

¹⁵N-Detection Harnesses the Slow Relaxation Property of Nitrogen: Delivering Enhanced Resolution for Intrinsically Disordered Proteins

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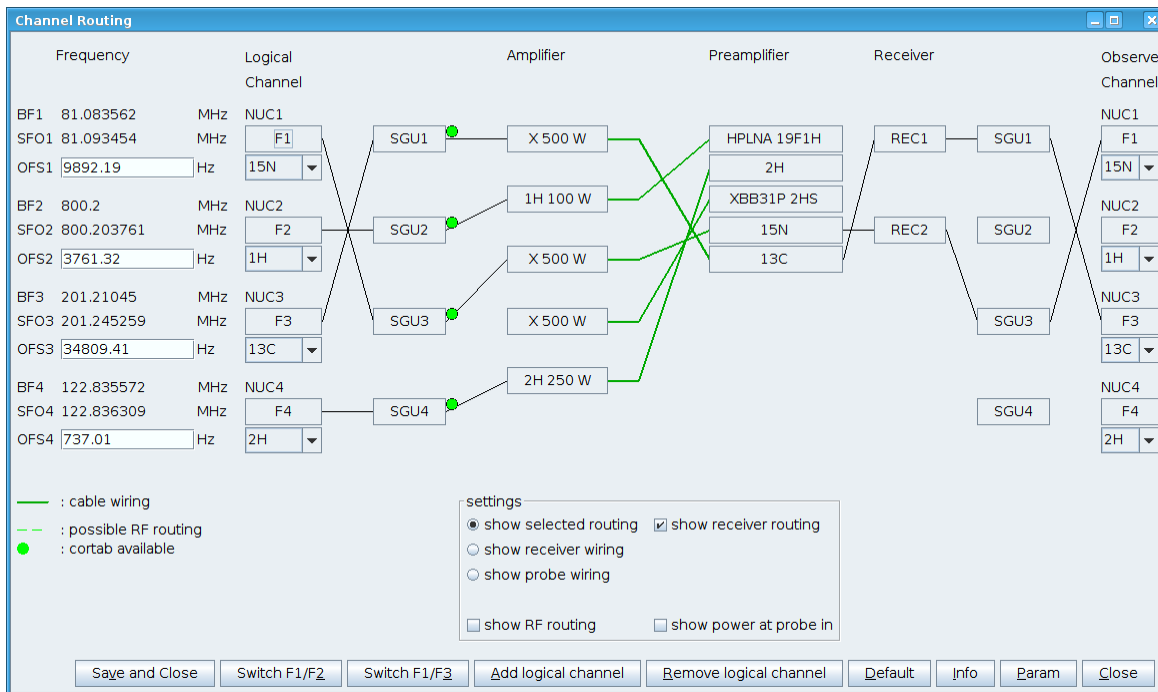
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The set of 6 ¹⁵N-detected pulse sequences along with the parameter set can be downloaded below.

Disclaimer: The pulse sequence, pulse and parameter set are provided "as is." DFCI, HMS and the authors make no warranties, either express or implied, as to any matter whatsoever with respect to these pulses sequences. In particular, any and all warranties of merchantability and fitness for any particular purpose are expressly excluded. In no event will the DFCI, HMS the authors be liable for any loss incidental, or consequential damages of any nature whatsoever (including damage to instrument, probe, sample or research loss) arising out of or relating to the use of these pulse sequences.

Few pointers.

- 1) These pulse sequences are designed to detect the N-D (nitrogen attached to deuterium) resonance and hence the sample needs to be in D₂O (solvent). We recommend a high a D₂O percentage as possible, to prevent exchange broadening.
- 2) The magnetization in these pulse sequences start at the aliphatic hydrogens, hence the sample cannot be deuterated.
- 3) The pulse sequences attached are written for a Topspin 3.0 and above with the new style mc statements.
- 4) The pulse sequences here are designed for a routing with the following configuration ¹⁵N in F1; ¹H in F2; ¹³C in F3 and ²H in F4. This in "edasp" will look as follows.



If you have a different configuration, the pulse sequence should be altered. In case you have ¹⁵N in F1; ¹³C in F2; ¹H in F3 and ²H in F4 please contact us at hari@hms.harvard.edu and we will send you a different set of pulse sequence.

5) If you are using the parameter set that is attached here, make sure you type edasp, and click on default and save, before you do anything else.

6) Kindly pay attention to the power level of your deuterium decoupling. During acquisition in the direct dimension both ¹³C and ²H decoupling are on. Keep the ²H decoupling power to the minimum needed. Center the ²H frequency to the amides.

7) We use an adiabatic WURST pulse (2000ms) for ¹³C decoupling. We have attached this shape file (to be placed in the wave directory) and the appropriate power level has to be calculated for your system (depending on the length and power of your hard ¹³C 90)

8) In our experience using NUS (5-12%) with a collection time of 3-4 days (for each experiment) on sample at concentration above 500uM and a TXO probe yields good spectrum.