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Supporting Information for,

Collective Hydration Dynamics of Guanidinium Chloride Solutions and its Possible Role in Protein Denaturation: A Terahertz Spectroscopic Study

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Table S1. Debye relaxation fitting parameters of aqueous solutions of GdmCl at different concentrations.

[GdmCl] (M)	ε_∞	[a]S_1	S_2	S_3	τ_1 (ps)	τ_2 (fs)	τ_3 (fs)	σ (S m^{-1})
0	1.76±0.03	71.16	0.34±0.04	1.54±0.10	8.94±0.1	227±70	74	0.20
1	1.91±0.03	62.70	0.46±0.07	1.47±0.06	9.02±0.1	233±63	86	8.02
2	1.93±0.03	54.29	0.69±0.07	1.45±0.06	8.91±0.1	222±39	86	14.63
3	1.94±0.03	46.38	0.92±0.08	1.39±0.06	8.72±0.2	218±29	84	19.20
4	2.07±0.03	38.59	1.17±0.07	1.17±0.06	8.33±0.1	204±19	86	22.82
5	2.05±0.03	33.06	1.29±0.07	1.27±0.06	8.20±0.16	207±19	86	25.22
6	2.09±0.03	27.75	1.46±0.07	1.26±0.06	7.77±0.2	200±15	86	26.01

[a] Values are taken from, *J Phys. Chem. B,* 2010, **114**, 13617-13627.

Table S2. Debye relaxation fitting parameters of aqueous solutions of TMGdmCl at different concentrations.

[TMGdmCl] (M)	ε_∞	[b]S_{slow}	[c]S_1	S_2	S_3	[b]τ_{slow} (ps)	τ_1 (ps)	τ_2 (fs)	τ_3 (fs)	σ (S m^{-1})
0.5	2.07±0.03	10.52	65.92	0.56±0.06	1.3±0.1	21.85	11.05±0.2	213±44	80	5.0
1	2.06±0.03	12.32	58.98	0.75±0.06	1.3±0.1	31.87	12.48±0.3	218±35	80	7.0
1.5	2.03±0.04	14.56	55.35	0.90±0.07	1.0±0.1	33.21	16.92±0.4	192±24	79	9.0

[b] Values taken from: *J. Am. Chem. Soc.* 2010, **132,** 15671-15678

Table S3. Debye relaxation fitting parameters of aqueous solutions of NaCl at different concentrations.

[NaCl] (M)	ε_∞	[c]S_1	S_2	S_3	τ_1 (ps)	τ_2 (fs)	τ_3 (fs)	σ (S m^{-1})
1	1.99	58.20	0.39±0.06	1.74±0.07	7.62±0.14	281±90	79	8.26
2	2.07	51.66	0.56±0.03	1.74± 0.08	7.04±0.11	256±55	79	11.96
3	2.05	44.97	0.67±0.03	1.86±0.08	6.63±0.10	249±43	80	16.02
4	2.07	36.58	0.86±0.03	2.05±0.06	6.46±0.12	261±33	81	21.60
5	2.05	32.83	0.89±0.03	2.30±0.06	6.01±0.04	274±35	79	22.29

[c] Values are taken from, *J. Chem. Phys.* 1948, **16,** 1-20.