**OBJECTIVE**

- Conduct time and temperature stability experiments on Nutritional Biomarkers (NBs) and inflammation markers extracted from self-constructed ViveBio Dry Plasma Separation (DPS) Manifold (Figure 1).
- Demonstrate transferability of DPS and Q-Plex methodology among labs.

**METHODS**

For stability testing, 3 hematocrits (20, 30 and 45%) of contrived blood samples were created by combining purchased red blood cells (RBC) and plasma. Volumes of 35 µL were loaded onto the DPS. The underlying samples of were created by combining purchased red blood cells (RBC) and plasma. Volumes of 35 µL were loaded onto the DPS. The underlying plasma were stored at 45°, 23°, 4°, -20° and -70°C. Samples were tested on days 0, 1, 3, 7, 14, 28, 84 and 168.

For Transferability, approximately 80 blood samples were obtained and spotted on the DPS manifolds. Paired plasma samples were also prepared for reference. Three independent laboratories then performed the NB analysis using the Q-plex multiplexed immunoassay. Add ref?

**RESULTS**

Overall the obtained values for AGP, CRP, Ferritin, RBP, and Thyroglobulin (Tg) followed the trend of diminishing values with increasing storage temperature and length of storage. For illustrative purposes, percentage retained from time 0 is shown for days 3, 14, 28 and 168 for AGP, RBP, and Tg.

**CONCLUSIONS**

We have demonstrated that NBs can be analyzed in low volume DPS generated using the self-constructed ViveBio plasma separator. The stability of the various NBs varied but followed the trend of greater stability at lower temperatures. In addition, DPS analyses with the Quansys Q-Plex assay yielded highly correlative test data across 7 biomarkers when screened by three labs. This highlights good inter-operability when testing DPS but also that one month of storage at -70°C had minimal affect. Low but consistent recovery results may indicate a need to revise estimates of blood volume in DPS pads. Use of DPS and the Quansys Q-Plex offer great promise for nutritional assessment.

**REFERENCES**