



Comparison of protein concentrations in serum versus plasma from Alzheimer' s patients

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ABSTRACT

Background: There is great interest in developing blood-based biomarkers for Alzheimer' s disease (AD); however, there is no consensus as to what blood fraction is most appropriate for analyzing particular markers. The current study provides empirical evidence regarding how blood-based proteins vary depending on whether they are assayed in serum or plasma. **Methods:** We analyzed concentrations of 100 proteins in matched samples of serum and plasma from 39 Caucasian AD participants from the Texas Alzheimer' s Research and Care Consortium by multiplex immunoassay. **Results:** Concentrations of 40 proteins were highly correlated ($r^2 \geq 0.75$) between plasma and serum while the remaining proteins were moderately to weakly correlated ($r^2 < 0.75$). **Discussion:** Whether plasma vs. serum is assayed can have a large impact on the observed concentration of some proteins, including several proteins that are of great interest to AD pathophysiology. The current findings may explain the significant discrepancies oftentimes reported in the AD biomarker field.

KEYWORDS

Alzheimer' s Disease; Serum Proteins; Plasma Proteins

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