

Electronic Supplementary Information 6

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

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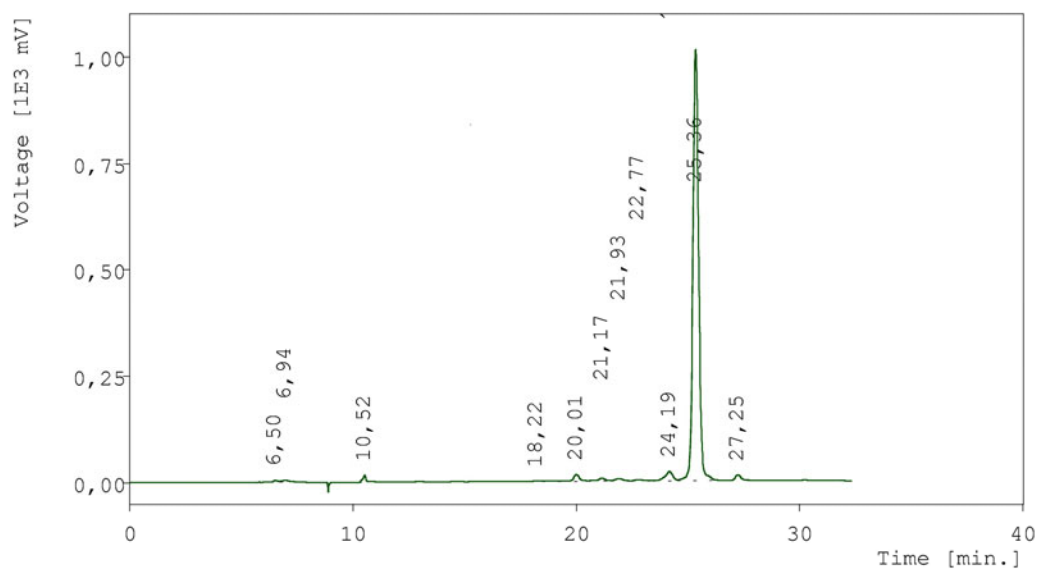
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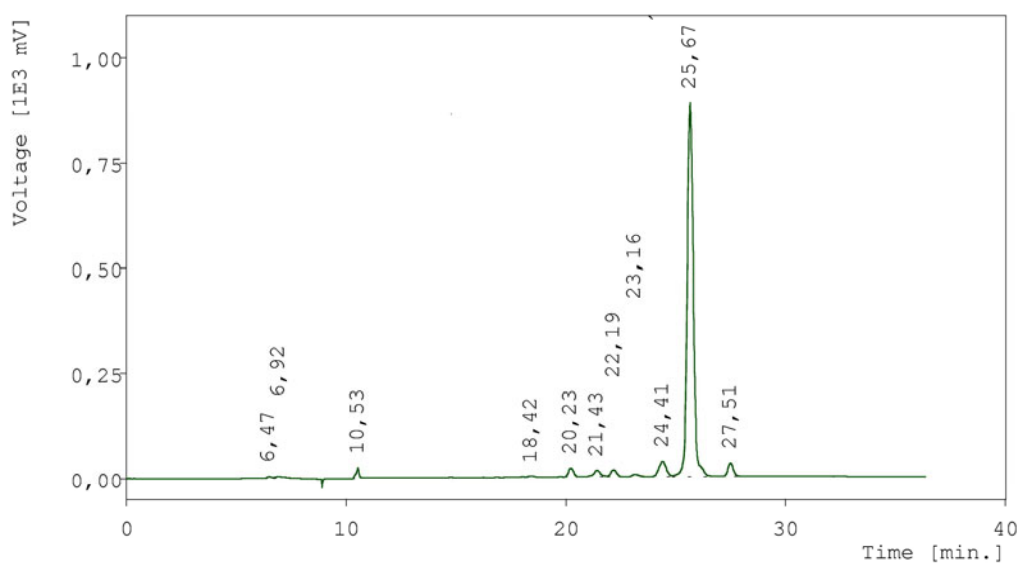
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Figure S15B. Panels (b1) – (b8) show the RP-Hplc and SMART™ RP-Hplc profiles at ½, 2, 3, 4, 8, 15, 27, 48 h of alkali digestion of native heptamer **5'-r(CAAGCAC)-3'** (**6b**). **p. S2 – S9**

