

### Different features between bicelles and Pf1

Feature	Bicelles	Filamentous phage Pf1
Range of temperature	30-32 °C	5-30 °C (20-27 °C)
pH-range	Predominantly acidic proteins	pH 6-8 with [NaCl <sub>2</sub> ] ≤ 100mM
Handling	Establishment could be time-consuming	No preparation of the co-solvent; just add it to your sample
Impact on the structure of the molecule	Lipids are partly in solution (not formed as bicelles); this may lead to interaction and deformation of the molecules	No structural changes of the proteins are published so far
Storage conditions of the sample at 4 °C	Bicelles are stable only for defined temperature and salt concentration ranges.	More than a few months

A large advantage from Pf1 is, that you can measure the samples repeated, also after the samples were stored at 4 °C!

### RDC applications

- Analysis of inter-domain motion
- Analysis of slow dynamics
- Determination of relative domain orientations
- Identification of multimerization state
- Improved assignment
- Rapid structure determination
- Structure determination of protein complexes
- Structure refinement (proteins, nucleic acids, oligosaccharides)
- Validation of structures

### Pf1 applications

- Accurate definition of domain orientation in multi-module macromolecules or complexes
- Alignment of RNA, DNA and protein for NMR

Structure-activity relationship measurements (SAR by NMR)