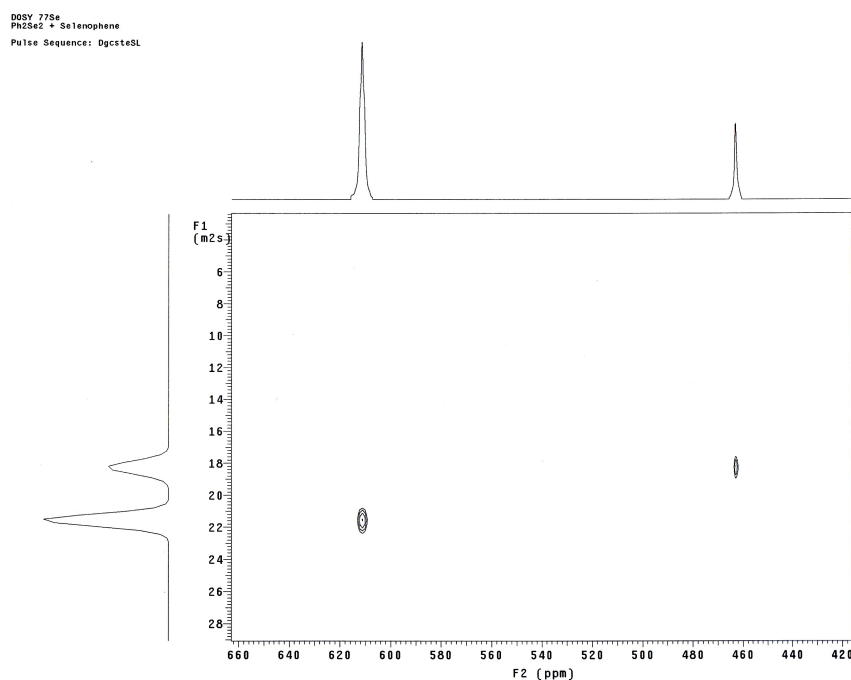


^{77}Se DOSY experiments were carried out at room temperature (25°C) at a frequency of 57.24 MHz using a 5 mm PFG (Pulsed Field Gradient) probe equipped with a z-axis gradient amplifier with active shielding coil, in a 7.04 T Varian Unity plus spectrometer. ^{77}Se spectra were referenced at 462 ppm to diphenyldiselenide, in CDCl_3 , as an external standard. DgcsteSL pulses sequence was used; 64 transients were collected for each of 20 gradient values; and the gradient strength was varied between 1 and 45 Gcm^{-1} ; 2.1 ms

rectangular gradients pulses were used and the diffusion time Δ was set at 0.25 s. The recycling delay time was 45 s ($5 \times T_1$) and the total acquisition time was 16.5 hours.

T_1 was determined for the studied nucleus, using the inversion recovery pulse sequence: $(\pi - \tau - \pi/2)$. The values for ^{77}Se chemical shift and diffusion coefficient were, respectively, 462.8 ppm and $1.79 \times 10^{-9} \text{ m}^2\text{s}^{-1}$ for the diphenyldiselenide and 611.1 ppm and $2.13 \times 10^{-9} \text{ m}^2\text{s}^{-1}$ for selenophene.



To assess the consistency of our measured ^{77}Se diffusion coefficient, we compared these values with the equivalent ^1H DOSY ones, *i.e.*, with a firmly established technique, for the same sample. The obtained results for the diffusion coefficients for both ^{77}Se and ^1H were

the same, within the error bars. It was also found that ^{77}Se DOSY can be alternatively used in cases where proton DOSY experiments are poorly resolved.

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