Figure 15B*Result Table - Calculation Method Uncal*

Peak No.	Reten. time	Area [mV.s]	Height [mV]	W05 [min.]	Area [%]	Height [%]
1	6,500	45,8508	3,508	0,233	0,228	0,317
2	6,940	90,9872	3,645	0,407	0,452	0,329
3	10,520	188,9615	17,007	0,133	0,939	1,537
4	18,220	96,8616	1,674	0,407	0,481	0,151
5	20,013	359,9820	15,715	0,260	1,789	1,420
6	21,167	179,2150	6,848	0,313	0,891	0,619
7	21,927	154,9871	5,645	0,407	0,770	0,510
8	22,773	94,8243	3,200	0,453	0,471	0,289
9	24,187	535,2520	21,942	0,347	2,661	1,983
10	25,360	18116,7071	1013,674	0,280	90,058	91,629
11	27,253	253,1917	13,429	0,273	1,260	1,216
-	Total	20116,8202	1106,286			

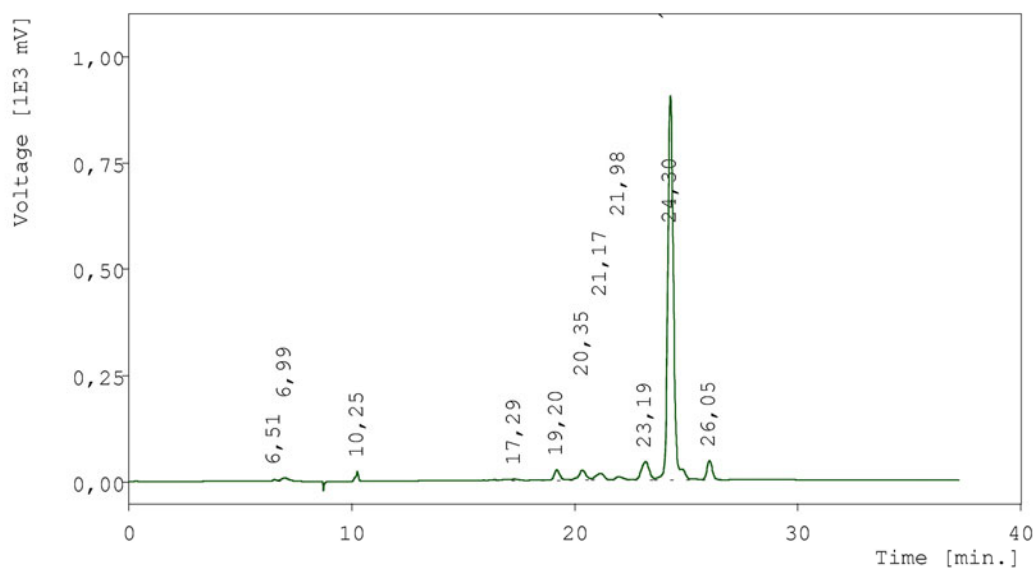
Figure S15(b1): Hplc analysis of alkaline Hydrolysis products of **5'-r(CAAGCAC)-3' (6b)** [after digestion for **0.5h** at pH 12.5 using 0.03N NaOH/ 20°C, followed by quenching with 0.03 N aq. acetic acid]. For Hplc conditions see the experimental section in the text.



Result Table - Calculation Method Uncal

Peak No.	Reten. time	Area [mV.s]	Height [mV]	W05 [min.]	Area [%]	Height [%]
1	6,473	41,9805	3,352	0,227	0,209	0,319
2	6,920	112,9375	3,989	0,480	0,563	0,379
3	10,533	275,5272	25,887	0,133	1,374	2,461
4	18,420	41,7671	2,580	0,267	0,208	0,245
5	20,233	339,5722	21,054	0,260	1,693	2,002
6	21,433	339,6032	15,385	0,300	1,693	1,463
7	22,187	299,4561	16,315	0,287	1,493	1,551
8	23,160	119,6421	5,147	0,347	0,596	0,489
9	24,413	838,1758	36,135	0,373	4,179	3,435
10	25,667	17083,0362	890,075	0,293	85,170	84,620
11	27,507	565,8553	31,933	0,273	2,822	3,036
-	Total	20057,5532	1051,852			

