



A cysteine ubiquitin mutant to add a spin label (4-MMDPA Gd3+) and AMUPol

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Field strength: 9.4 T

Why is this your favorite spectrum?

This is my first ssMAS NMR DNP spectrum I have recorded of the first protein I expressed in large scale (4 L starting material) to investigate different influences between AMUPol and high spin metal Gd3+.

Ubiquitin is an easy-to-handle, very robust protein, but I was able to make it no longer solvable. It was a bigger-scale expression with 40 g ¹³C glucose and 4 g ¹⁵N ammoniachloride. I troubleshooted for errors, and in the end the protein expression and purification required four weeks. It was a relief to see the actual spectrum of the protein even after realizing that the gadolinium was no longer complexed, which means there is still work to be done.