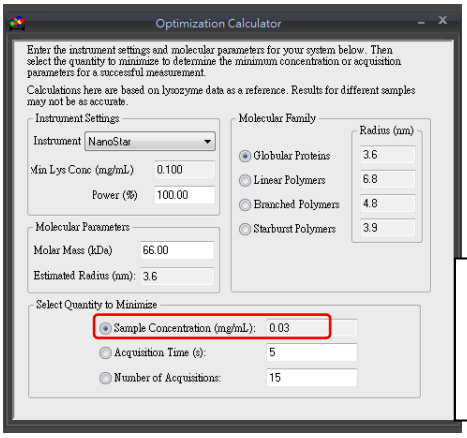
DLS/SLS Sample Submission (size distribution and molar mass) Guideline for DynaPro NanoStar

I. Sample Submission

1. Apply an account on the BCF reservation system using your official email address, which will be used to identify your affiliations. BCF will not accept service requests from public e-mail domains, such as gmail, outlook or yahoo, etc.
2. File sample submission form on-line under instrument “DynaPro NanoStar”.
3. After confirming the charges and experiment time through reservation system, samples and buffers may be submitted to Mr. Xin-Jie Huang (Tel: 27855696 x4024, e-mail: bcf@gate.sinica.edu.tw). If BCF does not receive your samples before the scheduled time listed in the service request application form, the facility will add an extra charge for the delay, unless early notification is sent by emails more than two days in advance.
4. BCF will not compensate for your sample loss or data loss under any circumstances (hardware or software failure, operator error, or others). All experimental results are for research only. Without written permission from Academia Sinica, the user shall not claim, announce, or mislead the public into interpreting that the results of this testing is in any way related to the commercial development of the user. In addition, the user shall not in any form (including but not restricted to commercial marketing, for example advertisements, either online or offline, product packaging, catalogs, investment information etc,) use the title, logo, name, trademark or symbols that are that of Academia Sinica or similar to that of the facility, that gives the false impression of a commercial collaboration.
5. Data analysis is the responsibility of users.
6. Please refer to http://bcf.assic.sinica.edu.tw/bcf/DynaProNanoStar.htm for more.

II. Sample preparation

1. Samples submitted to BCF are non-hazardous, non-toxic and nonpathogenic. No radioactive or microbial samples are allowed.
2. Prepare five times suggested minimum concentration of the sample by Optimizaton Calculators from DYNAMIC 7.10.0.23 software. See DynaPro NanoStar simplified protocol for more details.



For example, the minimum concentration of BSA is 0.15 mg/mL.
0.03*5=0.15

3. Provide at least **100 µl of your sample** and **15 mL** / per sample of buffer for measurement. Both need to pass through 0.22 µm filter by centrifugation or filter disk. If sample cannot be filtered, please try to centrifuge at 12,000g for 3 minutes and collect the supernatant.
4. Please offer the extinction coefficient of your sample for calculating the concentration after centrifugation.

Yu, Jin-Hsuan 2024/01/01

5. Please be reminded that the viscosity of your buffer is needed for size data analysis. Viscosity may be measured by using a viscometer or estimated by “Sednterp”.

III. Experimental setting

1. **DLS measurement**
   DLS Acq Time (s): 5
   DLS Number of Acq: 15
   DLS only: Yes
   Auto-attenuation: Yes
   Cuvette: disposable cuvette, Disp_162960
2. **DLS/SLS measurement**:
   DLS Acq Time (s): 5
   DLS Number of Acq: 15
   DLS only: No
   Auto-attenuation: Yes
   Cuvette: Quartz Cuvette, JC-744
3. **Thermal ramping experiment**
   DLS Acq Time (s): 5
   DLS Number of Acq: 15
   DLS only: No
   Auto-attenuation: Yes
   Cuvette: Quartz Cuvette, JC-744
   Thermal ramping range: 25℃~ 95℃
   Ramping rate: 0.25℃/min
4. Sample will be processed according to the sequence that is filled in the application form. For the molar mass experiment, we will measure the buffer offset before measuring your sample.
5. Before performing thermal ramping experiments, we will make DLS/SLS measurement to check if your sample is homogeneous. If your sample is not suitable for thermal ramping, we will only charge for the DLS/SLS measurements.

IV. Data Analysis

1. We will provide the raw data (Correlation function) and Regularization Results.
2. **For SLS data, due to anisotropic scattering of large particles, particles with hydrodynamic radii bigger than 50 nm cannot be measured.**
3. For thermal ramping data, raw data and preliminary analysis can be downloaded through the BCF reservation system.
4. Please note that data analysis is the responsibility of users. Users are welcome to consult BCF staff for assistance.

V. Acknowledgement

Please acknowledge us if research supported and/or data generated by this instrument results in publications. For example, “We acknowledge DynaPro NanoStar data collected by [operator] in the Biophysics Core Facility funded by Academia Sinica Core Facility and Innovative Instrument Project (AS-CFII-111-201).”

Yu, Jin-Hsuan 2024/01/01