

Supporting Information

Immunostimulatory Effects of Guanine-Quadruplex Topologies as Scaffolds for CpG Oligodeoxynucleotides

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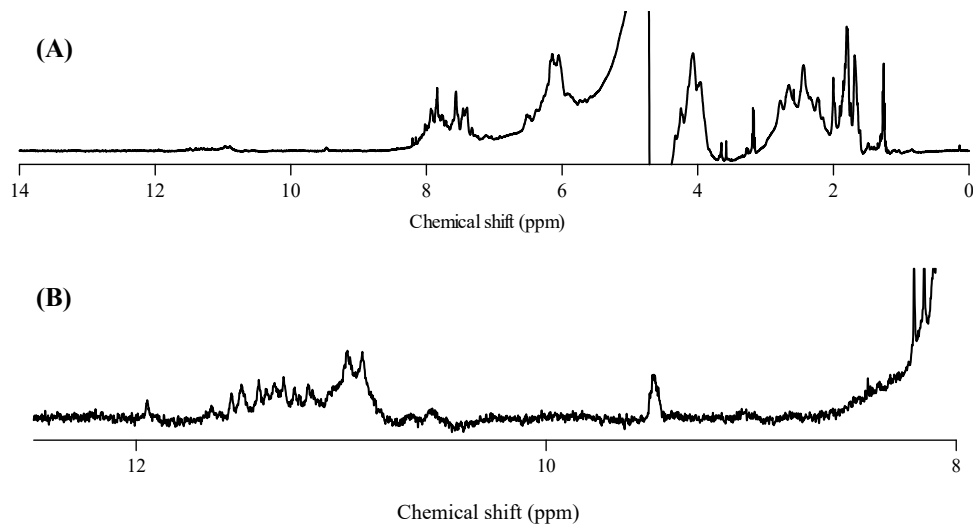
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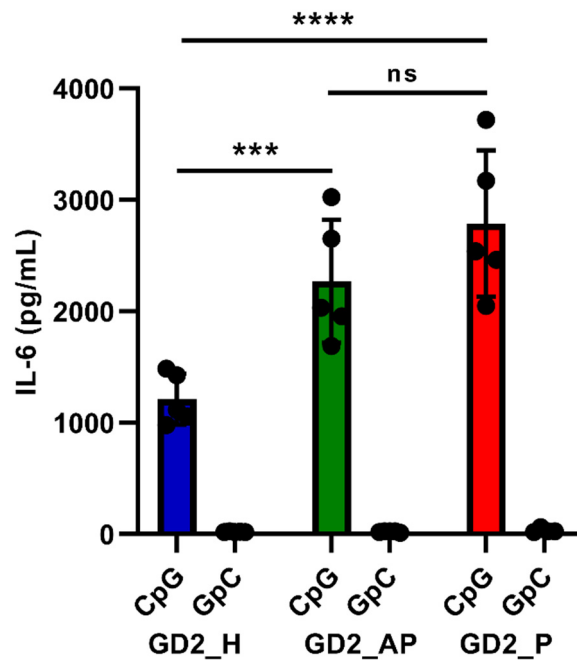
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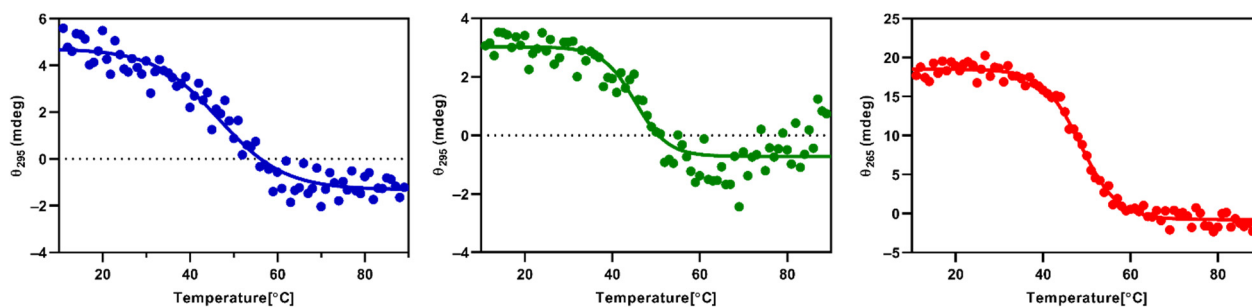
Tomohiko Yamazaki (T.Y.), Email: yamazaki.tomohiko@nims.go.jp



