Electronic Supplementary Information 5

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

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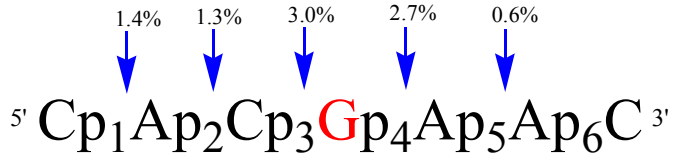
Figure S14: An example of the calculation considering the extinction co-efficients for heptamer**7b**

The picture below shows the percentage cleavage of all products separated by both RP-Hplc and SMART™ RP-Hplc analysis and subsequent indentification of the components by Maldi Tof mass spectral analysis for the heptamer 7b (after 1 h alkaline degradation at 20ºC).



Now, the molar extinction coefficient, ε, for the heptamer 7b is 68.5 x 10^3 L/(mole·cm).

(1) Molar extinction coefficient, ε, for 5′-ACGAAC-3′ is 62.9 x 10^3 L/(mole·cm). Therefore the value 1.4% is corrected by the multiplication factor of $\varepsilon_{(7mer)}/\ \varepsilon_{(6mer)}$ =1.089. The corrected value for the % cleavage at $C_{P1}A$ is 1.5% instead of 1.4%.

(2) Molar extinction coefficient, ε, for 5′-CGAAC-3′ is 49.1 x 10^3 L/(mole·cm). Therefore the value 1.3% is corrected by the multiplication factor of $\varepsilon_{(7mer)}/\ \varepsilon_{(5mer)}$ =1.395. The corrected value for the % cleavage at $A_{P2}C$ is 1.8% instead of 1.3%.

(3) Molar extinction coefficient, ε, for 5′-GAAC-3′ is 42.8 x 10^3 L/(mole·cm). Therefore the value 3.0% is corrected by the multiplication factor of $\varepsilon_{(7mer)}/\ \varepsilon_{(4mer)}$ =1.600. The corrected value for the % cleavage at $C_{P3}G$ is 4.8% instead of 3.0%.

(4) Molar extinction coefficient, ε, for 5'-$CACG_{(2'/3'\text{-}P)/2',\ 3'\text{-}cMP}$ is 37.2 x 10^3 L/(mole·cm). Therefore the value 2.7% is corrected by the multiplication factor of $\varepsilon_{(7mer)}/\ \varepsilon_{(5mer)}$ =1.841. The corrected value for the % cleavage at $G_{P4}A$ is 5.0% instead of 2.7%.

(5) Molar extinction coefficient, ε, for 5'-$CACGA_{(2'/3'\text{-}P)/2',\ 3'\text{-}cMP}$ is 50.9 x 10^3 L/(mole·cm). Therefore the value 1.3% is corrected by the multiplication factor of $\varepsilon_{(7mer)}/\ \varepsilon_{(5mer)}$ =1.346. The corrected value for the % cleavage at $A_{P5}A$ is 0.8% instead of 0.6%.

Hence the final percentage cleavage for the heptamer 7b is as follows, which is used in Figure 4 in the text:

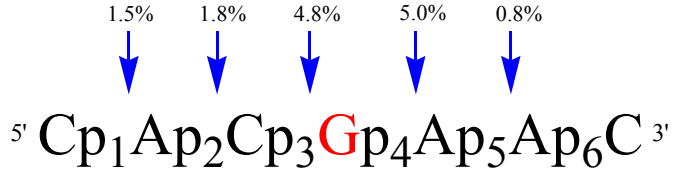


Table S9(A):
RNA Sequence: 5′-r(CAAGAAC)-3′
Maldi Tof (Negative ion mode) mass analysis of the degradation products (separated by RP-Hplc analysis) after 1h alkali digestion [Condition: pH 12.5 (0.03N aqueous NaOH) / 20°C, followed by neutralization at pH 7 (see experimentals)]. For Hplc separation profile, see Fig S12(a2), Fig S12(a2i)-(a2j). For mass spectrum, see Fig S13(a1)-(a8).

RP-Hplc Retention Time (R_T in min)#	SMART™ RP-Hplc Retention Time (R_T in min)*	Mass (m/z)		Nucleotide fragment (5′→3′)
		Observed	Expected	
21.52		962.2	963.2	HO-$CAA_{2'/3'\text{-}P}$-OH
23.86	34.74	1245.3	1246.2	HO-GAAC-OH
	34.07	1307.3	1308.2	HO-$CAAG_{(2',3'\text{-}cMP)}$
25.44	27.93	15.74.4	1575.3	HO-AGAAC-OH
	27.12	1636.3	1637.3	HO-$CAAGA_{(2',3'\text{-}cMP)}$
26.21¥		900.2	901.2	HO-AAC-OH
		2208.3	2209.4	Heptamer
27.10		1903.3	1904.3	HO-AAGAAC-OH

RP-Hplc retention times shown represent the first round of Hplc separation, which although showed single peak at times but they were in fact a mixture of constituent oligonucleotides as a result of co-elution as evident by Maldi Tof mass spectrometry.

*SMART™ RP-Hplc retention times shown represent the separation of the constituent oligonucleotides which did not separate by the first round of RP-Hplc sepration.

¥Smaller molecular weight species was found to form from the larger molecular weight species, which was proven by the fact that when the strength of the laser energy was reduced in the Maldi Tof spectrometry, the daughter ion disappeared.

