

P3W peptide was synthesized and purified (>95% by HPLC) by the Caltech Peptide Facility, Pasadena, CA. GdP3W was prepared from P3W in 50 mM HEPES buffer, pH 7.4, by adding 0.8 equivalents Gd(NO₃)₃ to give a 500 μM stock solution. Peptide concentration was estimated by absorbance ($\epsilon_{280} = 7290 \text{ M}^{-1} \text{ cm}^{-1}$); the absence of uncomplexed Gd³⁺ was confirmed by colorimetric analysis with xylenol orange. All Gd concentrations were determined by ICP-MS (Agilent 7500). Relaxation rates were determined at 20 and 60 MHz, 37 °C using Brüker NMS 120 and Brüker mq60 Minispec spectrometers, respectively. NMRD profiles were recorded on a Koenig–Brown field cycling relaxometer; phantoms were imaged on a GE 1.5 T clinical imager.