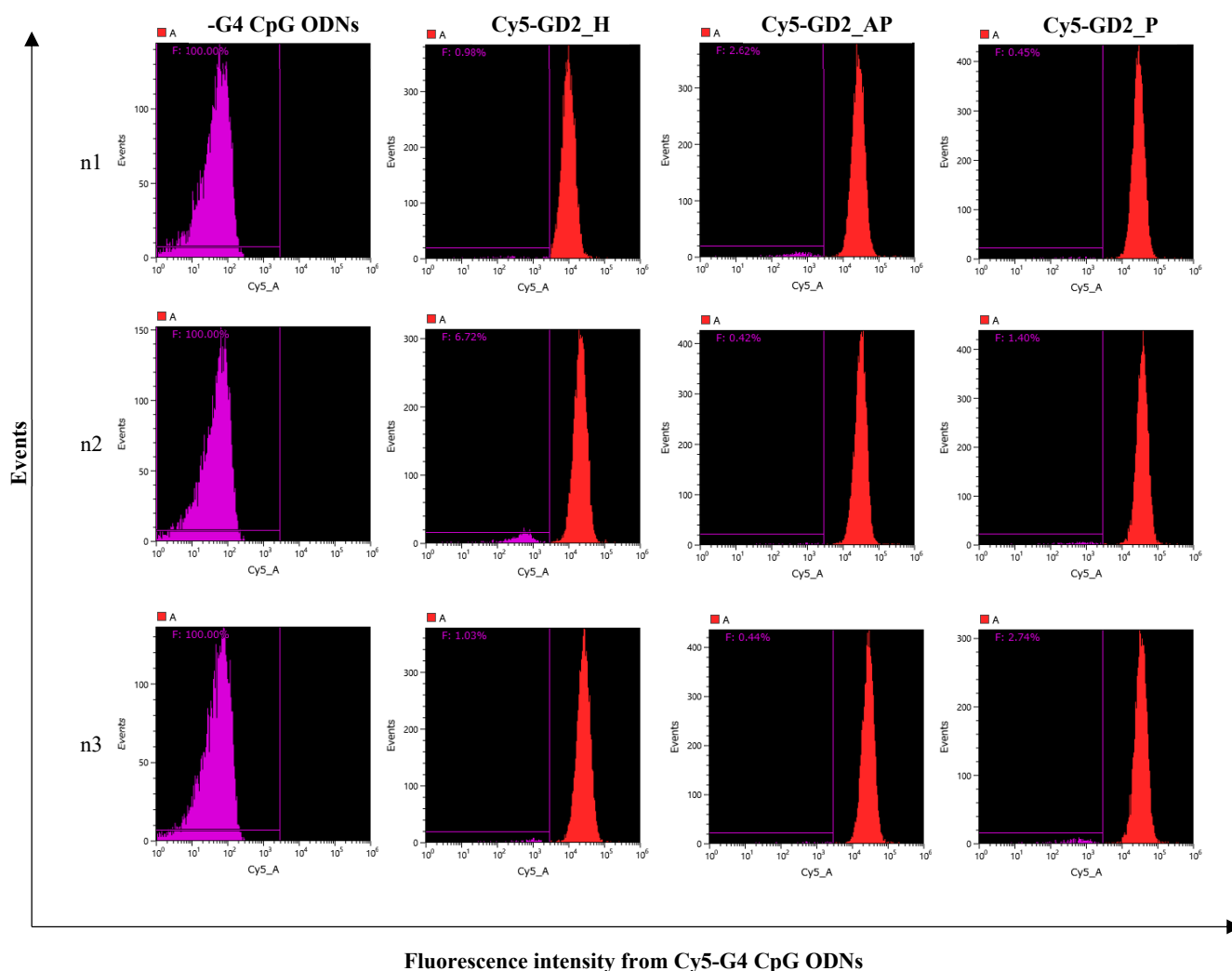
Supplementary Figure S1. ^1H NMR spectra of GD2_P, (A) the full scale and (B) only the imino proton region.



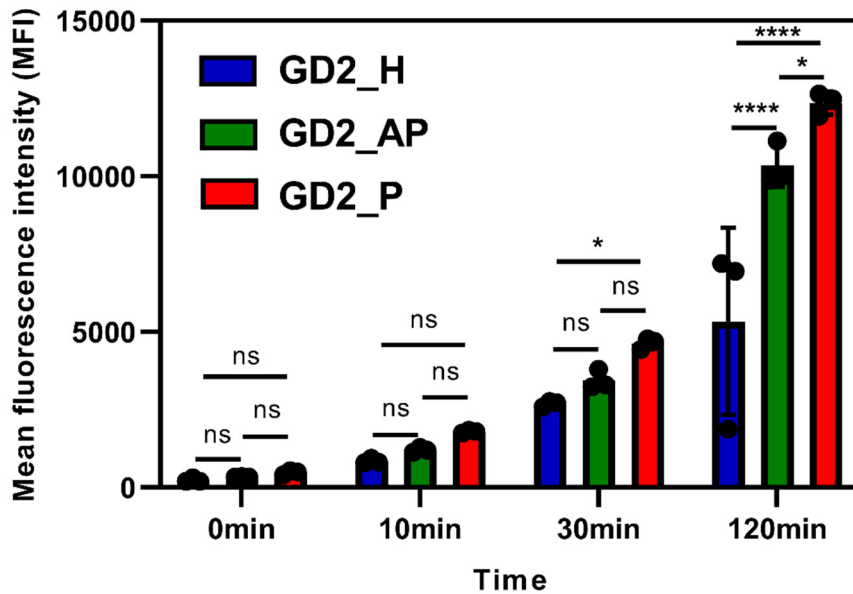
Supplementary Figure S2. A comparison of cytokine induction between G4 CpG ODNs and G4 GpC ODNs after incubating them in mouse macrophage RAW cells for 24h. D-PBS was used as control. In the figure, **** $p < 0.0001$, *** $p < 0.001$ and ^{ns} $p \geq 0.05$ (two-way ANOVA, Tukey's multiple comparisons test for comparison with other groups).



