

## COSY GUIDE

1. Setup and obtain a 1-D proton spectrum. Determine the optimal spectral window around your peaks of interest allowing for ~ 0.5ppm on either side of your peaks. If your resonances fall between 1-8 ppm, you should select a **sw** of 8 (from 0.5ppm to 8.5ppm). The center of your spectrum is called **o1p** and for the above example it would be 4.5ppm. Record **sw** and **o1p**.
2. Type **edc** [enter] and change the experiment number to **2** (or type **iexpno** [enter]). Type **rpar** [enter] and select **COSYGPSW\_BROWN**, click on 'copy all'. Type **eda** [enter] or click on the Acqu tab and change **sw** in F1 and F2 and **o1p** and **o2p** to the values recorded in step 1 (**o2p** should be set to the same value obtained for **o1p**). Put **AQ** back to 0.5s. Make sure the appropriate solvent is selected and click the little blue test tube icon to update the probe parameters. Click the 'Spectrum' tab when you are finished. If you know your sample is not concentrated, you may want to increase the number of scans, **ns** in the **eda** window.
3. Type **rga** [enter]. Type **zg** [enter].
4. Type **xfb** [enter] to process the 2-D data any time during the acquisition. You can stop your acquisition before it finishes if you have already resolved your cross peaks of interest. Just type **halt** and **xfb** to process the latest scans. Baseline corrections often help the appearance of the spectrum, type **abs1** [enter] **abs2** [enter]. It is often beneficial for T1 noise reduction to symmetrize the data by typing **symt** and selecting 'COSY type spectra'. If you right mouse click on the traces on the left and top of your spectrum and select external projection, you can select your optimized proton spectrum to be the spectrum you see on both sides of the 2-D display.

### Double Quantum Filtered (DQF-COSY)

Sometimes greater resolution can be achieved around the diagonal by using the DQF COSY. Another benefit of this version is the suppression of signals that do not have any coupling. All the instructions are the same except you rpar **COSY\_DQF\_BROWN**. Be sure to change your SW/o1p and put AQ back to 0.5s and click the little blue test tube after calling in the new parameters set.

### Long Range COSY

If you are looking for long range coupling information, there is a specific COSY that incorporates a longer delay for coupling evolution. All the instructions are the same except you rpar **COSY\_LR\_BROWN**. Be sure to update the important parameters, SW, o1p/AQ=0.5s and click the little blue test tube after changing parameter set. If you still do not see the coupling you are looking for, you may need to make d6 longer than the default of 80ms.