## Supplementary file

**Table S1.** The proportion of NMR samples prepared with different hydration level

| Sample name | wt % $H_2O$ | m (phytantriol) mg | V ($H_2O$) µL |
|---|---|---|---|
| PT12 | 12 | 150.5 | 21 |
| PT22 | 22 | 135.6 | 35 |
| PT28 | 28 | 127.1 | 47 |
| PT80 | 80 | 38.5 | 156 |

**Table S2.** The NMR experiments and adjusted parameters.

| No. | Spectra name | Acquisition parameters | Processing parameters |
|---|---|---|---|
| 10 | PROTON | Standard 1D proton | Auto baseline correction method: Polynomial Fit; Auto phase correction; Reference: 7.26 ppm |
| 11 | qNMR | Quantitative 1D proton | Same as 10 |
| 12 | WATERSUP_zgesgppe | 1D proton with suppression of $H_2O$ signal | Same as 10 |
| 13 | C13CPD | Standard 1D 13C | Baseline correction method: Whittaker Smoother; Auto phase correction; Reference: 77.16 ppm |
| 14 | HSQCEDETGPSISP | Edited HSQC. 1sw=165, o2p=50 | Apodization: Sine square 90; Baseline correction method: Bernstein Polynomial Fit; Auto phase correction |
| 15 | PROF_HMBC_WATERSUPP | HMBC with solvent suppression. 1sw=165, o2p=50, ns=4, d1=2, 1td=256 | Same as 14 |
| 16 | NOESYPHPR | NOESY with solvent suppression. | Same as 14 |
| 17 | COSYGPSW | Standard cosy | Apodization: Sine square 0 |
| 18 | DOSY_DC | DOSY | |