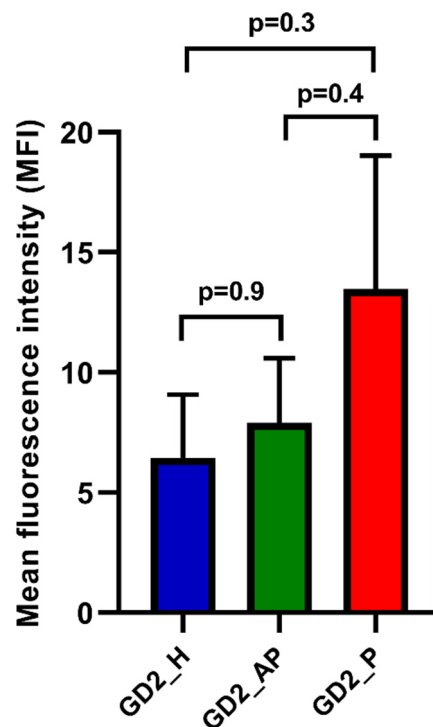
Supplementary Figure S3. Melting curve analysis of G4 CpG ODNs by heating the G4 CpG ODNs from 10°C to 90°C in DPBS buffer. GD2_H and GD2_AP was scanned at 295 nm and GD2_P was scanned at 265 nm.



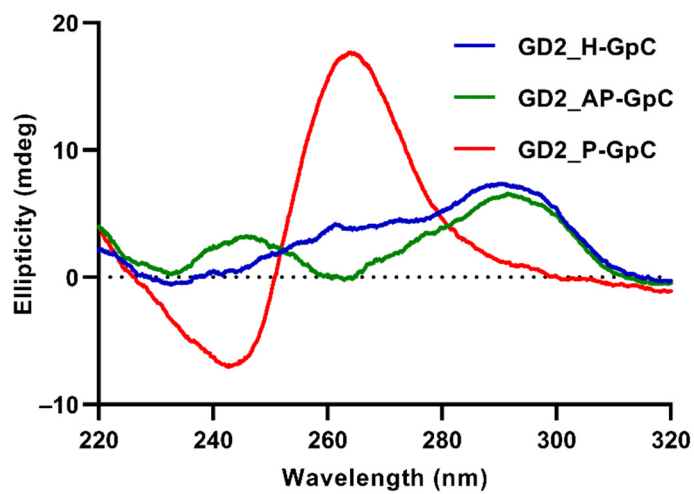
Supplementary Figure S4. Histogram analysis of fluorescence intensity from RAW264 cells treated with Cy5 labeled G4 CpG ODNs.



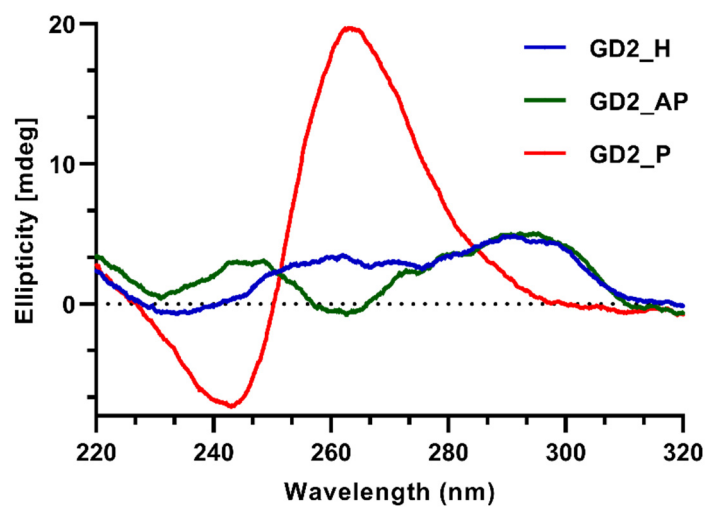
Supplementary Figure S5. Comparison of rate of cellular uptake of Cy5 labeled G4 CpG ODNs by RAW cells after incubating for 2h. Mean fluorescence intensity was measured using flow cytometry. In the figure, **** $p < 0.0001$, * $p < 0.05$ and ^{ns} $p \geq 0.05$ (two-way ANOVA, Tukey's multiple comparisons test for comparison with other groups).



Supplementary Figure S6. Internalization of Cy5 labeled G4 CpG ODNs in RAW cells. The quantification was done using Fiji (ImageJ). In the graph, p values were calculated based on a one-way ANOVA, Tukey's multiple comparisons test for comparison with other groups.



Supplementary Figure S7. Circular dichroism (CD) spectrum of G4 GpC ODNs in DPBS at 25°C.



Supplementary Figure S8. Circular dichroism (CD) spectrum of G4 CpG ODNs in DPBS at 25°C.