

Supporting material

**Regulation of Protein Disaggregation and its Cytotoxicity
by the Hydrophobic Chain Length of Ammonium-Based
Ionic Liquids**

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1. Dynamic light scattering:

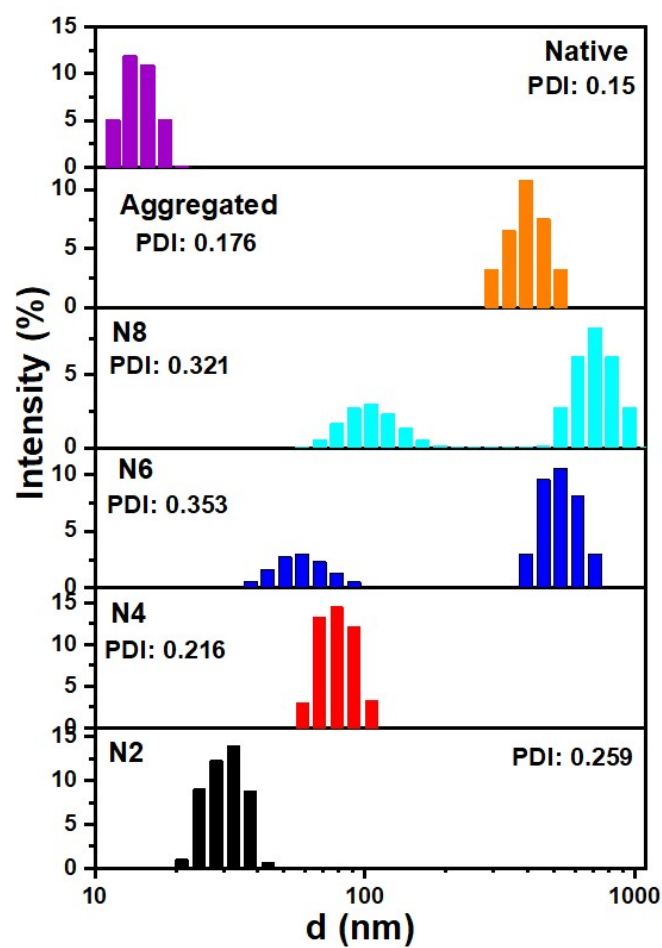


Fig. S1. DLS data of BMP-2 aggregates untreated and treated with ionic liquids (e.g. N8 means aggregated with N8)