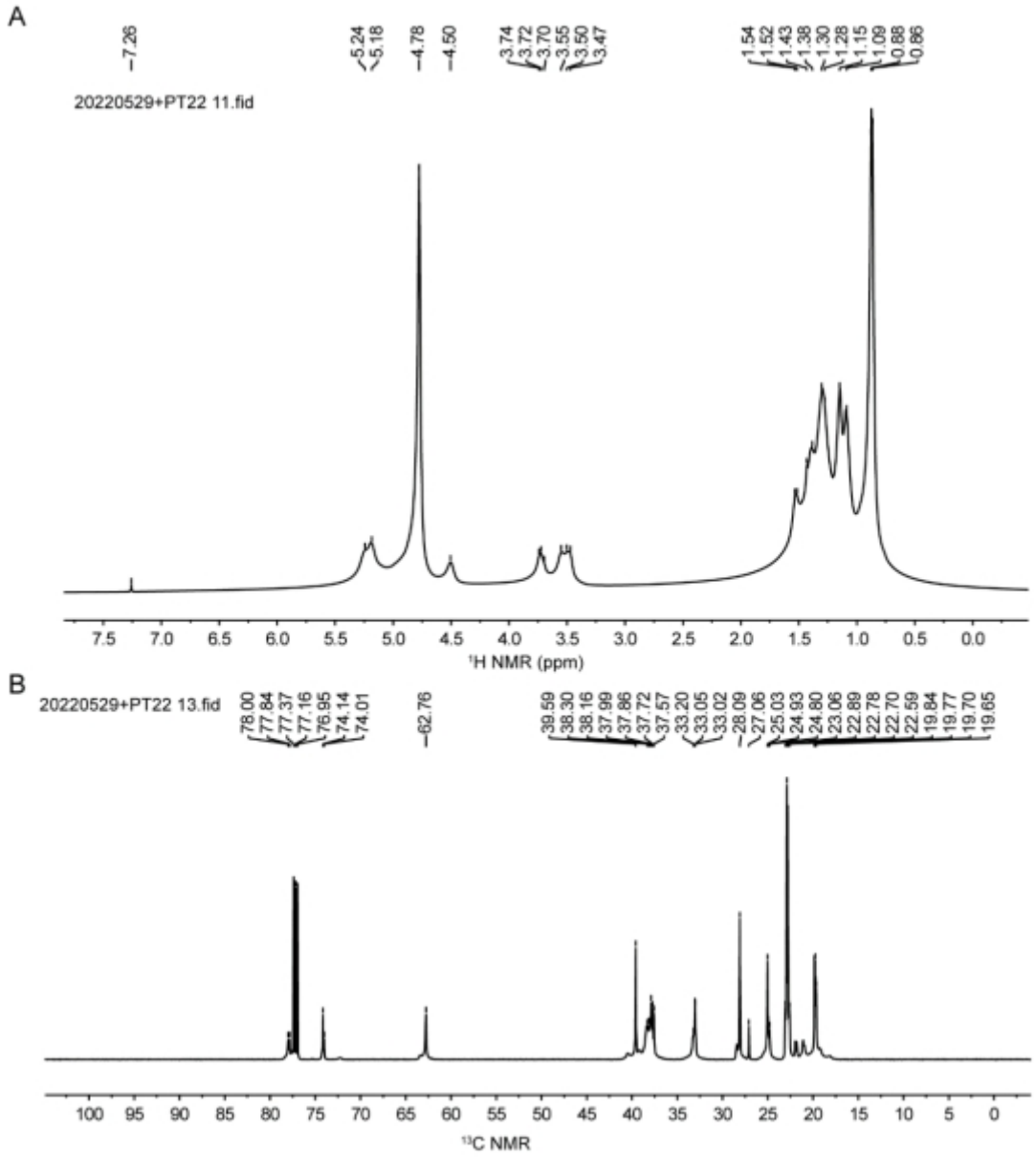


**Figure S1.** (A) $^{1}H$ NMR and (B) $^{13}C$ NMR spectra of PT22 (22% wt $H_2O$) at day 63.

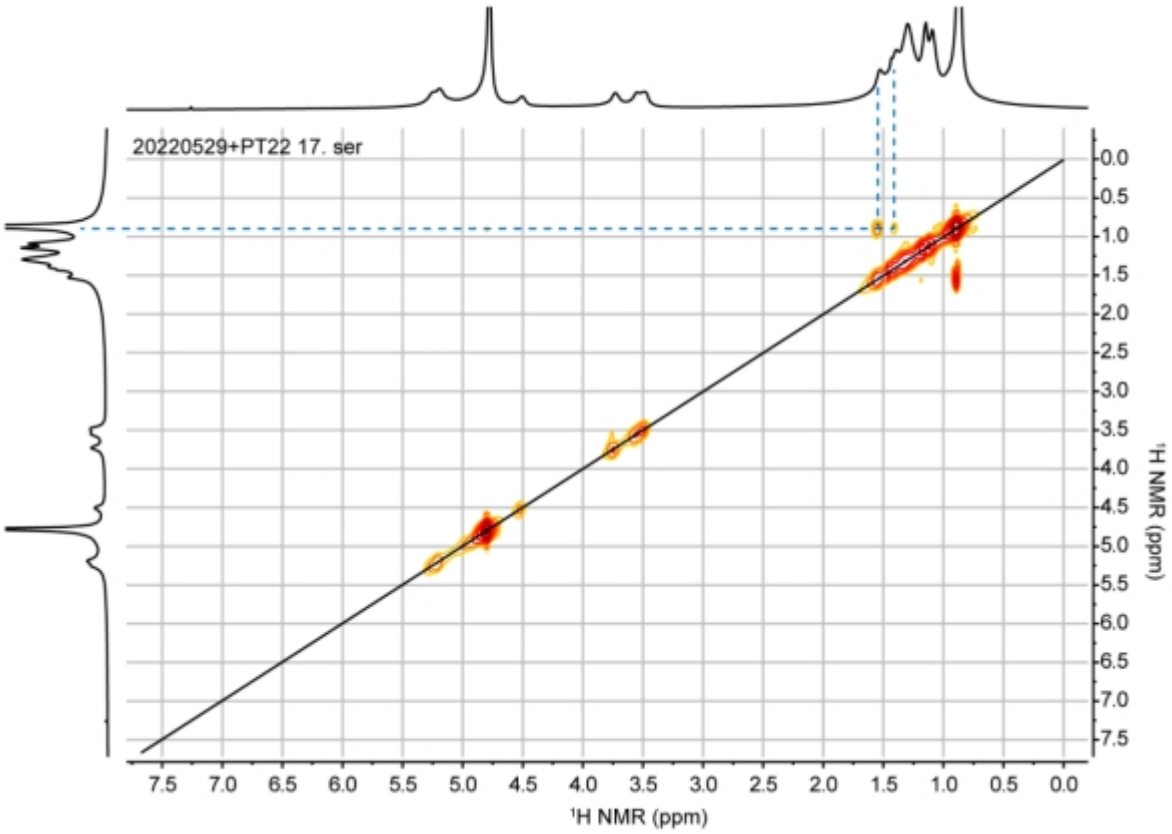