Table S9(B):

RNA Sequence: 5′-r(CAAGCAC)-3′

Maldi Tof (Negative ion mode) mass analysis of the degradation products (separated by Hplc analysis) after 1h alkali digestion [Condition: pH 12.5 (0.03N aqueous NaOH) / 20°C, followed by neutralization at pH 7 (see experimentals)]. For Hplc separation profile, see Fig S12(b2) and Fig S12(b2i)-(b2j). For Mass spectrum, see Fig S13(b1)-(b10).

RP-Hplc Retention Time (R_T in min)#	SMART™ RP-Hplc Retention Time (R_T in min)*	Mass (m/z)		Nucleotide fragment (5′→3′)
		Observed	Expected	
19.87		876.1	877.2	HO-CAC-OH
21.04	22.16 20.68	980.1 1221.3	981.2 1222.2	OH-$CAA_{2'/3'\text{-}P}$-OH OH-GCAC-OH
21.77		962.1	963.2	HO-$CAA_{(2',3'\text{-}cMP)}$
22.76		1325.3	1326.2	HO-$CAAG_{2'/3'\text{-}P}$-OH
24.05	29.33 30.12	1307.3 1612.4	1308.2 1613.2	HO-$CAAG_{(2',3'\text{-}cMP)}$ HO-$CAAGC_{(2',3'\text{-}cMP)}$
25.27		2184.7	2185.4	Heptamer
~25.50		1550.4 2184.6	1551.3 2185.4	OH-AGCAC-OH Heptamer
27.31		1879.5	1880.3	HO-AAGCAC-OH

RP-Hplc retention times shown represent the first round of Hplc separation, which although showed single peak at times but they were in fact a mixture of constituent oligonucleotides as a result of co-elution as evident by Maldi Tof mass spectrometry.

*SMART™ RP-Hplc retention times shown represent the separation of the constituent oligonucleotides which did not separate by the first round of RP-Hplc sepration.

Table S9(C):
RNA Sequence: 5′-r(CACGAAC)-3′
Maldi Tof (Negative ion mode) mass analysis of the degradation products (separated by Hplc analysis) after 1h alkali digestion [Condition: pH 12.5 (0.03N aqueous NaOH) / 20°C, followed by neutralization at pH 7 (see experimentals)]. For Hplc separation profile, see Fig S12(c2) and Fig S13(c2i)-(c2j). For Mass spectrum, see Fig S13(c1)-(c8).

RP-Hplc Retention Time (R_T in min)#	SMART™ RP-Hplc Retention Time (R_T in min)*	Mass (m/z)		Nucleotide fragment (5′→3′)
		Observed	Expected	
23.18		1550.2	1551.3	HO-CGAAC-OH
24.97	31.48	1245.1	1246.2	HO-GAAC-OH
	30.27	1283.1	1284.2	HO-CACG$_{(2',3'\text{-cMP})}$
26.50	31.49	1879.2	1880.3	HO-ACGAAC-OH
	30.97	1612.2	1613.2	HO-CACGA$_{(2',3'\text{-cMP})}$
27.36¥		900.0	901.2	HO-AAC-OH
		2184.2	2185.4	Heptamer
28.06		1879.1	1880.3	HO-ACGAAC-OH

RP-Hplc retention times shown represent the first round of Hplc separation, which although showed single peak at times but they were in fact a mixture of constituent oligonucleotides as a result of co-elution as evident by Maldi Tof mass spectrometry.

*SMART™ RP-Hplc retention times shown represent the separation of the constituent oligonucleotides which did not separate by the first round of RP-Hplc sepration.

¥Smaller molecular weight species was found to form from the larger molecular weight species, which was proven by the fact that when the strength of the laser energy was reduced in the Maldi Tof spectrometry, the daughter ion disappeared.

Table S9 (D):
RNA Sequence: 5′-r(CACGCAC)-3′
Maldi Tof (Negative ion mode) mass analysis of the degradation products (separated by Hplc analysis) after 1h alkali digestion [Condition: pH 12.5 (0.03N aqueous NaOH) / 20°C, followed by neutralization at pH 7 (see experimentals)]. For Hplc separation profile, see Fig S12(d2) and Fig S13(d2i)-(d2l). For Mass spectrum, see Fig S13(d1)-(d12).

RP-Hplc Retention Time (R_T in min)#	SMART™ RP-Hplc Retention Time (R_T in min)*	Mass (m/z)		Nucleotide fragment (5′→3′)
		Observed	Expected	
19.98	18.10	876.2	877.2	HO-CAC-OH
	18.55	938.0	939.1	OH-CAC$_{(2', 3'\text{-cM.P})}$
21.23	20.58	1221.2	1222.2	OH-GCAC-OH
	21.15	1526.1	1527.3	OH-CGCAC-OH
24.14	21.79	1283.2	1284.2	HO-CACG$_{(2', 3'\text{-cMP})}$
	23.04	1588.2	1589.2	HO-CACGC$_{(2', 3'\text{-cMP})}$
	26.20	2160.2	2161.4	Heptamer
25.39	14.11	1855.1	1856.3	HO-ACGCAC-OH
	14.75	2160.1	2161.4	Heptamer

RP-Hplc retention times shown represent the first round of Hplc separation, which although showed single peak at times but they were in fact a mixture of constituent oligonucleotides as a result of co-elution as evident by Maldi Tof mass spectrometry.

*SMART™ RP-Hplc retention times shown represent the separation of the constituent oligonucleotides which did not separate by the first round of RP-Hplc sepration.

