

Supporting Information for:

## Dynamics of Proteins Encapsulated in Silica Sol-gel Glasses Studied with IR Vibrational Echo Spectroscopy

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### Best fit frequency-frequency correlation function (FFCF) parameters

	$\Delta_0$ (cm <sup>-1</sup> )	$\Delta_1$ (cm <sup>-1</sup> )	$\tau_1$ (ps)	$\Delta_2$ (cm <sup>-1</sup> )	$\tau_2$ (ps)
<b>MbCO aqueous (A1)</b>	0.50	5.34	0.25	3.41	11.98
<b>MbCO sol-gel (A1)</b>	1.25	5.33	0.18	3.24	16.22
<b>HbCO aqueous (CIII)</b>	2.29	5.56	0.18	2.32	8.39
<b>HbCO sol-gel (CIII)</b>	2.24	6.01	0.14	2.28	9.79

**Table S1.** Best fit FFCF parameters for MbCO and HbCO in aqueous and sol-gel environments. The functional form of the FFCF,  $C(t)$ , is a biexponential plus a constant:

$$C(t) = \Delta_0^2 + \Delta_1^2 \exp(-t / \tau_1) + \Delta_2^2 \exp(-t / \tau_2)$$

These values simultaneously reproduce the experimentally measured linear IR spectra and the vibrational echo decays at several  $T_w$  delay times.