**Figure S2.** $^{1}H$ – $^{1}H$ COSY spectrum of PT22 (22% wt $H_2O$) at day 63.

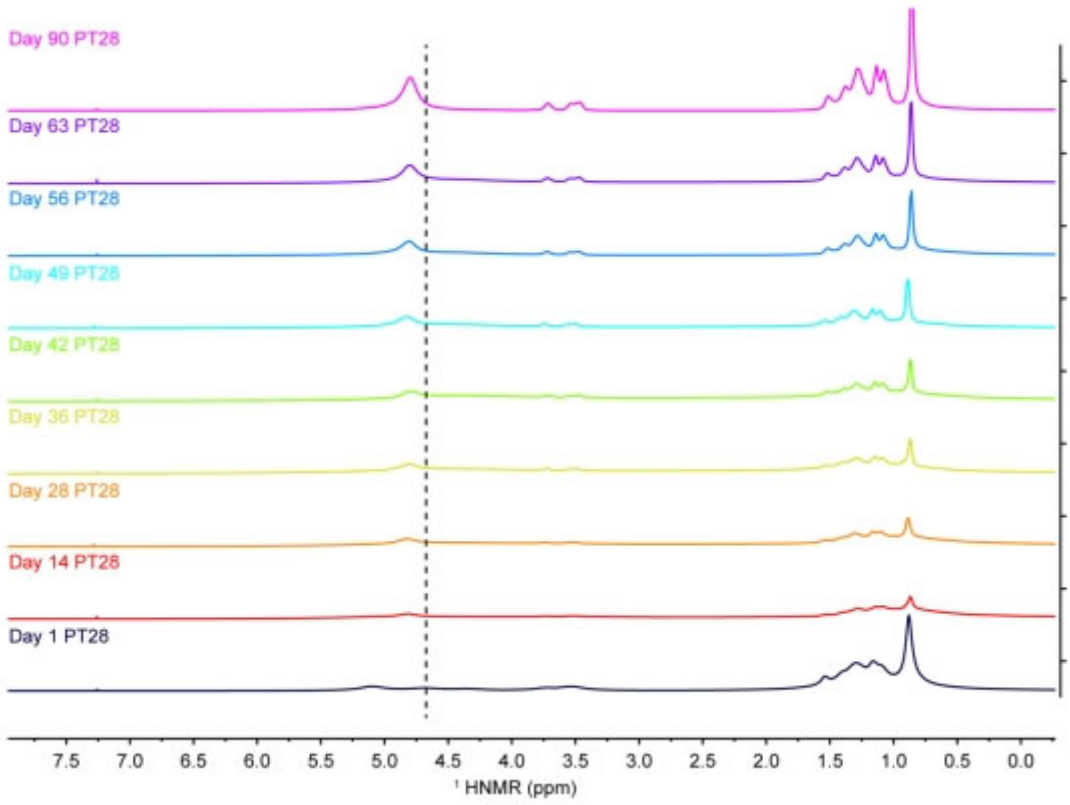