Table S9(E):
RNA Sequence: 5′-r(CAAG^{Me}AAC)-3′
Maldi Tof (Negative ion mode) mass analysis of the degradation products (separated by RP-Hplc analysis) after 1h alkali digestion [Condition: pH 12.5 (0.03N aqueous NaOH) / 20°C, followed by neutralization at pH 7 (see experimentals)]. For Hplc separation profile, see Fig S12(e2), Fig S12(e2i)-(e2j). For mass spectrum, see Fig S12(e1)-(e11).

RP-Hplc Retention Time (R_T in min)#	SMART™ RP-Hplc Retention Time (R_T in min)*	Mass (m/z)		Nucleotide fragment (5′→3′)
		Observed	Expected	
20.39, 20.47		980.1	981.2	HO-CAA$_{2'/3'\text{-P}}$-OH
21.36		962.1	963.1	HO-CAA$_{2',3'\text{-cMP}}$
22.89		1339.2	1340.2	HO-CAAG$^{Me}{}_{2'/3'\text{-P}}$-OH
23.37		1321.2	1322.2	HO-CAAG$^{Me}{}_{2',3'\text{-cMP}}$
25.50	29.41 30.08	1668.2 1997.2	1669.3 1998.3	HO-CAAG^{Me}A$_{2'/3'\text{-P}}$-OH HO-CAAG^{Me}AA$_{2'/3'\text{-P}}$-OH
25.70	27.71 29.24	1259.2 1650.2	1260.2 1651.2	HO-G^{Me}AAC-OH HO-CAAG^{Me}A$_{2',3'\text{-cMP}}$
26.16		2222.2	2223.4	Heptamer
26.91		1588.2	1589.3	HO-AG^{Me}AAC-OH
28.45		1917.2	1918.3	HO-AAG^{Me}AAC-OH

RP-Hplc retention times shown represent the first round of Hplc separation, which although showed single peak at times but they were in fact a mixture of constituent oligonucleotides as a result of co-elution as evident by Maldi Tof mass spectrometry.

*SMART™ RP-Hplc retention times shown represent the separation of the constituent oligonucleotides which did not separate by the first round of RP-Hplc sepration.

Table S9(F):
RNA Sequence: 5′-r(CACG^{Me}AAC)-3′
Maldi Tof (Negative ion mode) mass analysis of the degradation products (separated by Hplc analysis) after 1h alkali digestion [Condition: pH 12.5 (0.03N aqueous NaOH) / 20°C, followed by neutralization at pH 7 (see experimentals)]. For Hplc separation profile, see Fig S12(f2) and Fig S12(f2i). For Mass spectrum, see Fig S12(f1)-(f10).

RP-Hplc Retention Time (R_T in min)#	SMART™ RP-Hplc Retention Time (R_T in min)*	Mass (m/z)		Nucleotide fragment (5′→3′)
		Observed	Expected	
19.68		938.2	939.1	HO-CAC$_{2',3'\text{-cMP}}$
21.81		958.2[$]	958.1	HO-CAC$_{2'/3'\text{-P}}$-OH
22.89		1297.3	1298.2	HO-CACG$^{Me}_{2',3'\text{-cMP}}$
23.85		1564.3	1565.3	HO-CG^{Me}AAC-OH
24.77		1626.3	1627.2	HO-CACG^{Me}A$_{2',3'\text{-cMP}}$
25.93[$]	25.15	902.3[§]	901.2	HO-AAC-OH
26.49[$]	26.15	902.2[§]	901.2	HO-AAC-OH
	27.71	1259.2	1260.2	HO-G^{Me}AAC-OH
	29.00	1893.4	1894.3	HO-ACG^{Me}AAC-OH
	29.91	2198.4	2199.4	Heptamer

RP-Hplc retention times shown represent the first round of Hplc separation, which although showed single peak at times but they were in fact a mixture of constituent oligonucleotides as a result of co-elution as evident by Maldi Tof mass spectrometry.

* SMART™ RP-Hplc retention times shown represent the separation of the constituent oligonucleotides which did not separate by the first round of RP-Hplc sepration.

[$] Peaks at RT = 25.93' and RT = 26.49' were mixed together and further separated by SMART™ RP-Hplc as they were not completely separated by RP-Hplc.

[§] Mass values obtained in these cases were recorded in positive mode as they were not so clearly seen in negative mode.

Table S9 (G):

RNA Sequence: 5′-r(CACG^{Me}CAC)-3′

Maldi Tof (Negative ion mode) mass analysis of the degradation products (separated by Hplc analysis) after 1h alkali digestion [Condition: pH 12.5 (0.03N aqueous NaOH) / 20°C, followed by neutralization at pH 7 (see experimentals)]. For Hplc separation profile, see Fig S12(g2) and Fig S12(g2i)-(g2j). For Mass spectrum, see Fig S12(g1)-(g8).