2. FTIR spectra:

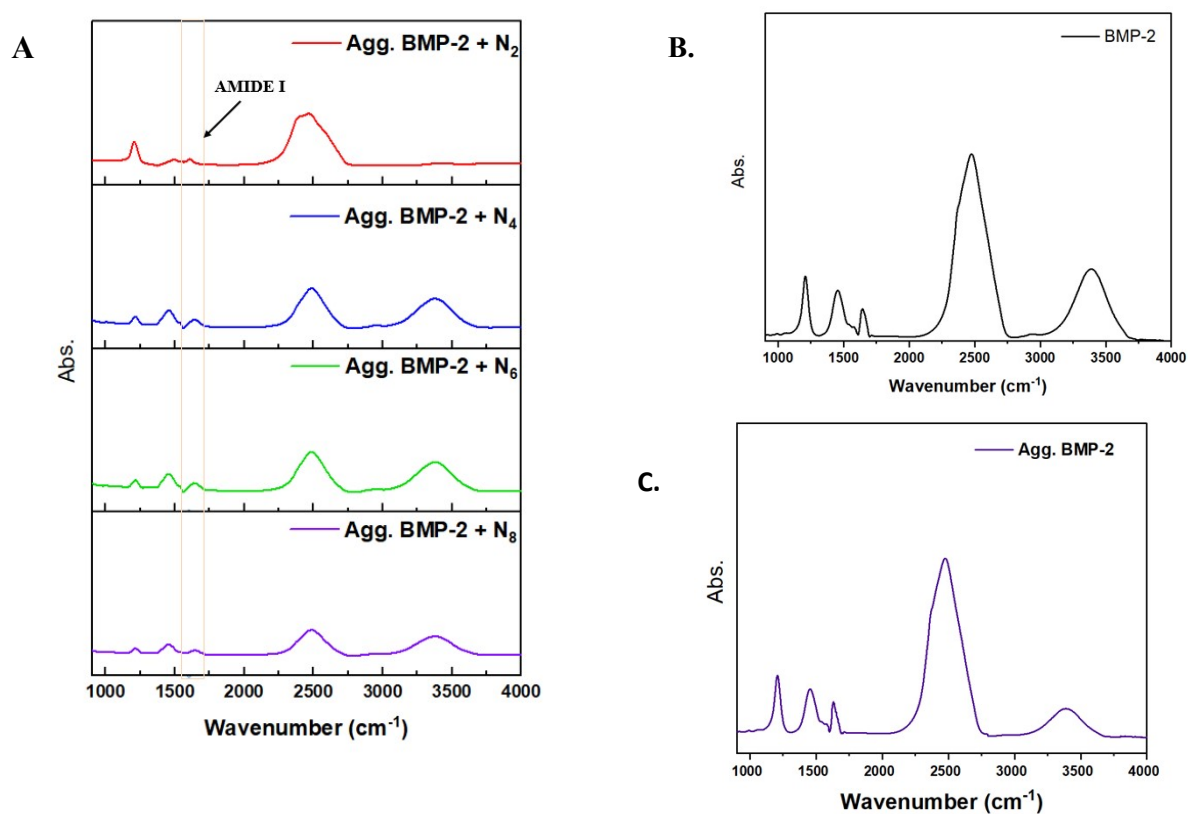


Fig. S2. Full spectra of FTIR study of (A) heat aggregated BMP-2 treated with ionic liquids, (B) native BMP-2 and (C) Heat aggregated BMP-2