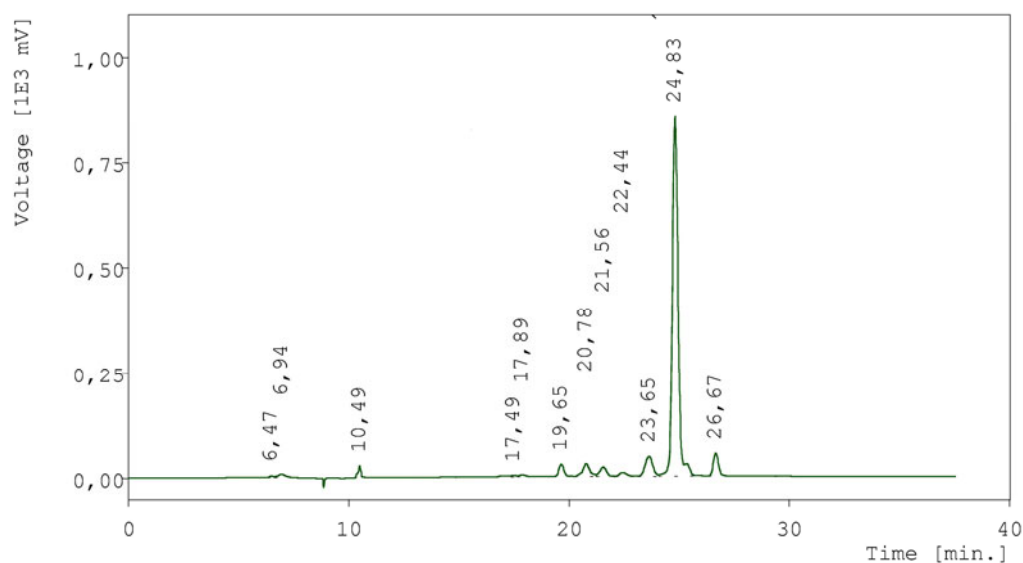
Figure S15(b2): Hplc analysis of alkaline Hydrolysis products of **5'-r(CAAGCAC)-3' (6b)** [after digestion for **2h** at pH 12.5 using 0.03N NaOH/ 20°C, followed by quenching with 0.03 N aq. acetic acid]. For Hplc conditions see the experimental section in the text.



Result Table - Calculation Method Uncal

Peak No.	Reten. time	Area [mV.s]	Height [mV]	W05 [min.]	Area [%]	Height [%]
1	6,513	37,5531	3,393	0,213	0,185	0,308
2	6,987	186,9853	7,372	0,380	0,920	0,669
3	10,247	241,8076	23,848	0,120	1,190	2,165
4	17,293	228,1437	3,110	0,800	1,123	0,282
5	19,200	481,8935	24,048	0,273	2,372	2,184
6	20,347	558,9639	23,513	0,320	2,752	2,135
7	21,167	431,7917	16,162	0,440	2,126	1,468
8	21,980	220,4571	7,675	0,413	1,085	0,697
9	23,187	1037,6797	42,940	0,393	5,108	3,899
10	24,300	16133,6539	904,381	0,273	79,419	82,119
11	26,053	755,7738	44,870	0,267	3,720	4,074
-	Total	20314,7031	1101,312			

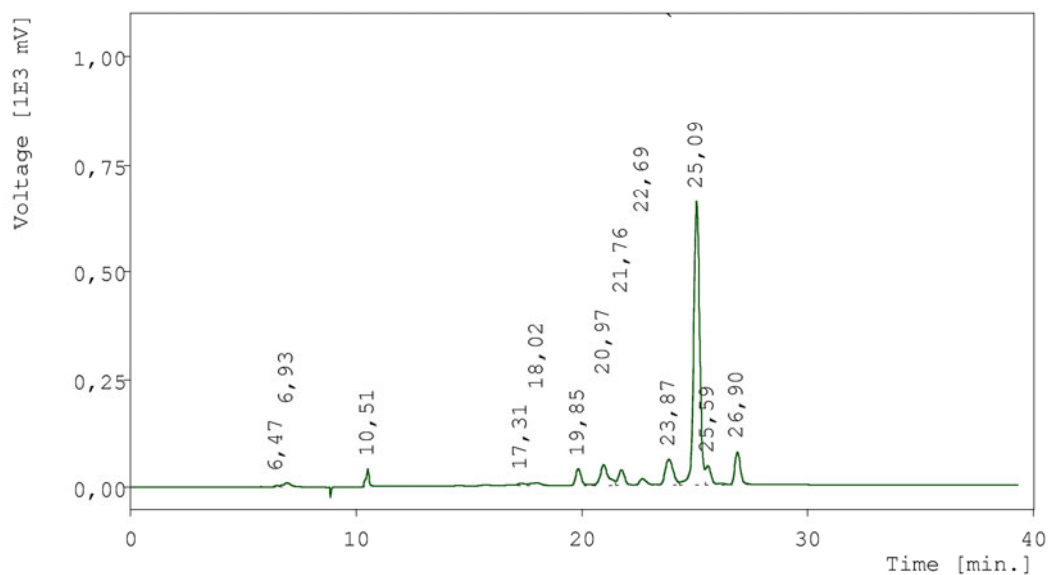
Figure S15(b3): Hplc analysis of alkaline Hydrolysis products of **5'-r(CAAGCAC)-3' (6b)** [after digestion for **3h** at pH 12.5 using 0.03N NaOH/ 20°C, followed by quenching with 0.03 N aq. acetic acid]. For Hplc conditions see the experimental section in the text.



