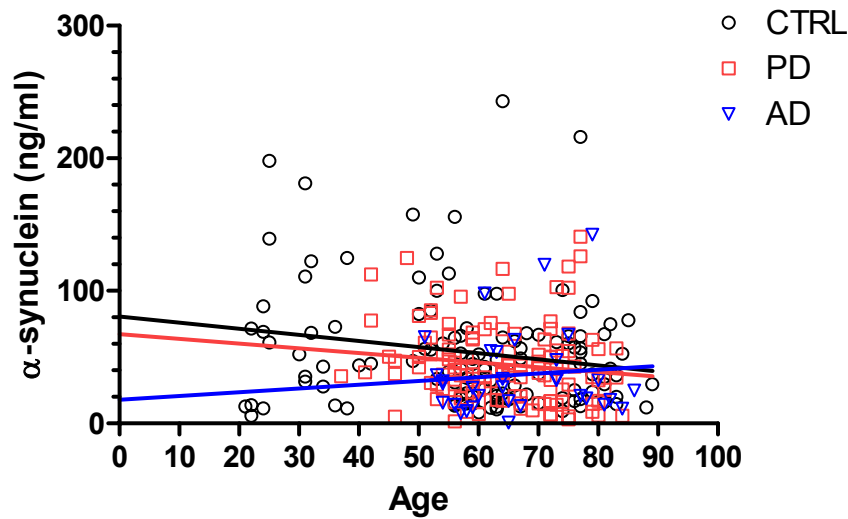


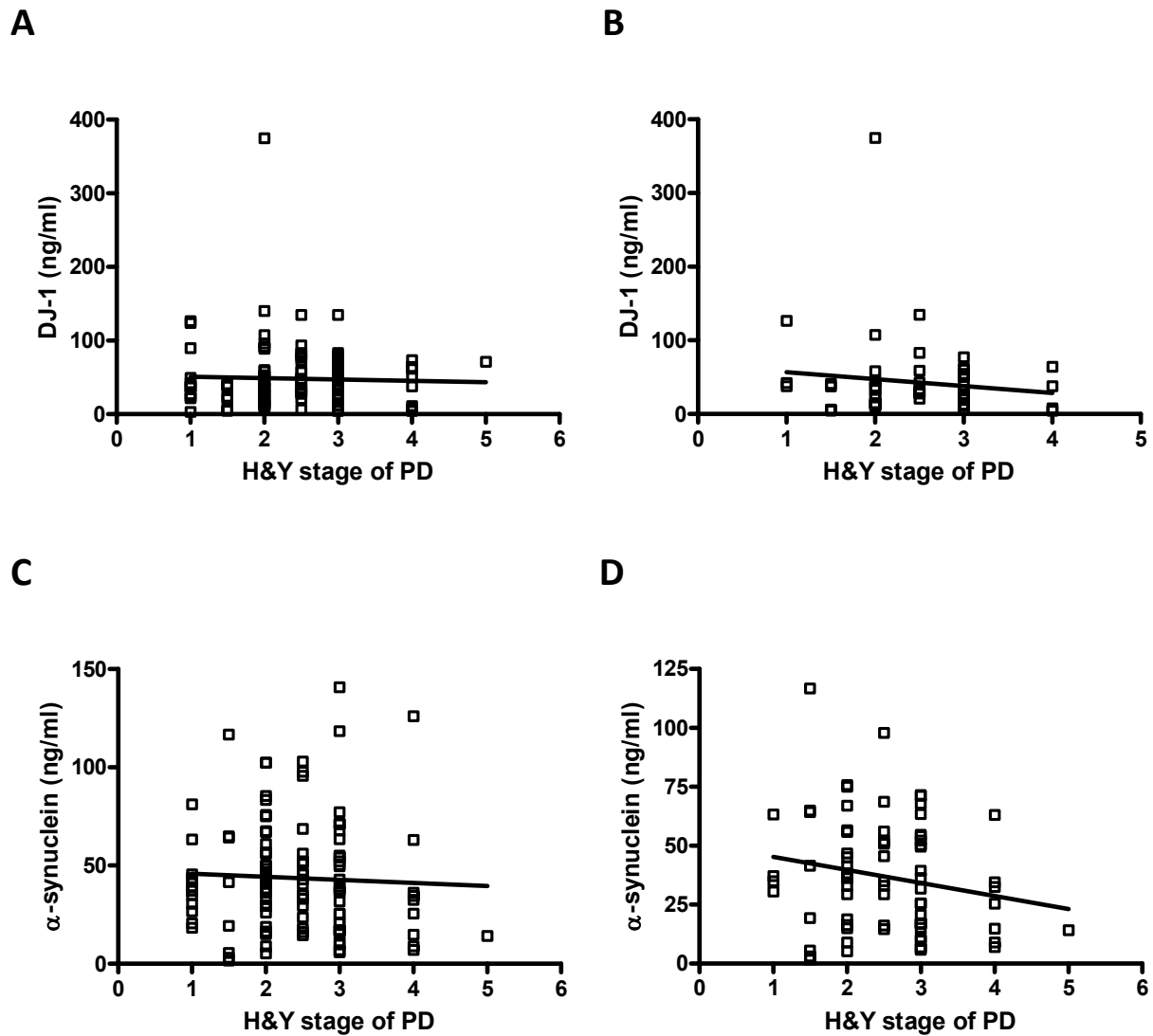
Suppl. Fig. 1. Quantitative contribution of blood components to α -synuclein levels.