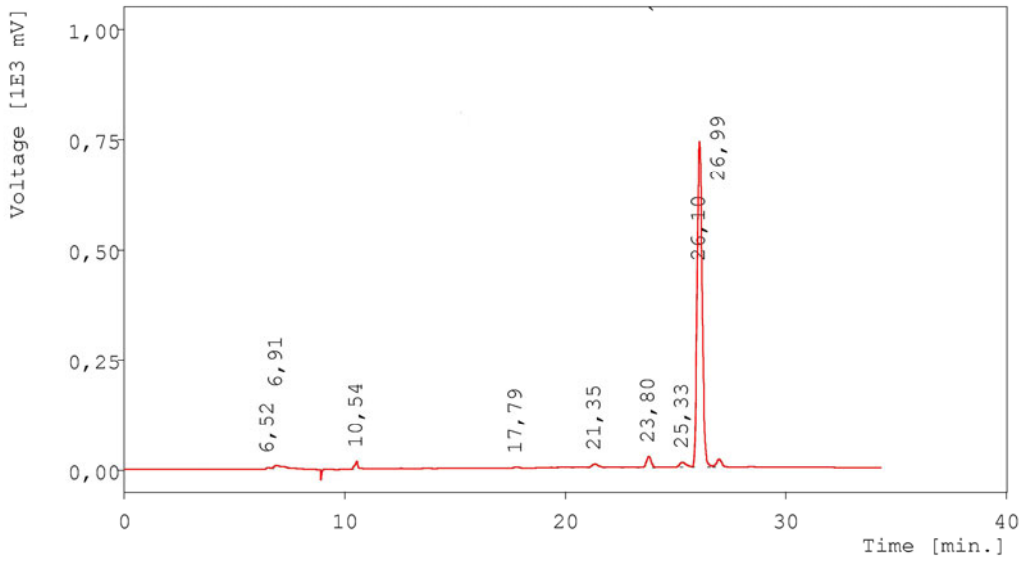
RP-Hplc Retention Time (R_T in min)#	SMART™ RP-Hplc Retention Time (R_T in min)*	Mass (m/z)		Nucleotide fragment (5′→3′)
		Observed	Expected	
19.68	20.09	876.1	877.1	HO-CAC-OH
	20.80	938.1	939.1	OH-CAC$_{(2', 3'\text{-cM.P})}$
22.55		1540.2	1541.3	HO-CG^{Me}CAC-OH
23.15	26.73	1235.2§	1236.2	HO-G^{Me}CAC-OH
		1297.2§	1298.2	HO-CACG$^{Me}{}_{2', 3'\text{-cMP}}$
	27.76	1602.3	1603.2	HO-CACG^{Me}C$_{2', 3'\text{-cMP}}$
24.87		2174.2	2175.4	Heptamer
25.82		1869.3	1870.3	HO-ACG^{Me}CAC-OH

RP-Hplc retention times shown represent the first round of Hplc separation, which although showed single peak at times but they were in fact a mixture of constituent oligonucleotides as a result of co-elution as evident by Maldi Tof mass spectrometry.

* SMART™ RP-Hplc retention times shown represent the separation of the constituent oligonucleotides which did not separate by the first round of RP-Hplc sepration.

§ These two fragments were not separated in the SMART™ RP-Hplc, but could be assigned by careful fraction collection.

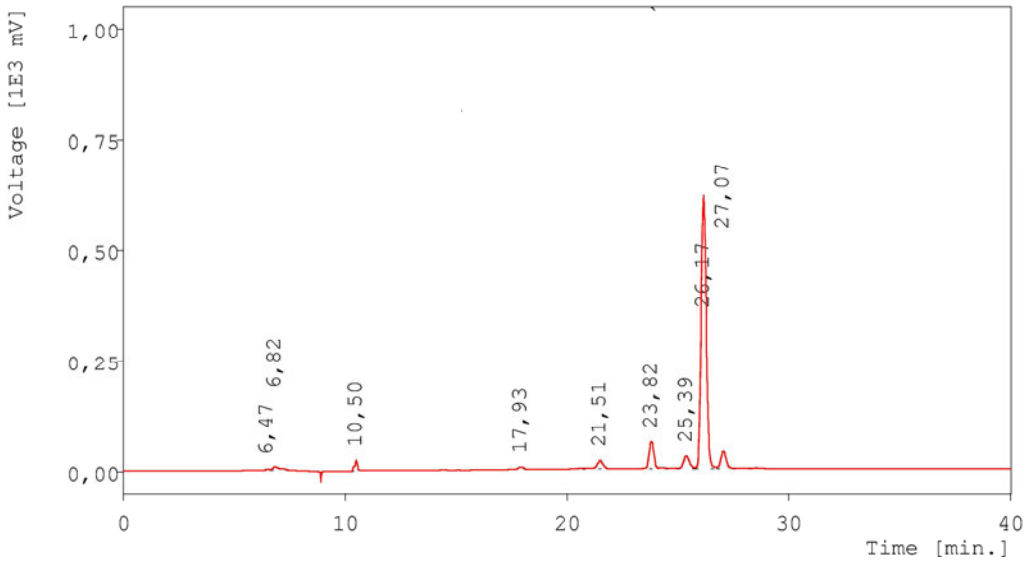
Figure S15



Result Table - Calculation Method Uncal

Peak No.	Reten. time	Area [mV.s]	Height [mV]	W05 [min.]	Area [%]	Height [%]
1	6,520	37,7321	3,513	0,193	0,277	0,422
2	6,907	238,1128	7,598	0,600	1,749	0,912
3	10,540	197,4952	18,350	0,140	1,450	2,202
4	17,793	46,4480	2,767	0,280	0,341	0,332
5	21,353	403,4867	8,231	0,333	2,963	0,988
6	23,800	424,7706	24,508	0,240	3,119	2,942
7	25,327	254,5428	11,184	0,340	1,869	1,342
8	26,100	11705,0551	739,231	0,253	85,959	88,727
9	26,987	309,3050	17,767	0,260	2,273	2,133
-	Total	13616,9484	833,149			

