**Sample preparation for the DLS (Malvern Zetasizer Nano S)**

The cuvettes (Sigma, Z637939 by Brand) are supplied by the Facility (they are stored in the cupboard above the instrument, please keep the box closed to avoid dust contamination).

Minimum volume = 70 µL.

Samples should be spun down hard or filtered before pipetting. NB: particles > 1 µm are not suitable for DLS as they sediment and cause number fluctuations in the beam. Particles fluorescing/absorbing in the red region should be avoided since the laser operates at 633 nm.

The minimum concentration depends strongly on the scattering efficiency i.e. particle size, but can be estimated using [1.44 / MW(kDa)] mg/mL. However, best results are obtained with approx > 0.6 mg/mL for a 10 kDa protein and approx > 0.06 mg/mL for a 100 kDa protein. Most people work in the 0.5 - 2.0 mg/mL range. The data quality generally increases with concentration (in the absence of aggregation).

Most buffers are compatible with DLS. The viscosity can be calculated from the buffer composition using the instrument software (necessary for intensity-based particle size distribution analysis). NB: the ionic strength should be ≥ 10 mM to reduce the Debye layer drag.

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