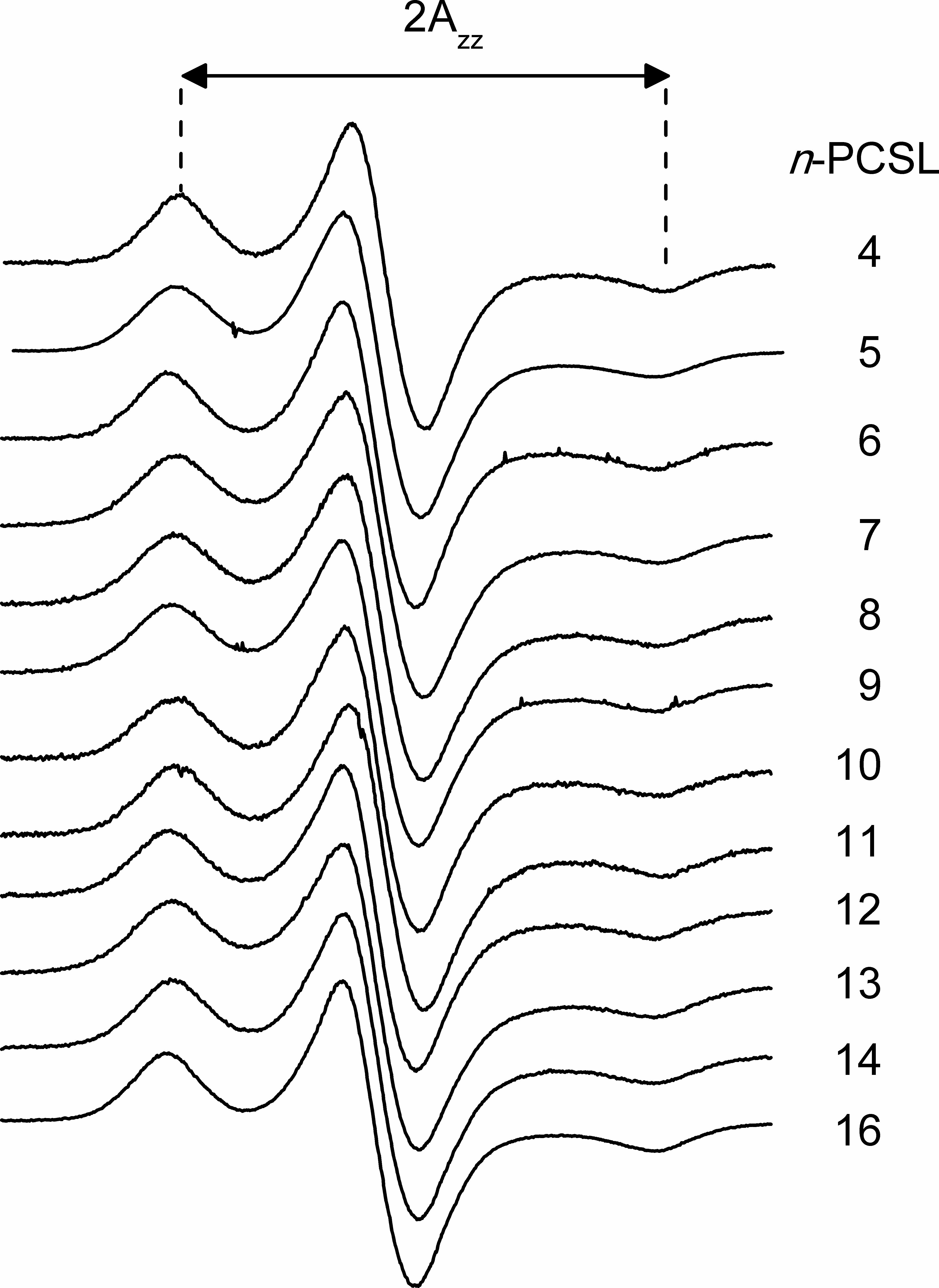
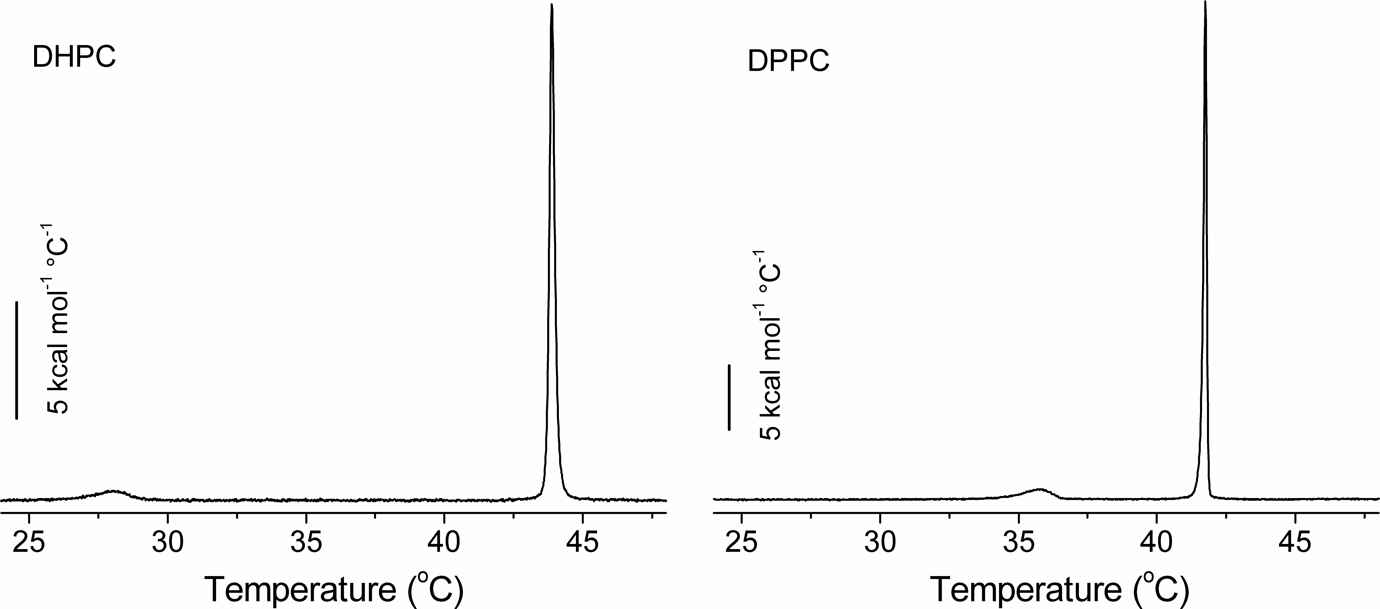


**Fig. S1.** D2O-ESEEM spectra of *n*-PCSL spin-labels in DHPC at -196 °C.



**Fig. S2.** CW-EPR spectra of *n*-PCSL spin-labels in DHPC at -196 oC. Spectral width = 11 mT.



**Fig. S3.** DSC endotherms at a scan rate of 5 °C/h, from DHPC and DPPC dispersed in excess D2O.