3. Hydrophobicity and Hydrophilicity of ionic liquids.

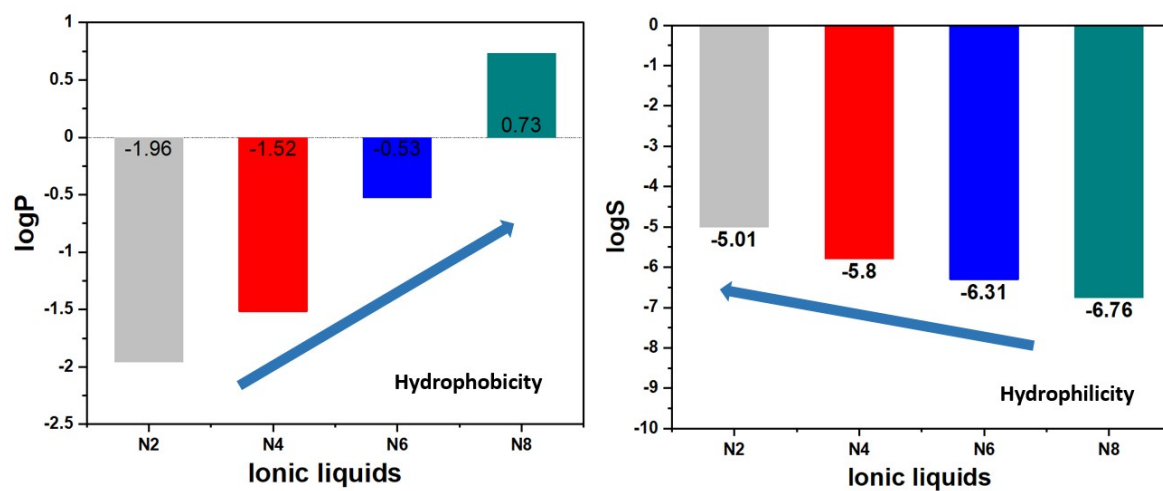
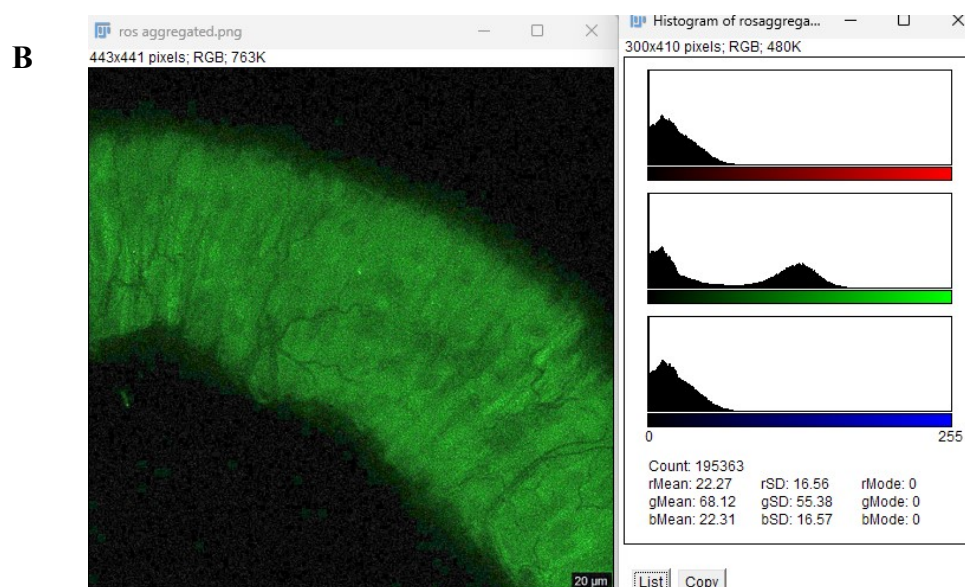
