Supplemental Information for

Chromonic Ionic Liquid Crystals Forming Nematic and Hexagonal Columnar Phases

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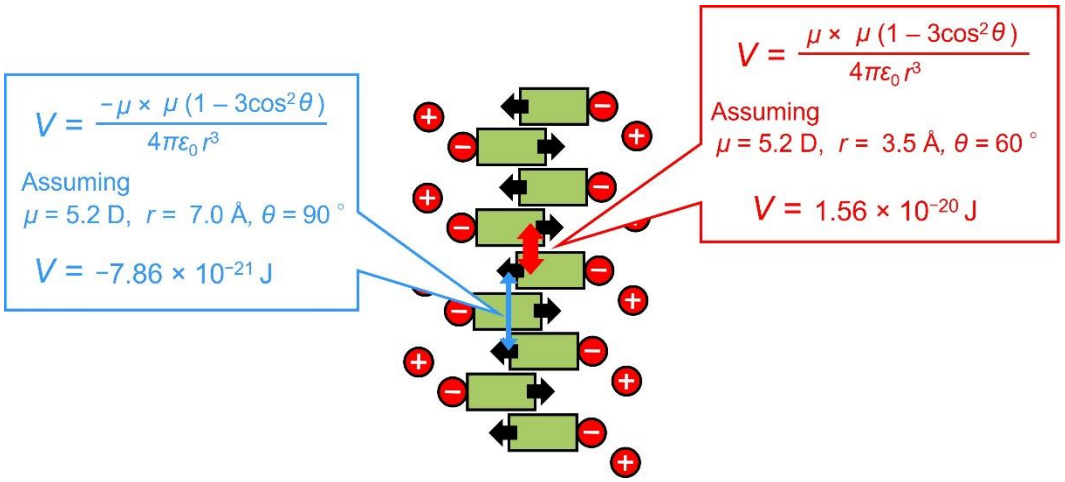

Figure S1. A schematic illustration of the cross section of the columnar structure of the **pQpdS-Ch**/H_2O mixture. Rough calculation of dipole-dipole interactions in the column of the **pQpdS-Ch**/H_2O mixture (X=50) is carried out as below. The number of **pQpdS-Ch** molecules in a 1 mg of the **pQpdS-Ch**/H_2O mixture (X=50) is 4.09×10^{17}. Using these values, the potential energy by the dipole-dipole interaction can be roughly calculated to be 3.2 mJ/mg. This is roughly consistent with the value of 2.2 mJ/mg from the endothermic peak area of the DSC chart on heating.

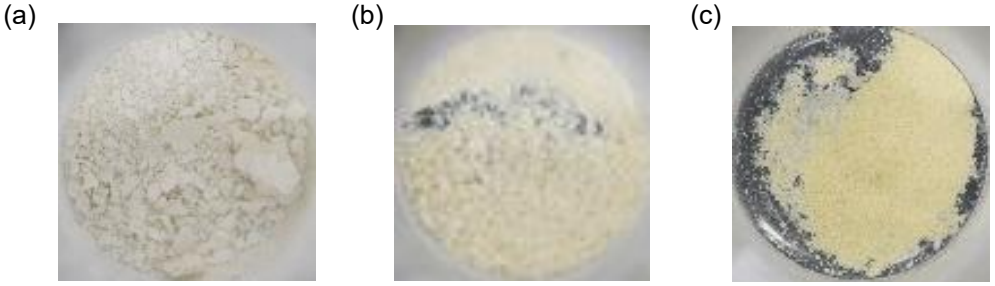

Figure S2. Pictures of: (a) **pQpdS-Ch**; (b) **pQpdS-Li**; and (c) **pQpdS-Na**.

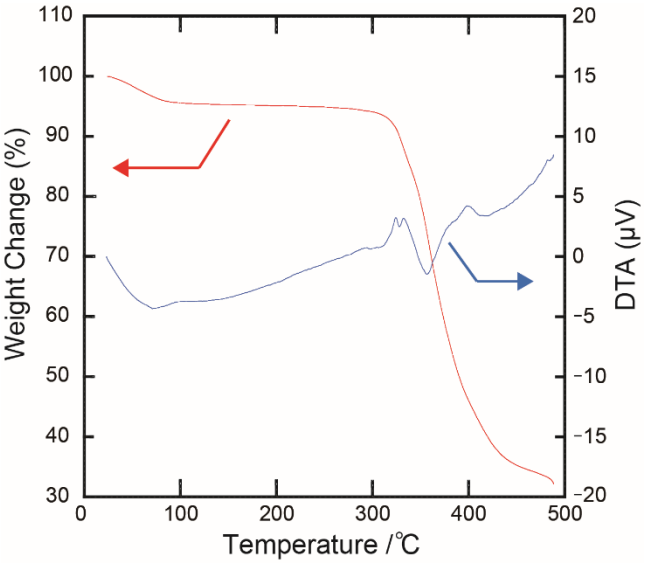

Figure S3. TG-DTA analysis result of **pQpdS-Ch**. It was found that **pQpdS-Ch** shows a thermal decomposition at around 320 °C. Since the thermal decomposition of **pQpdS-Ch** occurs before it melts, it was impossible to determine the melting temperature of **pQpdS-Ch**.