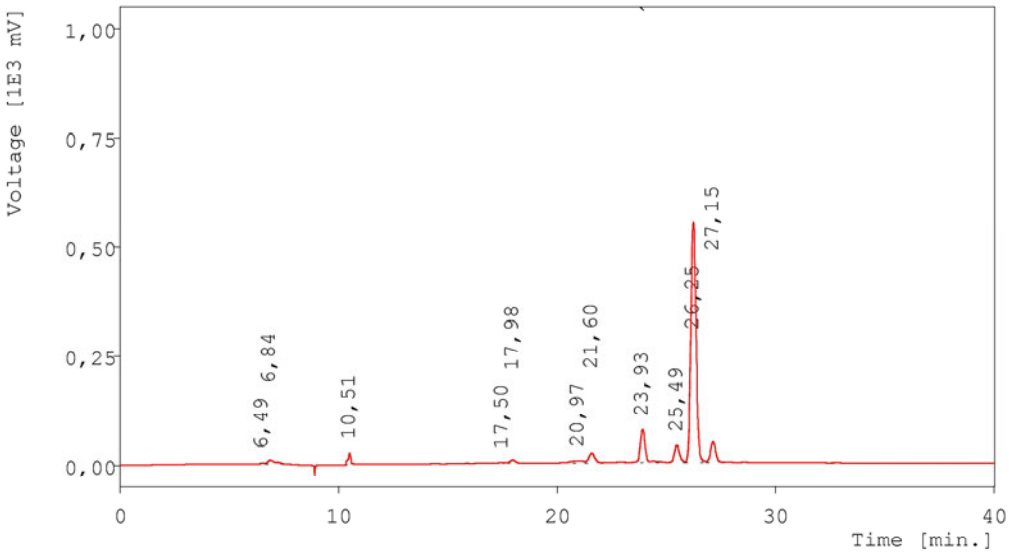
Figure S15(a1): Hplc analysis of alkaline Hydrolysis products of **5′-r(CAAGAAC)-3′ (5b)** [after digestion for **0.5h** at pH 12.5 using 0.03N NaOH/ 20°C, followed by quenching with 0.03 N aq. acetic acid]. For Hplc conditions see the experimental section in the text.



Result Table - Calculation Method Uncal

Peak No.	Reten. time	Area [mV.s]	Height [mV]	W05 [min.]	Area [%]	Height [%]
1	6,467	36,3770	3,313	0,207	0,271	0,411
2	6,820	221,5352	8,298	0,340	1,649	1,030
3	10,500	259,8240	23,912	0,140	1,934	2,967
4	17,933	135,4907	5,917	0,280	1,009	0,734
5	21,507	451,5691	18,222	0,293	3,362	2,261
6	23,820	1040,4692	60,572	0,240	7,747	7,517
7	25,393	547,4477	28,005	0,307	4,076	3,475
8	26,173	9987,5615	619,199	0,260	74,360	76,838
9	27,067	751,1644	38,407	0,267	5,592	4,767
-	Total	13431,4387	805,845			

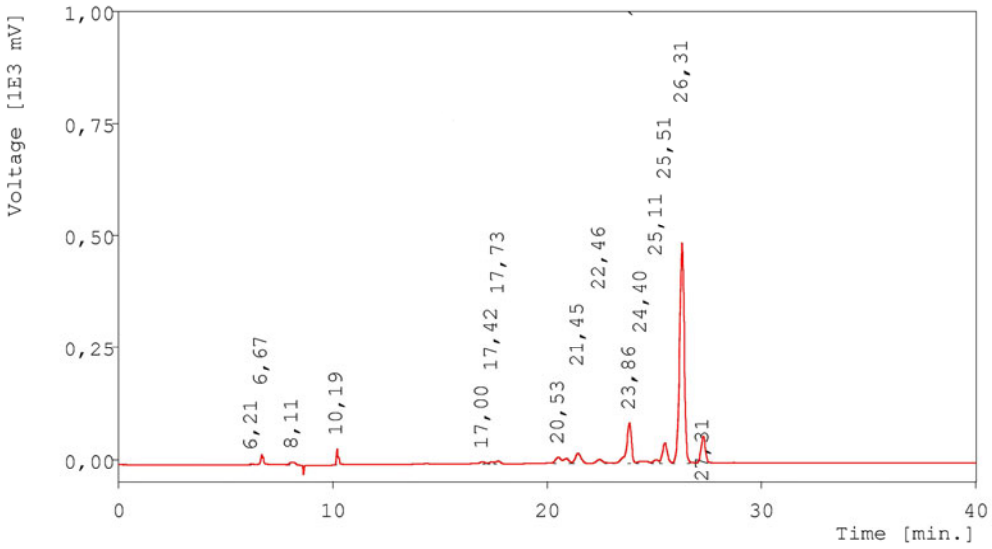
Figure S15(a2): Hplc analysis of alkaline Hydrolysis products of **5′-r(CAAGAAC)-3′ (5b)** [after digestion for **2h** at pH 12.5 using 0.03N NaOH/ 20°C, followed by quenching with 0.03 N aq. acetic acid]. For Hplc conditions see the experimental section in the text.



