COSY Instructions for TOPSPIN 3.5pl7

Acquire a Proton Spectrum

Create a new dataset by typing **new** and enter a new NAME for this dataset as needed.

Lock, shim and run a normal ^{1}H NMR experiment in EXPNO 1.

Set up and acquire the COSY Experiment

Add a new experiment into your dataset by typing **new** and changing the EXPNO to 2.

In the Experiment section, select COSY from the user parameter set list and make sure to select '**getprosol**'.

Next you will need to examine your ^{1}H NMR spectrum (type **re 1** to view this spectrum) to determine the spectral window (**sw**) needed for your COSY. Choose a window that is ~1ppm further upfield and downfield from all peaks in your spectrum. Then determine the center chemical shift (**o1p**) of this window.

Type **re 2** to return to your COSY experiment. Type **eda** to enter in the following parameters: **sw** in both dimensions, **o1p** (center chemical shift) – as was determined from the 1D spectrum.

Also, increase the number of scans and increments to acquire data needed for decent S/N in the 2D spectrum. For example, a ~30 minute experiment set **ns** to 4 scans and **TD** (in F1) to 256 data points.

Stop the spin. Recheck the shim (**topshim**).

Type **rga** and **zg** to begin the experiment.

Processing the 2D Data

After approx. 8 increments have been acquired, type **xfb** to Fourier Transform the 2D dataset. When the S/N is sufficient, type commands in this sequence (followed by enter): **xfb**, **abs1**, **abs2**, **sym**. To stop the experiment before completion, type **halt**.

Reference the Chemical Shifts

Type **re 1**. Reference (calibrate) this ^{1}H spectrum as usual to your deuterated solvent peak. Type **sr** and write down this number to use for referencing your 2D data.

Type **re 1** then **sr** and enter the number from the ^{1}H spectrum into both fields to reference the 2D data in both dimensions.

Plot the data using the Plot Editor.

NOTES: