ARTICLE

An insight into thermal stability of DNA in hydrated ionic liquids from multi-wavelengths UV Resonance Raman experiments

Received 00th January 20xx,
Accepted 00th January 20xx

DOI: 10.1039/x0xx00000x

Barbara Rossi,*[a,b] Mariagrazia Tortora[a, c], Sara Catalini[d], Jacopo Vigna[b], Ines Mancini[b], Alessandro Gessini[a], Claudio Masciovecchio[a] and Andrea Mele[e]

Abstract text goes here. The abstract should be a single paragraph that summarises the content of the article

A Supporting information

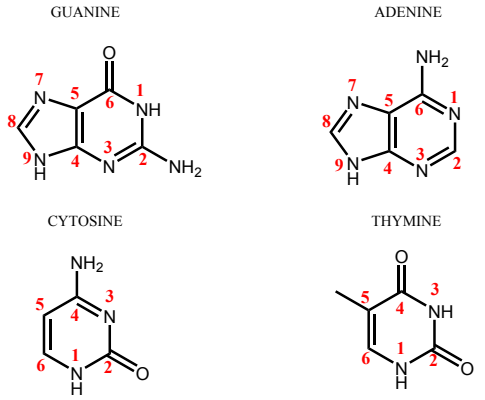

Figure S1: structure and numbering conventions adopted for nucleotides guanine (dG), adenine (dA), cytosine (dC) and thymine (dT).

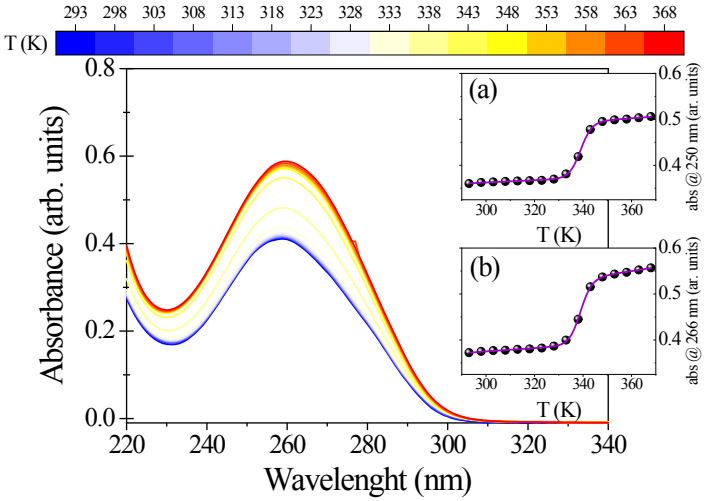

Figure S2: UV absorption spectra of sDNA (0.02 μM in Tris 10 mM pH 7.4) as a function of temperature. Insets: temperature-dependent UV absorbance of sDNA at 250 nm (a) and at 266 nm (b); the continuous violet lines are fitting of the experimental data obtained as described in the text.

[a] Elettra-Sincrotrone Trieste, S.S. 114 km 163.5, Basovizza, 34149, Trieste, Italy
[b] Laboratory of Bioorganic Chemistry, Department of Physics, University of Trento, Via Sommarive, 14 - 38123 Povo Trento, Italy
[c] AREA SCIENCE PARK, Padriciano, 99, 34149 Trieste, Italy
[d] European Laboratory for Non-Linear Spectroscopy, LENS, Via Nello Carrara, 1, 50019, Sesto Fiorentino, Firenze, Italy
[e] Department of Chemistry, Materials and Chemical Engineering ''G. Natta'', Politecnico di Milano, Piazza L. da Vinci 32, 20133, Milano, Italy
* correspond to: barbara.rossi@ettra.eu
Electronic Supplementary Information (ESI) available: [details of any supplementary information available should be included here]. See DOI: 10.1039/x0xx00000x

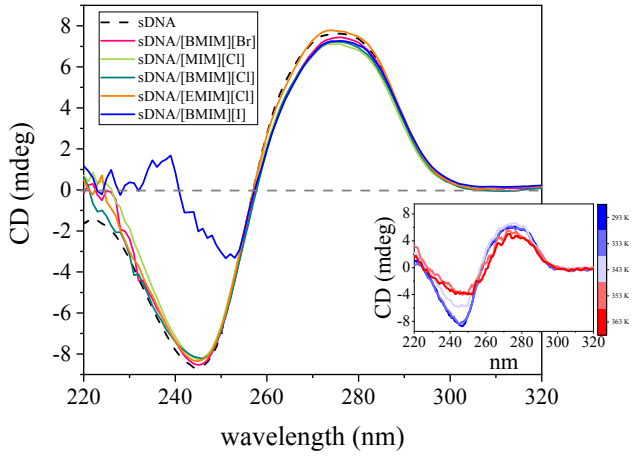

Figure S3: Comparison between Circular Dichroism (CD) spectra of sDNA in absence and presence of ILs measured at room temperature. Inset: CD spectra of sDNA recorded at different temperatures.

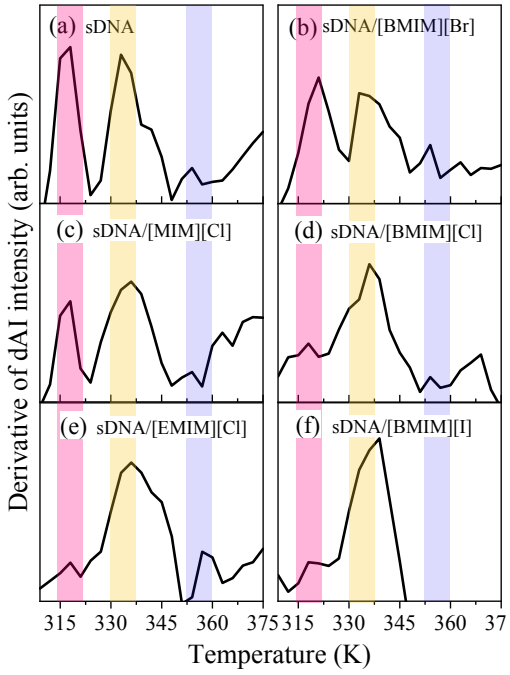

Figure S4: Temperature derivative of the intensity of dAI band for sDNA in TRIS buffer (a) and in hydrated [BMIM][Br] (b) [MIMI][Cl] (c), [BMIM][Cl] (d), [EMIM][Cl] (e) and [BMIM][I] (f) in the temperature range 310-375 K. The magenta, yellow and blue strips mark the maxima corresponding to the structural transitions N ↔ I_1, I_1↔ I_2 and I_2 ↔ D of sDNA, respectively (see text for details).

Table S1: unstacking temperature T_{us} obtained for sDNA in absence and presence of ILs. T_{us} values have been estimated by fitting of the experimental data of Fig 2 with eqn (1).

	T_{us} (K)
sDNA in Tris	341.5 ± 0.5
sDNA/[BMIM]Br	345.0 ± 0.8
sDNA/[BMIM]Cl	343.9 ± 0.9
sDNA/[BMIM]I	335.9 ± 2.8
sDNA/[EMIM]Cl	345.7 ± 0.7
sDNA/[MIM]Cl	347.6 ± 1.0