Result Table - Calculation Method Uncal

Peak No.	Reten. time	Area [mV.s]	Height [mV]	W05 [min.]	Area [%]	Height [%]
1	6,487	35,9054	3,178	0,227	0,268	0,403
2	6,840	257,5473	9,699	0,340	1,920	1,231
3	10,507	286,4401	26,784	0,133	2,135	3,399
4	17,500	116,6701	1,880	0,440	0,870	0,239
5	17,980	130,8699	7,065	0,273	0,976	0,897
6	20,973	185,0896	4,466	0,733	1,380	0,567
7	21,600	427,2599	21,848	0,300	3,185	2,773
8	23,927	1323,4639	74,588	0,240	9,866	9,466
9	25,493	663,5156	39,366	0,260	4,946	4,996
10	26,247	9140,6213	552,293	0,260	68,139	70,090
11	27,153	847,2531	46,811	0,267	6,315	5,939
-	Total	13414,6361	787,977			

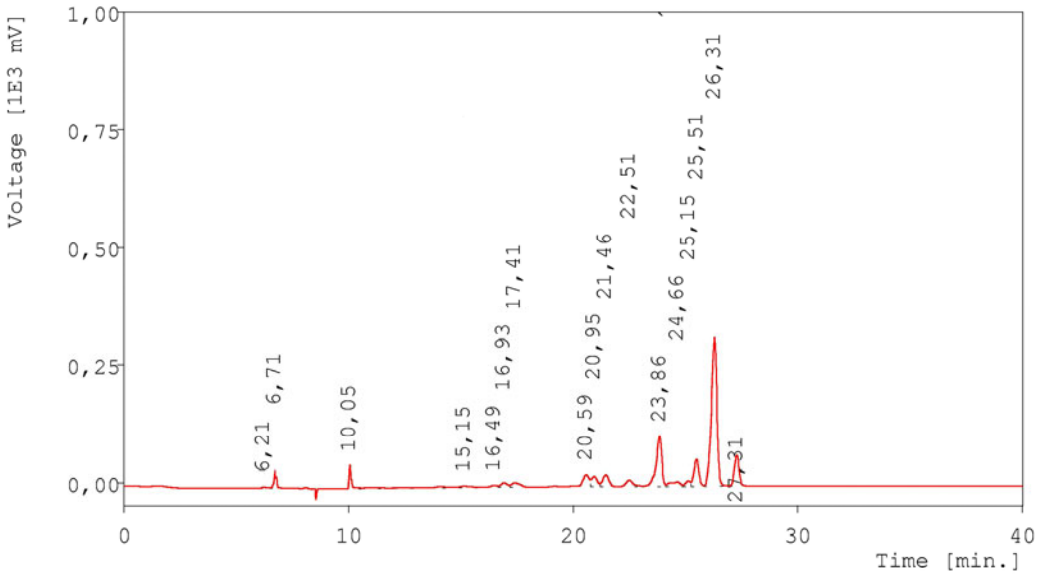
Figure S15(a3): Hplc analysis of alkaline Hydrolysis products of **5′-r(CAAGAAC)-3′ (5b)** [after digestion for **3h** at pH 12.5 using 0.03N NaOH/ 20°C, followed by quenching with 0.03 N aq. acetic acid]. For Hplc conditions see the experimental section in the text.



Result Table - Calculation Method Uncal

Peak No.	Reten. time	Area [mV.s]	Height [mV]	W05 [min.]	Area [%]	Height [%]
1	6,207	18,2905	2,094	0,180	0,142	0,253
2	6,673	193,7997	22,196	0,133	1,502	2,681
3	8,107	124,2297	6,487	0,313	0,963	0,784
4	10,193	266,1397	35,761	0,093	2,063	4,319
5	17,000	102,2840	4,969	0,260	0,793	0,600
6	17,420	65,0022	4,732	0,240	0,504	0,572
7	17,733	105,1835	6,247	0,320	0,815	0,755
8	20,533	557,1425	14,456	0,653	4,318	1,746
9	21,453	453,6046	23,630	0,293	3,515	2,854
10	22,460	217,5851	9,052	0,320	1,686	1,093
11	23,860	1477,3307	89,484	0,227	11,449	10,808
12	24,400	157,4211	4,729	0,600	1,220	0,571
13	25,107	128,1819	8,064	0,287	0,993	0,974
14	25,513	720,7928	46,128	0,247	5,586	5,572
15	26,313	7404,6450	491,151	0,233	57,384	59,324
16	27,307	911,9771	58,737	0,233	7,067	7,094
-	Total	12903,6100	827,917			

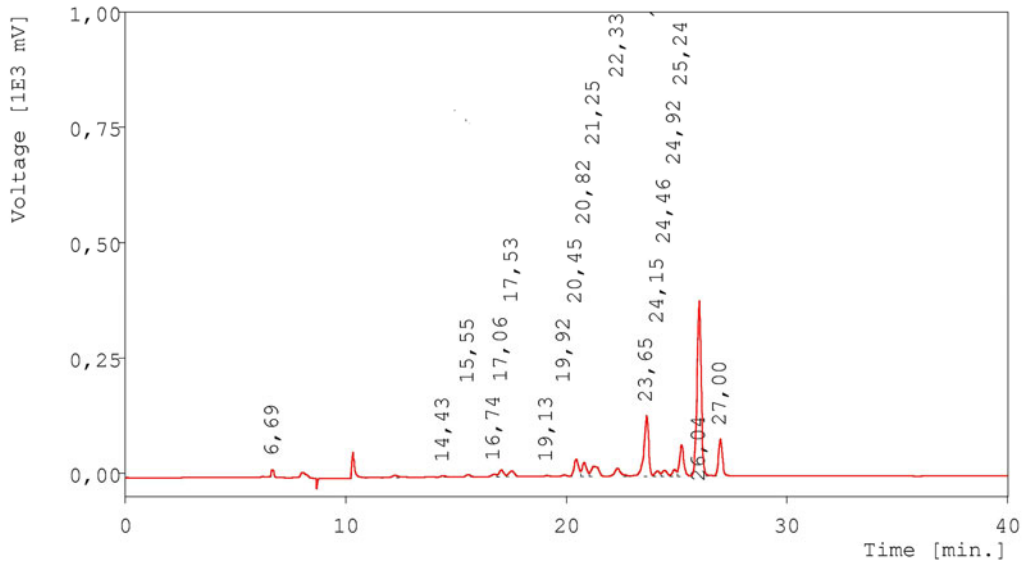
Figure S15(a4): Hplc analysis of alkaline Hydrolysis products of **5′-r(CAAGAAC)-3′ (5b)** [after digestion for **4h** at pH 12.5 using 0.03N NaOH/ 20°C, followed by quenching with 0.03 N aq. acetic acid]. For Hplc conditions see the experimental section in the text.



