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Calypso® Succeeds in ABRF-MIRG Study

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(Santa Barbara, CA) Wyatt Technology is pleased to report the success of the Calypso® composition-gradient multi-angle light scattering (CG-MALS) system in a study conducting by the Molecular Interactions Research Group (MIRG) of the Association of Biomolecular Research Facilities (ABRF). The conclusions of the 2012 MIRG study were announced at the ABRF 2013 annual meeting in Palm Springs earlier this month.

In the study, a pair of unknown proteins, prepared and characterized by the ABRF, was sent out to multiple labs to determine binding affinity and stoichiometry. In a single afternoon consisting of 2 CG-MALS runs, the Wyatt Calypso system correctly determined that Protein Y (26.3 kDa) contains two binding sites for Protein X (11.9 kDa). The first X binds with K_D of 10 nM and the second X binds with 14 μM. This analysis agreed perfectly with extensive analytical ultracentrifugation (AUC) and isothermal titration calorimetry (ITC) measurements performed by ABRF prior to distributing the samples.

CG-MALS was the only solution-based technique utilized among the participating labs. Other participants used surface plasmon resonance (SPR) instruments which require immobilization of one of the binding partners. Interestingly, the affinities determined by SPR were significantly weaker than those found by any of the solution-based measurements (AUC, ITC, CG-MALS), possibly indicating that immobilization modifies this interaction.

For further details see these two documents:

http://www.abrf.org/ResearchGroups/MolecularInteractions/Studies/ABRF2013-MIRGsession1-Yamniuk.pdf

http://www.abrf.org/ResearchGroups/MolecularInteractions/Studies/ABRF2013-MIRGsession2-Yadav.pdf

Disclaimer: ABRF prepared and provided the protein samples to all members and vendors, but did not participate in Wyatt's study and does not endorse any specific manufacturer, instrument or strategy. Many factors will affect analytical results and the data obtained in Wyatt's R&D lab may exceed feasible expectations for an "average" resource or research facility under routine conditions.