**Figure S3.** $^{1}H$ NMR spectra of PT28 changed with time.

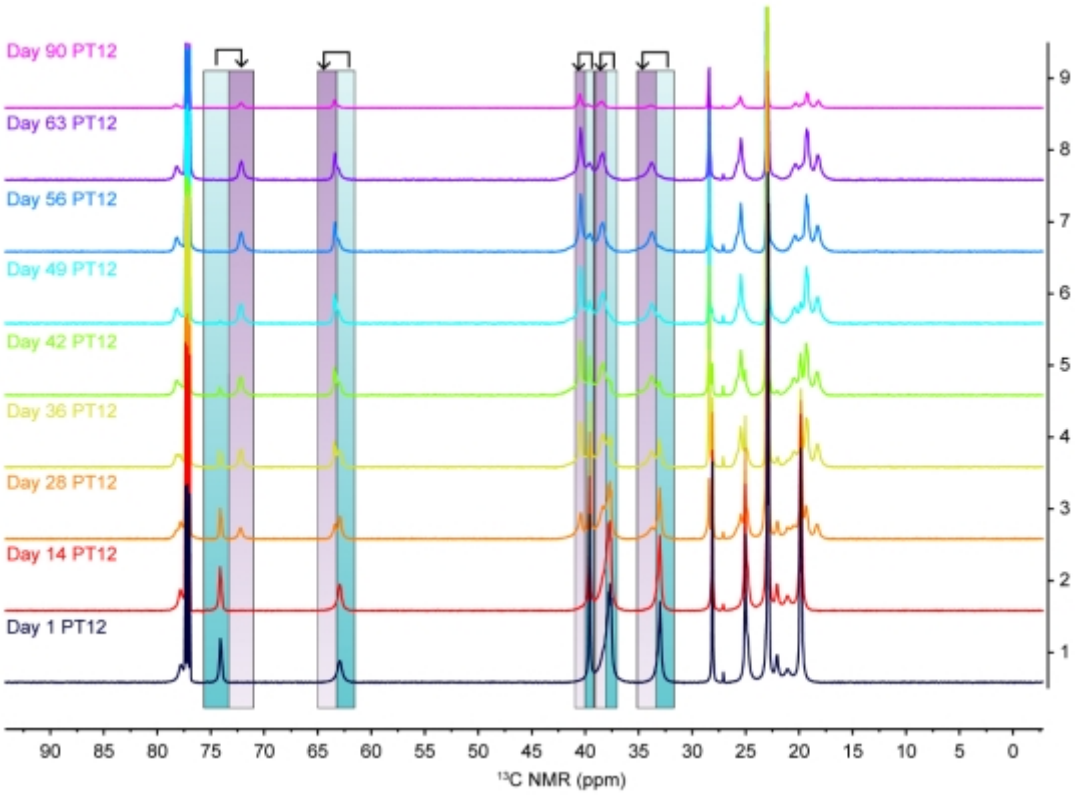


**Figure S4.** $^{13}C$ NMR spectra of PT12 changed with time.

