Electronic Supplementary Information 10

Non-identical Electronic Characters of the Internucleotidic Phosphates in RNA Modulate the Chemical Reactivity of the Phosphodiester Bonds

Jharna Barman¹, Sandipta Acharya¹, Chuanzheng Zhou¹, Subhrangsu Chatterjee¹, Åke Engström², and Jyoti Chattopadhyaya¹*

¹Department of Bioorganic Chemistry, Box 581, Biomedical Center, Uppsala University, S-751 23 Uppsala, Sweden
²Department of Medical Biochemistry and Microbiology, Box 582, Biomedical Center, Uppsala University, S-751 23 Uppsala, Sweden

jyoti@boc.uu.se

Table of Content:

Figure S15F. Panels (f1) – (f7) show the RP-Hplc and SMART™ RP-Hplc profiles at ½, 2, 3, 4, 8, 15, 27 of alkali digestion of N¹-Me-G containing heptamer . 5'-r(CACG^MeAAC)-3' (7c). p. S2–S14
Figure S15(f1): RP-Hplc analysis of alkaline Hydrolysis products of 5′-r(CACGMeAAC)-3′ (7c) [after digestion for 0.5h at pH 12.5 using 0.03N NaOH/ 20°C, followed by quenching with 0.03 N aq. acetic acid]. For Hplc conditions see the experimental section in the text.
Figure S15(f1): SMART™ RP-Hplc analysis of the alkaline hydrolysis products co-eluted at $R_T = 25.93$ min and $R_T = 26.48$ min in Figure S15(f1) for (7c). Hplc conditions: Jupiter 5 µm C18 300Å column with 150 x 2 mm dimension. Gradient: linear gradient starting from 0% B Buffer (50% CH$_3$CN in 0.1M TEAA) + 100% A Buffer (0.1M TEAA) to 20% B Buffer + 80% A Buffer in 45 minutes. Flow rate: 100 µl min$^{-1}$. 

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**Figure S15(f2):** RP-Hplc analysis of alkaline Hydrolysis products of 5'-r(CACG<sub>Me</sub>AAC)-3' (7c) [after digestion for 2h at pH 12.5 using 0.03N NaOH/ 20°C, followed by quenching with 0.03 N aq. acetic acid]. For Hplc conditions see the experimental section in the text.
Figure S15(f2): SMART™ RP-Hplc analysis of the alkaline hydrolysis products co-eluted at $R_T = 26.05 \text{ min}$ and $R_T = 26.60 \text{ min}$ in Figure S15(f2) for (7c). Hplc conditions: Jupiter 5 µm C18 300Å column with 150 x 2 mm dimension. Gradient: linear gradient starting from 0% B Buffer (50% CH$_3$CN in 0.1M TEAA) + 100% A Buffer (0.1M TEAA) to 20% B Buffer + 80% A Buffer in 45 minutes. Flow rate: 100 µl min$^{-1}$. 

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Figure S15(f3): RP-Hplc analysis of alkaline Hydrolysis products of 5'-r(CACG<sup>Me</sup>AAC)-3' (7c) [after digestion for 3h at pH 12.5 using 0.03N NaOH/ 20°C, followed by quenching with 0.03 N aq. acetic acid]. For Hplc conditions see the experimental section in the text.
Figure S15(f3): SMART™ RP-Hplc analysis of the alkaline hydrolysis products co-eluted at $R_t$ = 26.12 min and $R_t$ = 26.65 min in Figure S15(f3) for (7c). Hplc conditions: Jupiter 5 µm C18 300Å column with 150 x 2 mm dimension. Gradient: linear gradient starting from 0% B Buffer (50% CH$_3$CN in 0.1M TEAA) + 100% A Buffer (0.1M TEAA) to 20% B Buffer + 80% A Buffer in 45 minutes. Flow rate: 100 µl min$^{-1}$. 

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Figure S15(f4): RP-Hplc analysis of alkaline Hydrolysis products of 5'-r(CACG\textsuperscript{Me}AAC)-3' (7c) [after digestion for 4h at pH 12.5 using 0.03N NaOH/ 20°C, followed by quenching with 0.03 N aq. acetic acid]. For Hplc conditions see the experimental section in the text.
Figure S15(f4): SMART™ RP-Hplc analysis of the alkaline hydrolysis products co-eluted at $R_T = 26.05$ min and $R_T = 26.56$ min in Figure S15(f4) for (7c). Hplc conditions: Jupiter 5 µm C18 300Å column with 150 x 2 mm dimension. Gradient: linear gradient starting from 0% B Buffer (50% CH$_3$CN in 0.1M TEAA) + 100% A Buffer (0.1M TEAA) to 20% B Buffer + 80% A Buffer in 45 minutes. Flow rate: 100 µl min$^{-1}$.
Figure S15(f5): RP-Hplc analysis of alkaline Hydrolysis products of 5'-(r(CACG<sup>Me</sup>AAC))-3' (7b) [after digestion for 8h at pH 12.5 using 0.03N NaOH/ 20°C, followed by quenching with 0.03 N aq. acetic acid]. For Hplc conditions see the experimental section in the text.
Figure S15(f5): SMART™ RP-Hplc analysis of the alkaline hydrolysis products co-eluted at $R_T=26.07 \text{ min}$ and $R_T=26.55 \text{ min}$ in Figure S15(f5) for (7c). Hplc conditions: Jupiter 5 μm C18 300Å column with 150 x 2 mm dimension. Gradient: linear gradient starting from 0% B Buffer (50% CH$_3$CN in 0.1M TEAA) + 100% A Buffer (0.1M TEAA) to 20% B Buffer + 80% A Buffer in 45 minutes. Flow rate: 100 μl min$^{-1}$. 

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Figure S15(f6): RP-Hplc analysis of alkaline Hydrolysis products of 5'-r(CACG<sub>Me</sub>AAC)-3' (7c) [after digestion for 15h at pH 12.5 using 0.03N NaOH/ 20°C, followed by quenching with 0.03 N aq. acetic acid]. For Hplc conditions see the experimental section in the text.
Figure S15(f6): SMART™ RP-Hplc analysis of the alkaline hydrolysis products co-eluted at $R_T = 26.09$ min and $R_T = 26.53$ min in Figure S15(f6) for (7c). Hplc conditions: Jupiter 5 µm C18 300Å column with 150 x 2 mm dimension. Gradient: linear gradient starting from 0% B Buffer (50% CH$_3$CN in 0.1M TEAA) + 100% A Buffer (0.1M TEAA) to 20% B Buffer + 80% A Buffer in 45 minutes. Flow rate: 100 µl min$^{-1}$.
Figure S15(f7): RP-Hplc analysis of alkaline Hydrolysis products of 5′-r(CACG<sup>Mc</sup>AAC)-3′ (7c) [after digestion for 27h at pH 12.5 using 0.03N NaOH/ 20°C, followed by quenching with 0.03 N aq. acetic acid]. For Hplc conditions see the experimental section in the text.