

## **Tuning the timescale frame in the relaxation dispersion experiments by the addition of osmolites**

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NMR is a particularly well suited technique for the study of dynamic processes in biomolecules. Recent advances in the field have underlined the power of relaxation dispersion experiments in the characterization of motions in the millisecond-microsecond timescale, often ultimately responsible for the mechanism of functionally relevant biological processes. One limitation of the technique is the relatively narrow window of timescales and motions amplitudes that avoids a complete picture of the dynamic behaviour of the protein. It is well known that salts can modulate the properties of the solvent, without affecting the constitutional characteristics of the biomolecule. Our hypothesis is that by modulating the solvent composition with salts of the Hofmeister series we will be able to capture otherwise hidden motions, enlarging the amplitude and/or the timeframe of the experiment. To that end, relaxation-dispersion experiments will be measured under different solvent conditions over two different systems: bovine pancreatic trypsin inhibitor (BPTI) and ubiquitin. The comparative analysis of the data will be used to quantify the effect of the salt on the amplitude and the time-scale variability of the relaxation experiment.