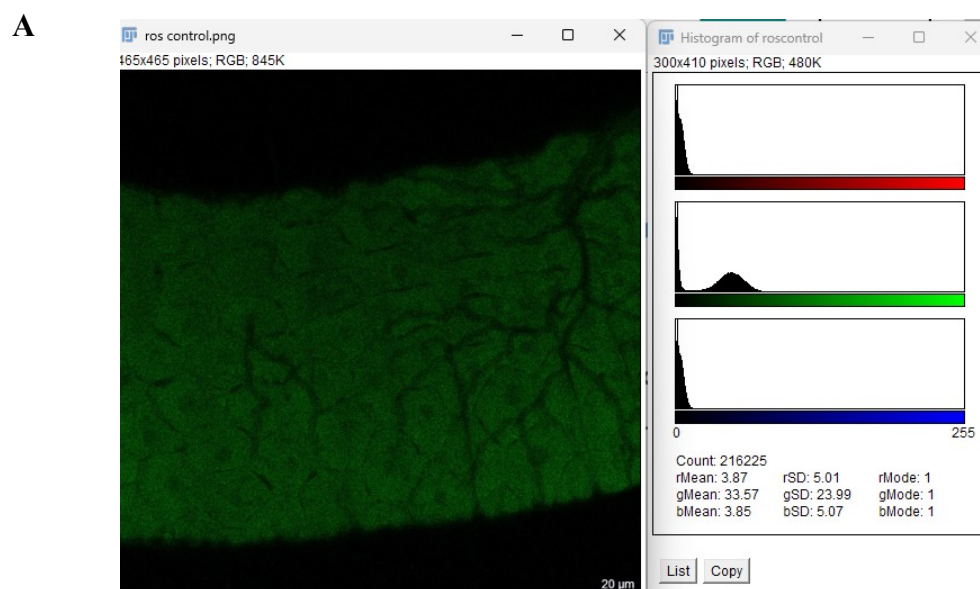
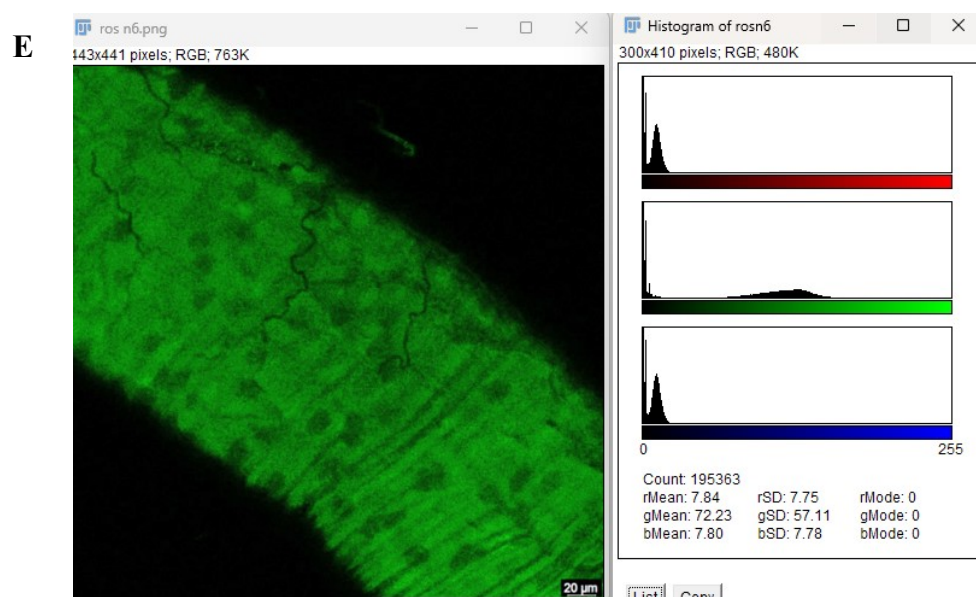
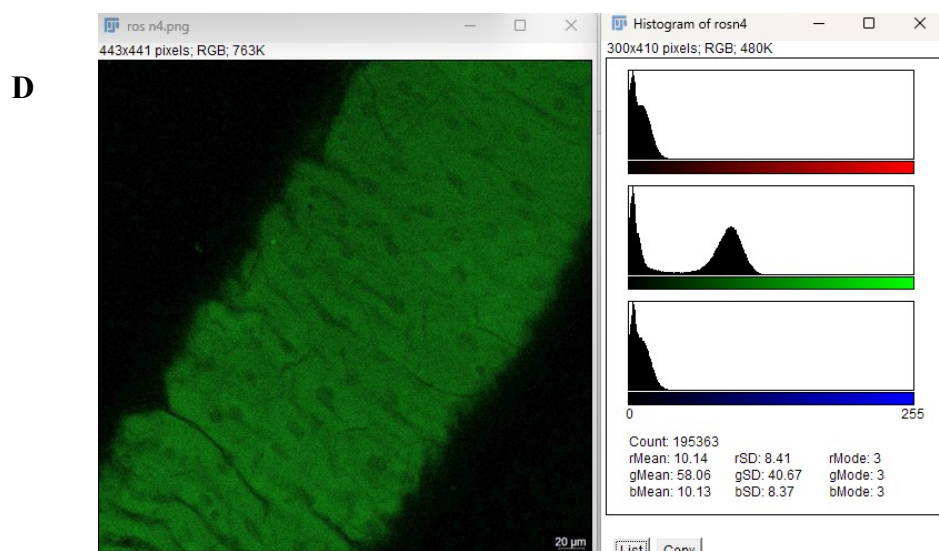
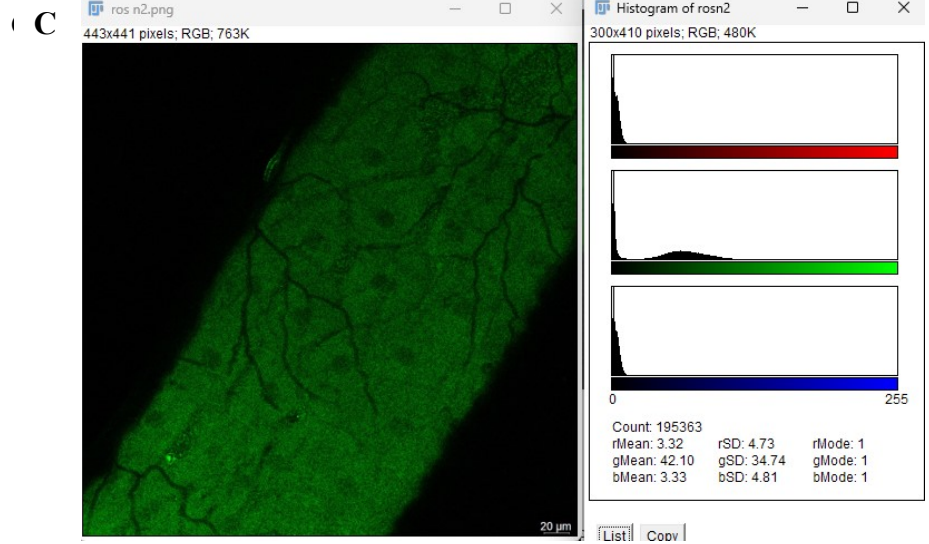


