Time-dependent increase in the aqueous solubility caused by the gradual disruption of hydrophobic aggregation

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A. The equations used for the dynamic light scattering.

\[ g^{(2)}(\tau) = B \left( 1 + f |g^{(1)}(\tau)|^2 \right) \]

\( \tau \) is lag time, \( g^{(2)}(\tau) \), is the time correlation function of scattering light intensity, \( g^{(1)}(\tau) \), is the electric field correlation function, \( B \) is the baseline, and \( f \) is an instrumental parameter.

\[ g^{(1)}(\tau) = \int G(\Gamma) \exp(-\Gamma \tau) \, d\Gamma \]

\( \Gamma \) is the decay time and \( G(\Gamma) \) is the decay time distribution. Diffusion coefficient, \( D \), is obtained by the relation, \( D = \Gamma q^2 \), where \( q \) is scattering vector. Hydrodynamic radius, \( R_h \), is
obtained by Stoke-Einstein equation $D = k_b T / 6 \pi \eta R_h$. $k_b$ is the Boltzmann constant, $T$ is the absolute temperature, and $\eta$ is the solvent viscosity. The polydispersity index (PDI), $\mu_2 / \Gamma^2$, is obtained from cumulant analysis. $\mu_2$ is the second order cumulant coefficient.
B. DLS data.

**Figure S1.** Correlation functions of P1 with different incubation time.

**Figure S2.** Average decay rate of P1 with different incubation time.