***C9orf72* hexanucleotide repeat associated with amyotrophic lateral sclerosis and frontotemporal dementia forms RNA G-quadruplexes**

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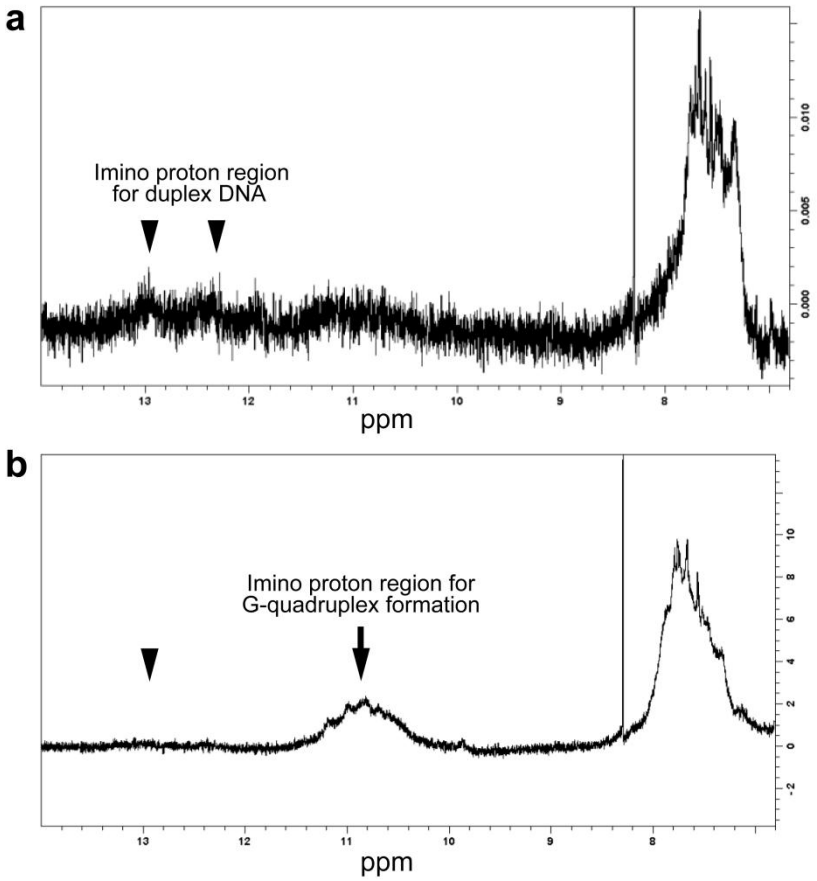
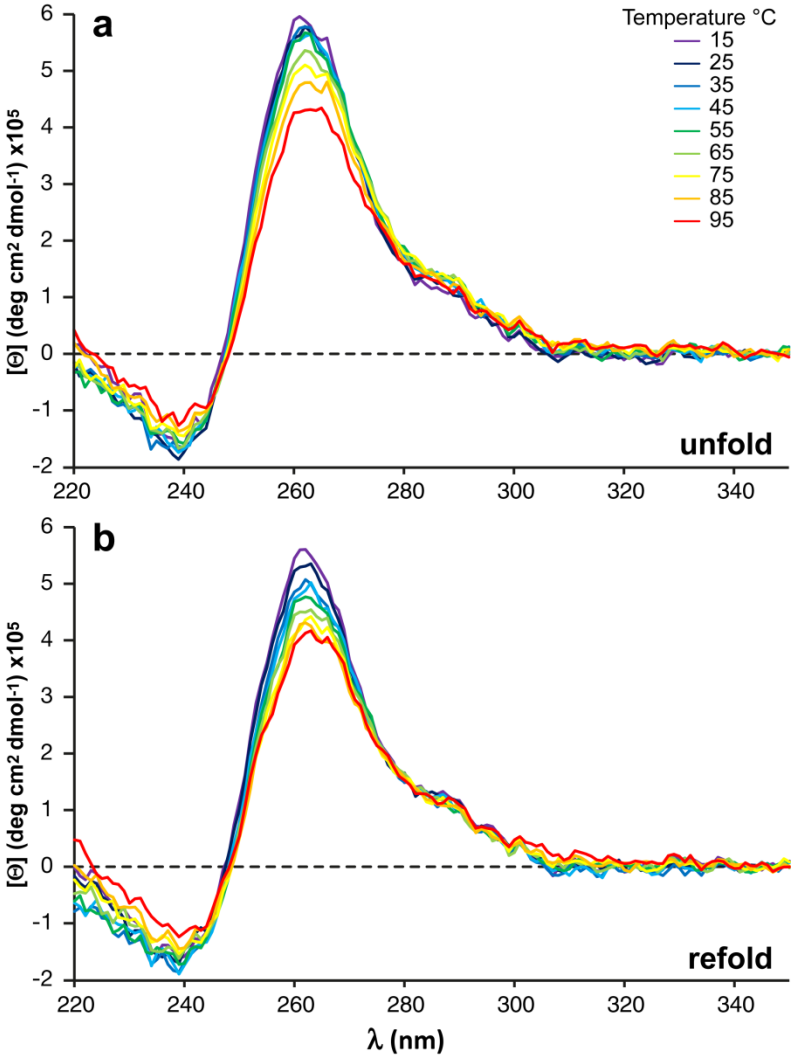
Supplementary information



Supplementary Figure S1 | NMR analysis of the C9Gru oligonucleotide before annealing.

1D proton spectrum of the C9Gru RNA oligonucleotide equilibrated in 40 mM KCl 10 mM potassium phosphate buffer, pH 7.0, 298 K, before annealing. Weak peaks are apparent in the imino proton region indicating Watson-Crick DNA hydrogen bonding (12-13 ppm) (arrowheads), while no peaks are present in the imino proton region for the G-quadruplex formation (10-11.5 ppm). b) Post annealing imino peaks characteristic of G-quadruplex formation (arrows) and lack of imino peaks showing Watson-Crick DNA hydrogen bonding (arrowheads), shown in Fig. 2 of the main manuscript, is shown again for clarity of comparison.



Supplementary Figure S2 | CD analysis of ten-fold dilution of the C9Gru RNA oligonucleotide.

CD spectra obtained by temperature unfolding (a) and refolding (b) of the C9Gru RNA oligonucleotide diluted 10-fold (0.46 µM) in buffer containing 40 mM KCl. The spectrum shows the characteristic maximum (262 nm) and minimum 237 (nm).