Result Table - Calculation Method Uncal

Peak No.	Reten. time	Area [mV.s]	Height [mV]	W05 [min.]	Area [%]	Height [%]
1	6,213	30,6613	2,196	0,313	0,238	0,287
2	6,713	267,5502	36,868	0,127	2,075	4,815
3	10,053	320,0433	49,280	0,087	2,482	6,436
4	15,153	392,6544	3,187	0,660	3,045	0,416
5	16,493	91,9838	4,310	0,333	0,713	0,563
6	16,927	193,1086	9,754	0,340	1,498	1,274
7	17,407	247,6733	9,425	0,467	1,921	1,231
8	20,593	443,0554	24,821	0,340	3,436	3,242
9	20,953	379,0658	21,112	0,327	2,940	2,757
10	21,460	474,6845	24,924	0,313	3,681	3,255
11	22,513	308,9676	13,730	0,320	2,396	1,793
12	23,860	1902,6374	107,444	0,253	14,755	14,032
13	24,660	318,6712	9,594	0,613	2,471	1,253
14	25,153	170,2561	11,666	0,253	1,320	1,524
15	25,513	885,6459	56,632	0,247	6,868	7,396
16	26,307	5480,4235	315,577	0,267	42,502	41,214
17	27,307	987,4330	65,188	0,240	7,659	8,512
-	Total	12894,5152	765,710			

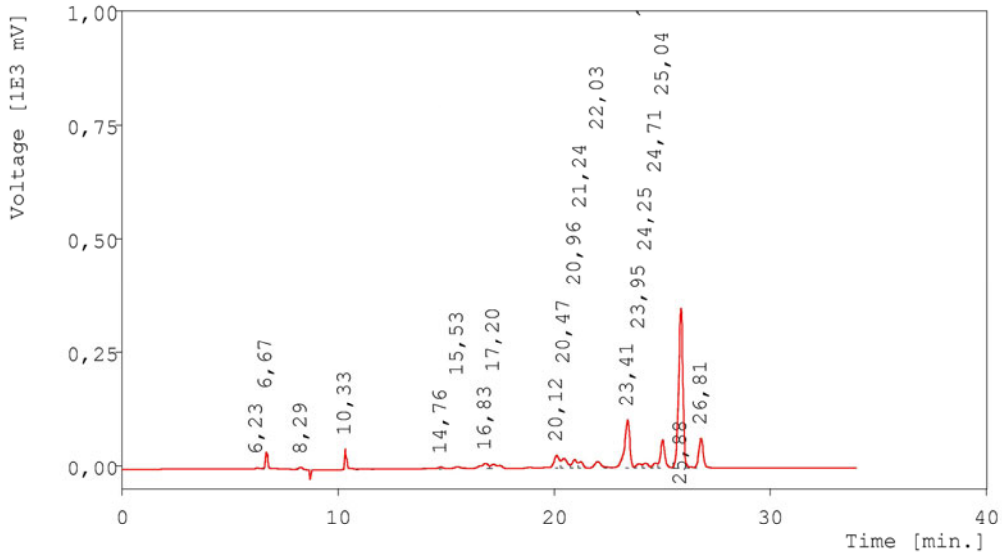
Figure S15(a5): Hplc analysis of alkaline Hydrolysis products of **5′-r(CAAGAAC)-3′ (5b)** [after digestion for **8h** at pH 12.5 using 0.03N NaOH/ 20°C, followed by quenching with 0.03 N aq. acetic acid]. For Hplc conditions see the experimental section in the text.



Result Table - Calculation Method Uncal

Peak No.	Reten. time	Area [mV.s]	Height [mV]	W05 [min.]	Area [%]	Height [%]
1	6,687	131,6760	15,320	0,147	1,018	1,772
2	14,433	820,9082	3,489	0,227	6,349	0,404
3	15,553	85,9295	4,936	0,240	0,665	0,571
4	16,740	84,8188	5,364	0,260	0,656	0,621
5	17,060	217,6540	14,523	0,240	1,683	1,680
6	17,533	220,0752	12,088	0,300	1,702	1,398
7	19,133	38,3481	2,203	0,247	0,297	0,255
8	19,920	47,0893	3,191	0,240	0,364	0,369
9	20,453	529,9213	37,098	0,233	4,099	4,292
10	20,820	433,2688	29,656	0,240	3,351	3,431
11	21,253	510,7443	21,831	0,393	3,950	2,526
12	22,327	337,5911	17,666	0,260	2,611	2,044
13	23,653	1936,4285	131,083	0,213	14,977	15,165
14	24,147	160,0244	11,268	0,273	1,238	1,304
15	24,460	198,6326	12,705	0,267	1,536	1,470
16	24,920	172,8673	14,035	0,220	1,337	1,624
17	25,240	891,4282	67,283	0,207	6,895	7,784
18	26,040	5122,9644	381,106	0,207	39,624	44,090
19	27,000	988,7036	79,532	0,193	7,648	9,200
-	Total	12929,0737	864,377			

