

Supporting Information

Hydrated ionic liquids realising high solubility and refolding of aggregated Concanavaline A

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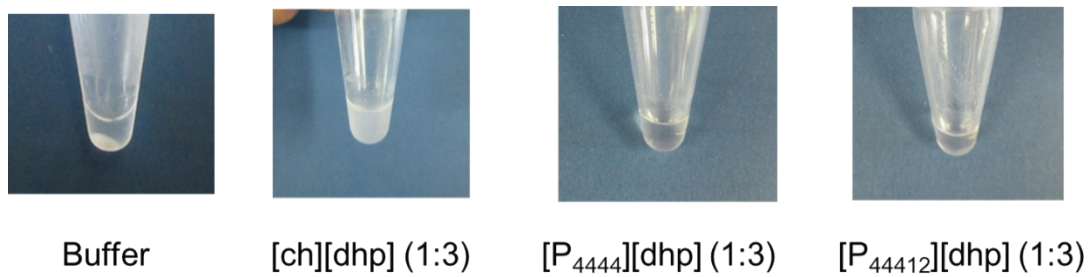


Figure S1. Photographs of hydrated IL with aggregated ConA after mixing for overnight at RT.

White precipitate was remaining and dispersed in buffer and hydrated [ch][dhp]. In hydrated [P₄₄₄₄][dhp] and [P₄₄₄₁₂][dhp] showed good solubility with transparent liquid state.

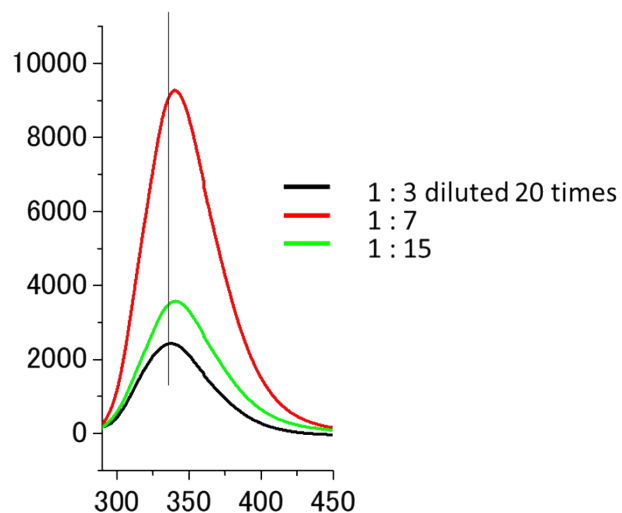


Figure S2. Fluorescence spectra of ConA dissolved in hydrated $[P_{44412}][dhp]$ with different water contents

Fluorescence spectra of ConA dissolved in $[P_{44412}][dhp]$ with 3 water molecules per ion pair was diluted with hydrated $[P_{44412}][dhp]$, because it dissolved aggregated ConA very well and the fluorescence intensity was saturated. The fluorescence intensity of ConA decreased with increase of water contents in $[P_{44412}][dhp]$. Thus, the solubility of aggregated ConA in hydrated $[P_{44412}][dhp]$ decrease with increasing water contents. Furthermore, spectral shift was observed at λ_{max} from 337 to 342 nm with increasing water contents in $[P_{44412}][dhp]$.

Table S1 Deviation of λ_{max} in neat ILs from 336 nm which is the λ_{max} of native ConA dissolved in buffer solution.

IL	Water molecules per ion pair	Shift of λ_{max} of fluorescence spectrum of conA
[P ₄₄₄₁₂][dhp]	0	-11
[N ₄₄₄₄][dhp]	0	+7

Table S2 λ_{max} deviation in the fluorescence spectrum of ConA dissolved in hydrated dhp-based ILs^a

	The number of water molecules per ion pair		
	1 : 3	1 : 7	1 : 15
[P ₄₄₄₄][dhp]	+ 3	+ 4	+ 6
[P ₄₄₄₈][dhp]	+ 1	+ 4	+ 6
[P ₄₄₄₁₂][dhp]	+ 1	+ 4	+ 6
[P ₆₆₆₆][dhp]	+ 2	+ 2	+ 4
[P ₈₈₈₈][dhp]	+ 3	b	b
[N ₁₁₁₃][dhp]	- 3	- 3	- 2
[N ₁₁₁₈][dhp]	b	b	+ 5
[N ₁₄₄₄][dhp]	b	+ 2	+ 3
[N ₄₄₄₄][dhp]	+ 7	+ 9	+ 7
[N ₁₁₈₈][dhp]	b	- 25	- 25
[N ₆₆₆₆][dhp]	+ 2	+ 2	+ 3
[N ₁₈₈₈][dhp]	- 4	- 11	b
[N ₈₈₈₈][dhp]	+ 3	b	b
[ch][dhp]	- 3	- 1	- 2

^a The number indicates the shift from 336 nm, which is the fluorescence maximum of the native state ConA in buffer. ^b Unmeasured.