TwoMP Mass Photometry Sample Submission Guideline

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 “TwoMP Mass Photometry”.
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.

II. Sample preparation

1. Samples submitted to BCF are non-hazardous, non-toxic and non-pathogenic. No radioactive or microbial samples are allowed.
2. Mass photometry is compatible with a range of buffers, but should avoid scattering particles when possible, such as detergents. If detergent is needed, try less than 16 nM NP-40 (20% CMC of NP40).
3. In general, protein mass range is from 40 kDa to 700 kDa.
4. For **protein samples**, provide at least **100 µl of 0.1-10 µM your sample** and **5 mL** per sample of buffer for measurements. Both sample and buffer need to pass through 0.22 µm filter by centrifugation or filter disk.
5. DNA length range is 100-1200 bp and RNA length range, 500-5000 nt.
6. For **DNA/RNA samples**, provide at least **100 µl of 100 ng /µL your sample** and **5 mL** per sample of buffer for measurements. Buffer need to pass through 0.22 µm filter by centrifugation or filter disk. Do not use “ddH2O-only” as your buffer because salt is important for nucleic acids binding on poly-L-lysine coated glass.

III. Experimental setting

1. **Protein measurements**
   Calibration Standard: BSA (Sigma 23209) and Thyroglobulin (Sigma T9145)
   Movie: 1 min
   Image size: Regular Image size
   Coverslip: Non-coating

2. **DNA measurements**

Calibration Standard: Low mass DNA ladder (ThermoFisher 10068013)
Movie: 1 min
Image size: Regular Image Size for dsDNA less than 1000 bp. Large Image Size for dsDNA greater than 1000 bp.
Coverslip: Poly-L-lysine (Sigma P4832) coated.

3. **RNA measurement**
   Calibration Standard: RNA Millenium Marker (ThermoFisher AM7150)
   Movie: 1 min
   Image size: Large Image Size
   Coverslip: Poly-L-lysine (Sigma P4832) coated.
4. Sample will be processed according to the sequence that is filled in the application form. We will measure the calibration standard in your buffer to confirm the buffer is suitable for TwoMP. The experiments will stop if we can't get a reasonable reading for BSA.

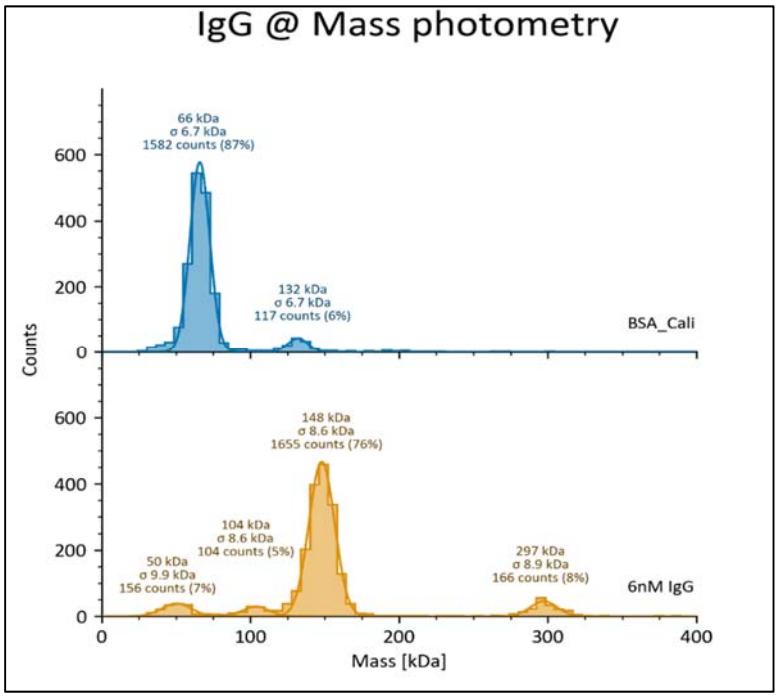
IV. Data Analysis

1. We will provide the experiment file (.mp) and preliminary analysis (.pdf).
2. Preliminary analysis can be downloaded through the BCF reservation system.
3. The size of an experiment file is around 30 MB. It is too big to attach to BCF reservation system. Please contact BCF staff for accessing the experiment files within 2 weeks.
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 mass photometry data collected by [operator] in the Biophysics Core Facility funded by Academia Sinica Core Facility and Innovative Instrument Project (AS-CFII-111-201)."

VI. Example of preliminary analysis



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