

Fitting of experimental data

The Eq. 17 was fitted to the experimental data using Levenberg-Marquardt non-linear regression algorithm (Marquardt DW. An algorithm for the estimation of non-linear parameters. J. Soc. Indust. Appl. Math. 1963;11:431–441) in a custom routine written in OriginPro 8.0 (OriginLab, Northampton, MA). The fits were done using the following custom function representing Eq. 17:

$$y = A \cdot \exp(-E_a/8.31/x) \cdot (T_{cr}-x)/T_{cr},$$

where A, E_a , and T_{cr} , are fitting parameters. Initial guesses for parameters were systematically varied to ensure convergence to a global minimum. E_a and T_{cr} are the activation energy and the critical temperature of the transition, respectively. Parameter A includes all constants from Eq. 17 and is given by the following relation:

$$A = \frac{1}{6\pi\eta_0\sqrt{12/c_3}}$$

The fitting results are shown in the Supplementary Table below.

Protein	$A \cdot 10^{-2}$, m ² /s	E_a , kJ/mol	T_{cr} , K
Lysozyme, 18 mg/mL	2.3 ± 2.0	42.5 ± 2.3	342 ± 2
RNase A, 11 mg/mL	3.4 ± 2.4	42.0 ± 1.9	339 ± 1
RNase A, 32 mg/mL	1.9 ± 1.1	43.3 ± 1.8	339 ± 1