Fig S3. (A) hydrophobicity, (B) hydrophilicity of ionic liquids using ALOGPS 2.1 non Java interface

4. Deconvoluted colour Channels





F.

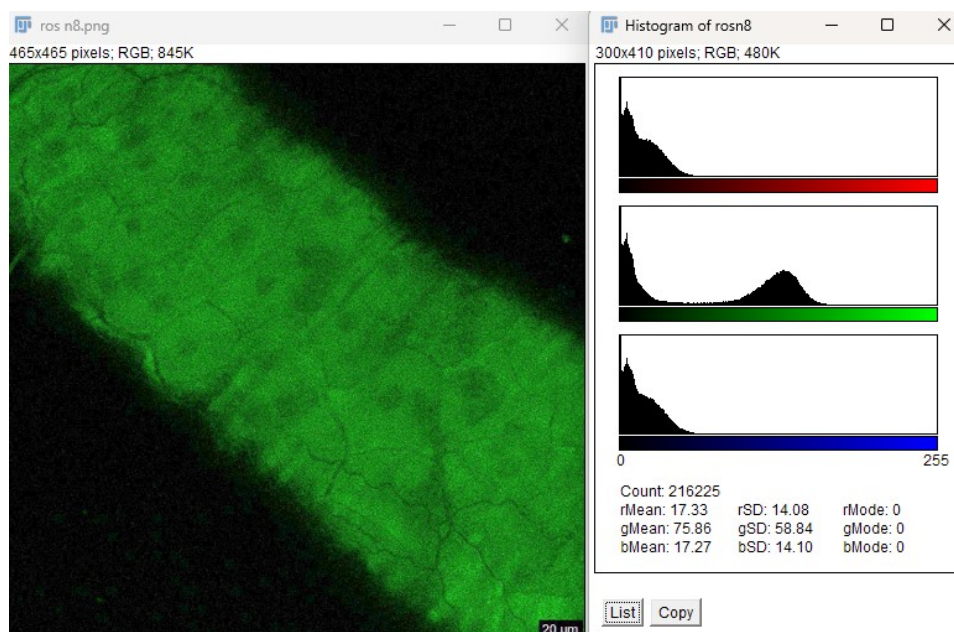


Fig S4. (A) Control, (B) Aggregated, (C) Treated with N2, (D) Treated with N4, (E) Treated with N6, (F) Treated with N8

References:

- Hota, P.R., Behera, D.P., Sahoo, H.J.J.o.M.L., 2024. Interaction between ammonium based ionic liquids and CRABP I Protein: A microenvironmental spectroscopic analysis.
- Konar, M., Sahoo, J.K., Sahoo, H., 2019. Impact of bone extracellular matrix mineral based nanoparticles on structure and stability of purified bone morphogenetic protein 2 (BMP-2). *Journal of Photochemistry and Photobiology B: Biology* 198, 111563.
- Zsila, F., Samsonov, S.A., Maszota-Zieleniak, M., 2020. Mind Your Dye: The Amyloid Sensor Thioflavin T Interacts with Sulfated Glycosaminoglycans Used To Induce Cross- β -Sheet Motifs. *The Journal of Physical Chemistry B* 124(51), 11625-11633.