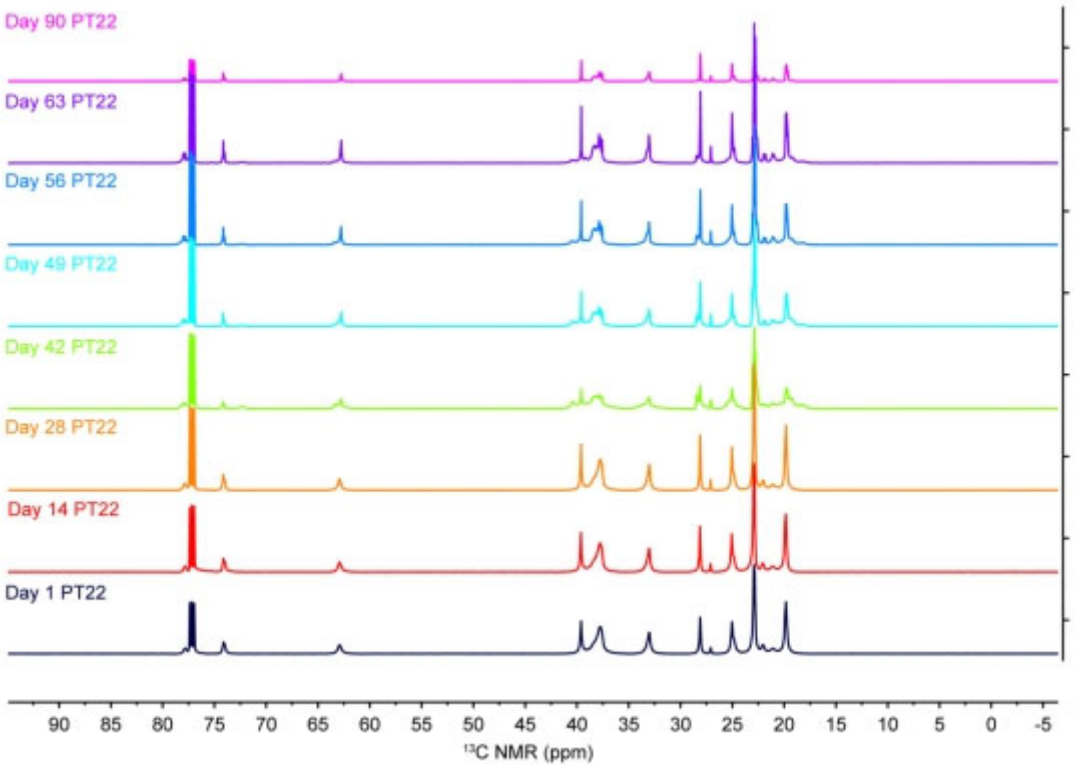


**Figure S5.** $^{13}C$ NMR spectra of PT22 changed with time.

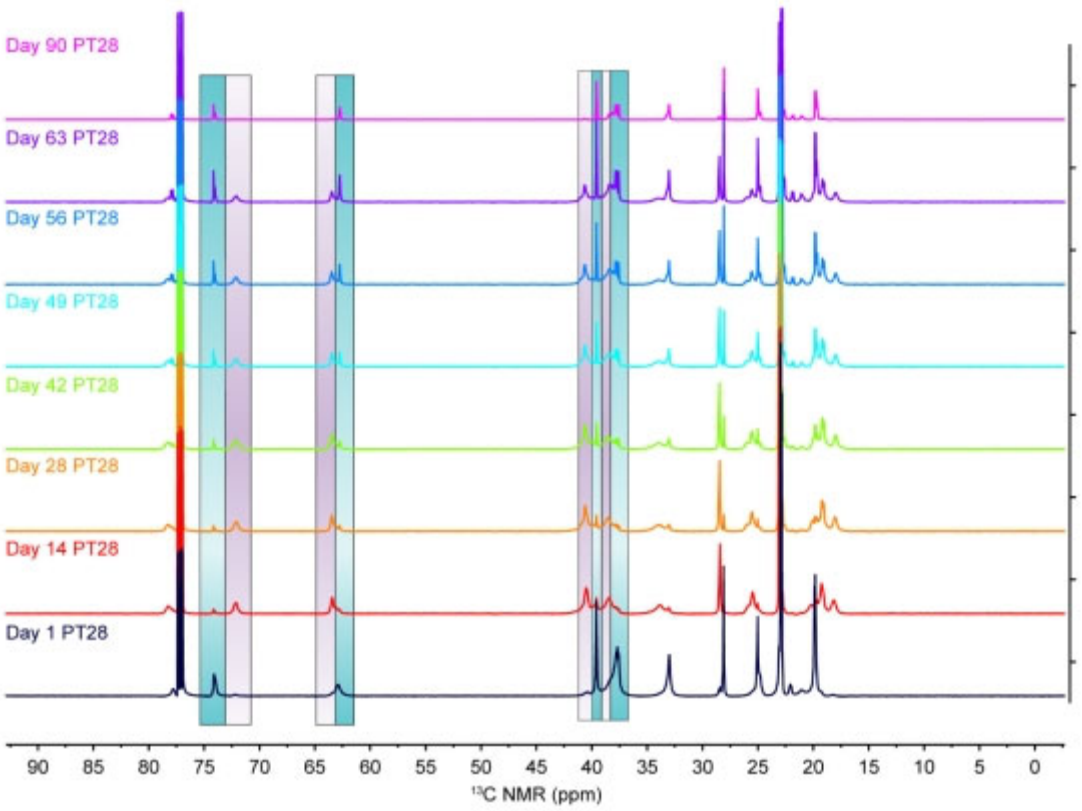


**Figure S6.