

ADNI 1 Longitudinal dataset

The data set “ADNI 1 Longitudinal Study Dataset” includes CSF $A\beta_{1-42}$, t-tau and p-tau₁₈₁ concentration value results based on analyses done over a nearly 2 year period of time, from March 2009 through January 2011 by the ADNI Biomarker Core laboratory that is co-led by Leslie M Shaw and John Q Trojanowski. These are results for 142 ADNI 1 study subjects with 3 or more visits each, thus it is a longitudinal dataset. These results were produced using the analytically and clinically qualified for research use only AlzBio3 immunoassay reagents on a Luminex 100 platform. All ADNI 1 study subject CSF aliquots, from 3-5 longitudinal samples per study subject (total N=495) including the aliquot obtained at BASELINE, were run on the same 96 well plate to assure best achievable consistency of results within each study subject. Each sample was run in duplicate, according to the Biomarker Core laboratory SOP, and the average value is reported as the final result.

Five different lots of reagents and calibrators were utilized throughout this study. Passing-Bablok regression was used to analyze and transform results, using slope and intercept values, m and b, respectively, obtained by comparison of the new BASELINE concentration data (BASELINE09-11) with the corresponding BASELINE CSF concentration data obtained in 2007 for ADNI subjects (BASELINE07). Then, using the linear regression equation, $X = (Y - b)/m$ all results were transformed. In this equation X is the transformed result, Y is the measured result, b and m are the intercept and slopes, respectively, obtained from Passing-Bablok regression analyses as noted above. The transformed BASELINE(09-11) biomarker concentration data vs original BASELINE(07) biomarker concentrations data are summarized in the following regression plots. The 2007 BASELINE CSF biomarker data are the datasets uploaded in early 2008 on the ADNI website and are the data described in Shaw, et al (2009).

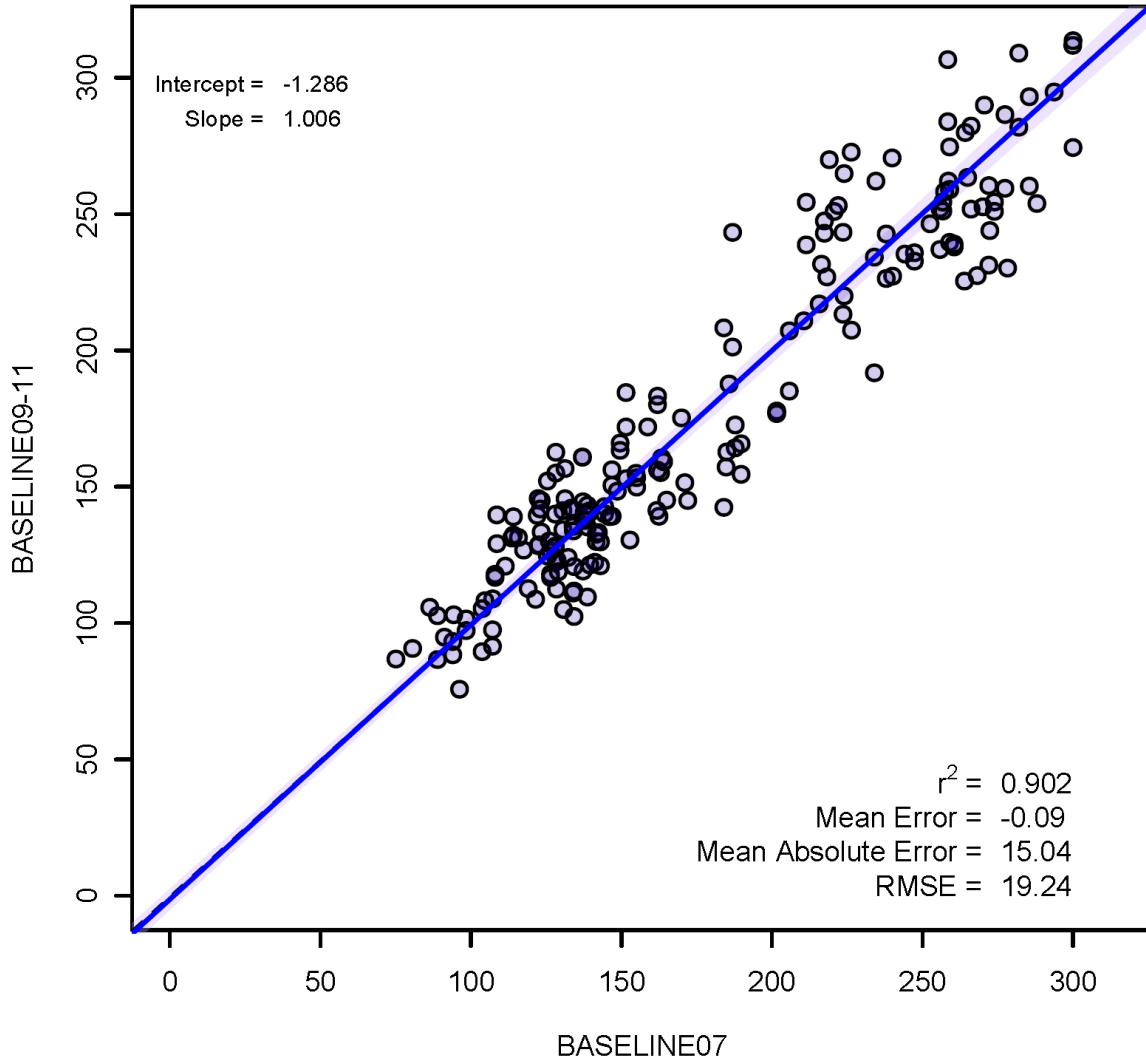
In the accompanying data set “ADNI 1 Longitudinal Study Dataset” there are values that have been removed, according to the ADNI Biomarker Core laboratory SOP and the manufacturers guidelines, for the following reasons: 13 missing $A\beta_{1-42}$ results due to %CV of paired results >25%; 10 missing t-tau results, 5 because of %CV >25% and 5 because of bead counts <50. There were 16 p-tau₁₈₁ results removed because they were outliers as defined by Cook’s Distance criterion (RD Cook, 1982).