(A) Individual blood components were separated and purified from whole blood from seven healthy subjects, with the cell numbers counted and the α -synuclein (α -syn) levels determined by Luminex assays in the lysed components. The percentage contribution of each component in 1 mL of whole blood was calculated: red blood cell (RBCs) = 98.8%, platelets = 1.0%, white blood cells (WBCs) = 0.0%, platelet-free plasma = 0.2%. **(B)** Separated RBCs from five healthy individuals were lysed and spiked in platelet-free plasma in a series of dilutions respectively, and the α -syn levels (shown as mean \pm S.D. of 5 subjects) were measured by Luminex, while the hemoglobin levels (shown as mean \pm S.D. of 5 subjects), as an index of hemolysis/RBC contamination, were measured using an ELISA kit. A positive correlation between hemoglobin and α -syn levels was observed ($R^2=0.999$, $P<0.0001$). Hemoglobin at 63,900 ng/mL correlated with an α -syn level that would increase plasma α -syn levels by 10%. **(C)** Similarly, separated platelets were lysed and spiked in platelet-free plasma and the α -syn levels were measured by Luminex, while the soluble P-selectin (sP-Selectin) levels, as an index of residual platelets, were measured using an ELISA kit. A positive correlation was also found between sP-Selectin and α -syn levels ($R^2=0.985$, $P<0.0001$). sP-Selectin at 44.8 ng/mL represented an α -syn level that would increase plasma α -syn levels by 10%.

A**B**

Suppl. Fig 2. Age dependence of DJ-1 or α -synuclein levels in plasma.

Plasma DJ-1 (**A**) and α -synuclein (**B**) levels were measured in individual control (CTRL), Parkinson disease (PD), and Alzheimer disease (AD) samples by Luminex. The correlation coefficient (R) and P values of linear regression are the following: DJ-1 in CTRL, $R^2=0.015$ ($P=0.176$); DJ-1 in PD, $R^2=0.093$ ($P=0.0005$); DJ-1 in AD, $R^2=0.013$ ($P=0.525$). α -synuclein in CTRL, $R^2=0.0334$ ($P=0.043$); α -synuclein in PD, $R^2=0.016$ ($P=0.158$); α -synuclein in AD, $R^2=0.008$ ($P=0.618$).



Suppl. Fig 3. Relationship between DJ-1 or α -synuclein with Parkinson disease severity.

Plasma DJ-1 (A, B) or α -synuclein (C, D) levels in Parkinson disease cases at different H&Y stages were measured by Luminex. Data shown are before (A, C) or after (B, D) elimination of cases with high hemoglobin and soluble P-selectin (sP-selectin) levels. The correlation coefficient (R) and *P* values of linear regression are the following: DJ-1, $R^2=0.001$ ($P=0.705$) and $R^2=0.017$ ($P=0.357$) for before and after eliminating cases with high HGB and sP-selectin, respectively; α -synuclein, $R^2=0.002$ ($P=0.631$) and $R^2=0.036$ ($P=0.103$) for before and after eliminating cases with high HGB and sP-selectin, respectively.