** $^{13}C$ NMR spectra of PT28 changed with time.

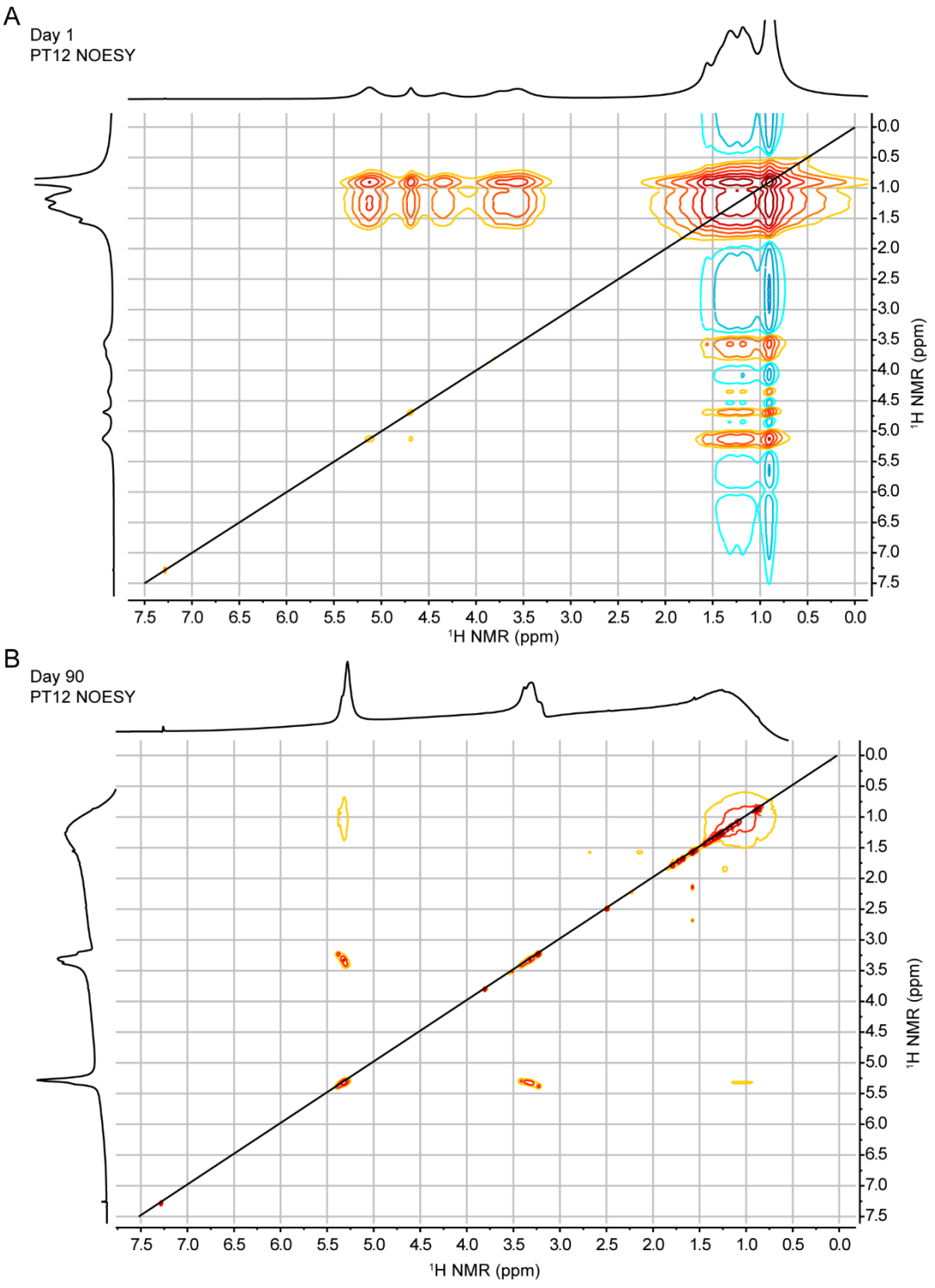


**Figure S7.** $^{1}$H-$^{1}$H 2D-NOESY spectra of PT12 on the (A) day 1 and (B) day 90.