REFERENCES

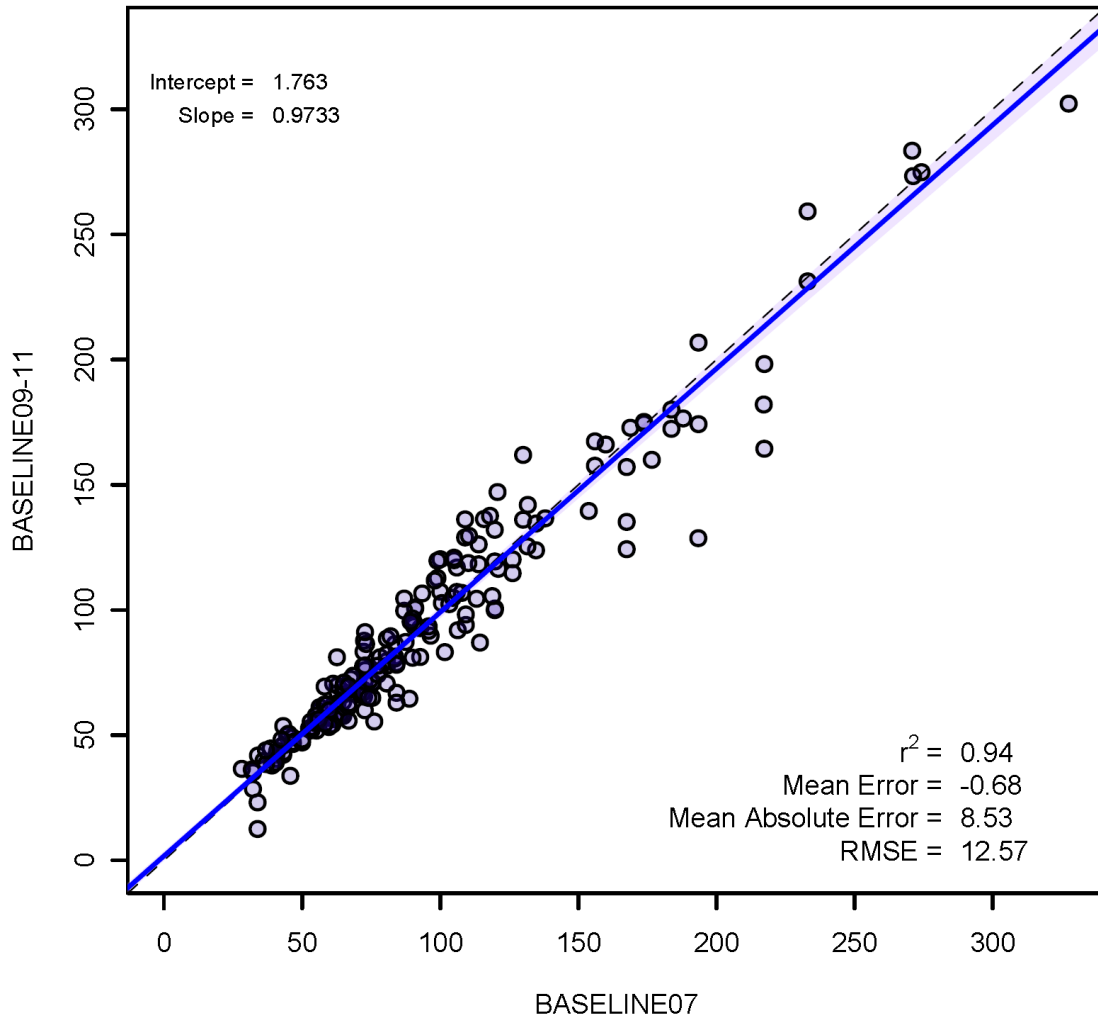
1. Shaw LM, Vanderstichele H, Knapik-Czajka M, Clark CM, Aisen PS, Petersen RC, Blennow K, Soares H, Simon A, Lewczuk P, Dean R, Siemers E, Potter W, Lee VMY, Trojanowski JQ: Cerebrospinal Fluid biomarker signature in Alzheimer’s Disease Neuroimaging Initiative subjects. *Annals of Neurology* 2009, 65:403-413.
2. Cook RD, Weisberg S: Residuals and influence in regression. New York: Chapman & Hall, 1982.

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Baseline CSF $A\beta_{1-42}$ measured in 2009-2011 vs CSF $A\beta_{1-42}$ measured in 2007



Baseline CSF t-tau measured in 2009-2011 vs CSF t-tau measured in 2007



**Baseline CSF p-tau₁₈₁ measured in 2009-2011 vs
CSF p-tau₁₈₁ measured in 2007**