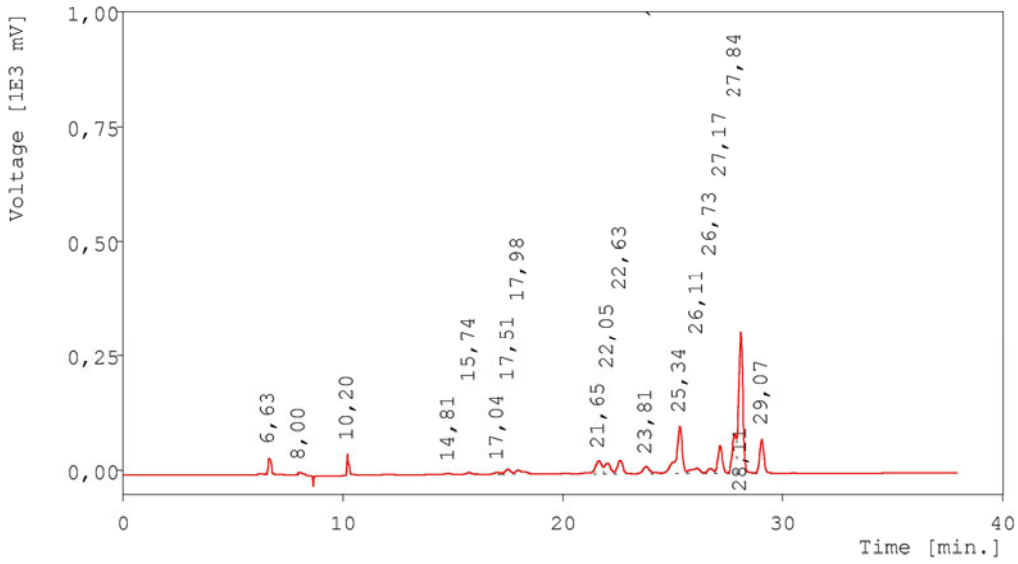
Figure S15(a6): Hplc analysis of alkaline Hydrolysis products of **5′-r(CAAGAAC)-3′ (5b)** [after digestion for **15h** at pH 12.5 using 0.03N NaOH/ 20°C, followed by quenching with 0.03 N aq. acetic acid]. For Hplc conditions see the experimental section in the text.



Result Table - Calculation Method Uncal

Peak No.	Reten. time	Area [mV.s]	Height [mV]	W05 [min.]	Area [%]	Height [%]
1	6,233	33,8869	2,340	0,287	0,270	0,279
2	6,667	332,7088	38,138	0,133	2,651	4,545
3	8,287	74,6112	5,174	0,233	0,594	0,617
4	10,327	406,8555	45,945	0,120	3,241	5,476
5	14,760	211,1290	4,089	0,260	1,682	0,487
6	15,527	124,2514	4,660	0,300	0,990	0,555
7	16,833	280,2987	12,170	0,340	2,233	1,450
8	17,200	245,8522	8,908	0,560	1,959	1,062
9	20,120	518,2402	28,465	0,320	4,129	3,392
10	20,467	418,4589	21,956	0,327	3,334	2,617
11	20,960	294,8794	19,671	0,280	2,349	2,344
12	21,240	213,5767	14,913	0,247	1,702	1,777
13	22,027	323,7528	15,447	0,293	2,579	1,841
14	23,413	1843,0541	105,801	0,247	14,684	12,609
15	23,947	158,0772	9,775	0,287	1,259	1,165
16	24,247	180,8290	11,052	0,300	1,441	1,317
17	24,707	163,7529	11,770	0,240	1,305	1,403
18	25,040	858,5058	61,664	0,213	6,840	7,349
19	25,880	4916,3103	352,088	0,213	39,168	41,961
20	26,813	952,6837	65,050	0,227	7,590	7,754
-	Total	12551,7148	839,077			

Figure S15(a7): Hplc analysis of alkaline Hydrolysis products of **5′-r(CAAGAAC)-3′ (5b)** [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.



Result Table - Calculation Method Uncal

Peak No.	Reten. time	Area [mV.s]	Height [mV]	W05 [min.]	Area [%]	Height [%]
1	6,627	357,0812	38,052	0,160	2,727	4,312
2	8,000	118,7661	6,458	0,300	0,907	0,732
3	10,200	336,2298	49,714	0,087	2,568	5,634
4	14,813	45,7420	2,292	0,340	0,349	0,260
5	15,740	74,6199	4,096	0,233	0,570	0,464
6	17,040	83,9304	4,454	0,327	0,641	0,505
7	17,513	194,3911	10,710	0,287	1,484	1,214
8	17,980	240,4557	8,443	0,553	1,836	0,957
9	21,653	606,1735	27,999	0,373	4,629	3,173
10	22,053	436,9009	22,819	0,340	3,336	2,586
11	22,627	500,2394	29,309	0,267	3,820	3,321
12	23,807	350,9853	15,117	0,320	2,680	1,713
13	25,340	2012,1119	103,530	0,240	15,366	11,732
14	26,113	347,3010	11,257	0,587	2,652	1,276
15	26,727	190,6035	10,903	0,313	1,456	1,236
16	27,167	883,8266	62,810	0,227	6,749	7,118
17	27,840	1084,6684	87,987	0,213	8,283	9,971
18	28,113	4196,7872	309,703	0,207	32,049	35,095
19	29,067	1034,0275	76,805	0,207	7,898	8,701
-	Total	13094,8414	882,458			

Figure S15(a8): Hplc analysis of alkaline Hydrolysis products of **5′-r(CAAGAAC)-3′ (5b)** [after digestion for **48h** 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.