SUPPORTING INFORMATION

PREs in micelles vs planar membranes

For a planar membrane the PRE as a function of immersion depth is given by integration of Eq.(4) over the free volume outside the membrane leading to Eq.(6). In the case of a micellar system an analytical solution cannot be obtained due to the curved surface, which would require the use of curved integration limits. Therefore, we carried out a numerical summation over a grid of 100x100x100 Å according to

$$PRE = \sum_{x,y,z} \frac{k}{\left(\sqrt{(x-x_d)^2 + (y-y_d)^2 + (z-z_d)^2}\right)^6}, \qquad \text{(S1)}$$

where the coordinates x_d, y_d and z_d define the position of a point with immersion depth d and x, y and z are the coordinates of the grid volume element to be added. A grid spacing of 1 Å was used. The concentration of the paramagnetic probe, which translates into occupancies at each grid point is included in the constant "k" as in Eq.(5). The summation is carried out over the whole free volume outside the micelle (including a possible solvent layer and the radius of the paramagnetic probe). PRE values calculated using Eq.(S1) as a function of the immersion depth for various micelle sizes are shown in Figure S1 compared to the corresponding function for a planar membrane. The latter was obtained through Eq.(6). The similarity between the curves is high enough to allow the use of Eq.(6) also for micellar systems.

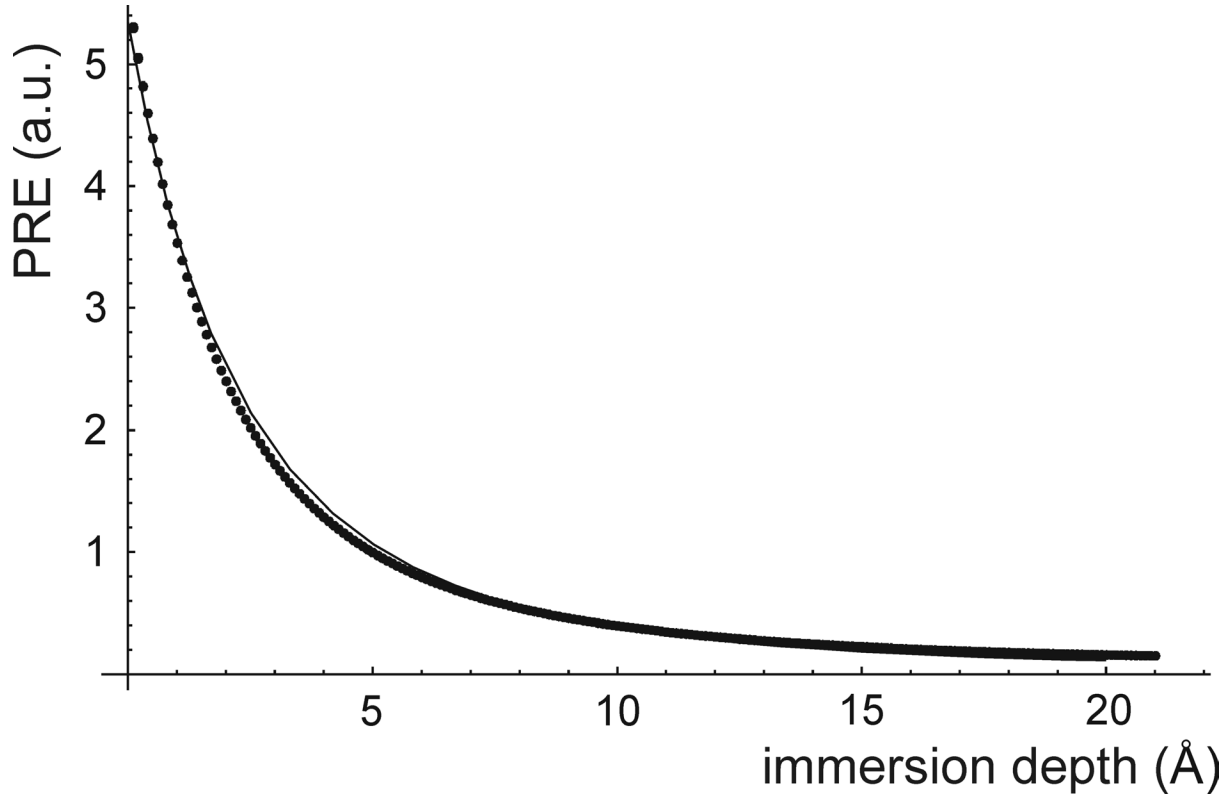

Figure S1.

Paramagnetic relaxation enhancements (PRE, in arbitrary units) as a function of immersion depth, calculated for a planar membrane and a micelle are shown by a line and dots, respectively. The line for the 60 Å thick membrane was calculated using Eq.(7), while the dotted line for a micellar systems was obtained through Eq.(S1) using radii of the micelle and paramagnetic probe of 30 and 7 Å, respectively.