Result Table - Calculation Method Uncal

Peak No.	Reten. time	Area [mV.s]	Height [mV]	W05 [min.]	Area [%]	Height [%]
1	6,473	36,9766	3,325	0,213	0,183	0,304
2	6,940	198,5610	7,904	0,360	0,980	0,722
3	10,493	293,7062	28,731	0,133	1,450	2,624
4	17,493	115,8499	3,380	0,340	0,572	0,309
5	17,887	92,5467	4,265	0,353	0,457	0,389
6	19,653	454,7009	28,634	0,253	2,244	2,615
7	20,780	671,8913	29,836	0,307	3,317	2,724
8	21,560	455,5147	21,858	0,327	2,248	1,996
9	22,440	204,8044	8,680	0,367	1,011	0,793
10	23,647	1132,6333	47,676	0,380	5,591	4,354
11	24,827	15689,6911	856,632	0,280	77,446	78,223
12	26,673	912,0172	54,191	0,267	4,501	4,947
-	Total	20258,8933	1095,111			

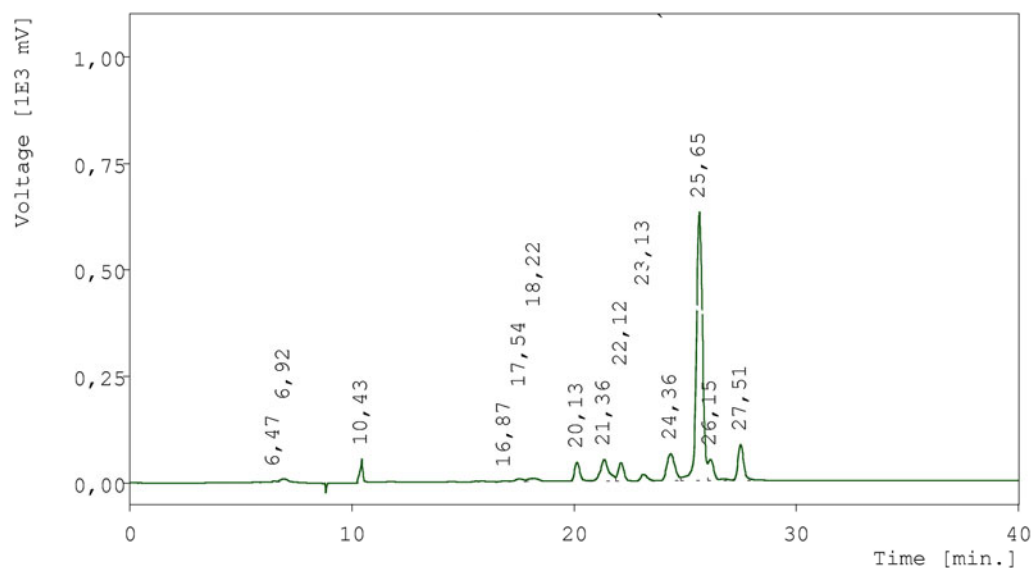
Figure S15(b4): Hplc analysis of alkaline Hydrolysis products of **5'-r(CAAGCAC)-3' (6b)** [after digestion for **4h** at pH 12.5 using 0.03N NaOH/ 20°C, followed by quenching with 0.03 N aq. acetic acid]. For Hplc conditions see the experimental section in the text.



Result Table - Calculation Method Uncal

Peak No.	Reten. time	Area [mV.s]	Height [mV]	W05 [min.]	Area [%]	Height [%]
1	6,467	33,9320	3,178	0,207	0,171	0,304
2	6,933	216,7363	9,149	0,353	1,090	0,874
3	10,513	436,0594	42,044	0,140	2,193	4,016
4	17,307	156,0770	5,497	0,420	0,785	0,525
5	18,020	231,5431	6,311	0,653	1,164	0,603
6	19,847	669,2096	38,688	0,260	3,365	3,695
7	20,967	1189,8944	48,143	0,327	5,983	4,599
8	21,760	693,0223	35,548	0,300	3,485	3,395
9	22,693	328,9293	14,917	0,327	1,654	1,425
10	23,867	1482,1527	59,900	0,393	7,452	5,722
11	25,093	12254,4358	660,683	0,293	61,617	63,107
12	25,593	841,8026	44,384	0,280	4,233	4,239
13	26,900	1354,2442	78,484	0,267	6,808	7,496
-	Total	19888,0386	1046,926			

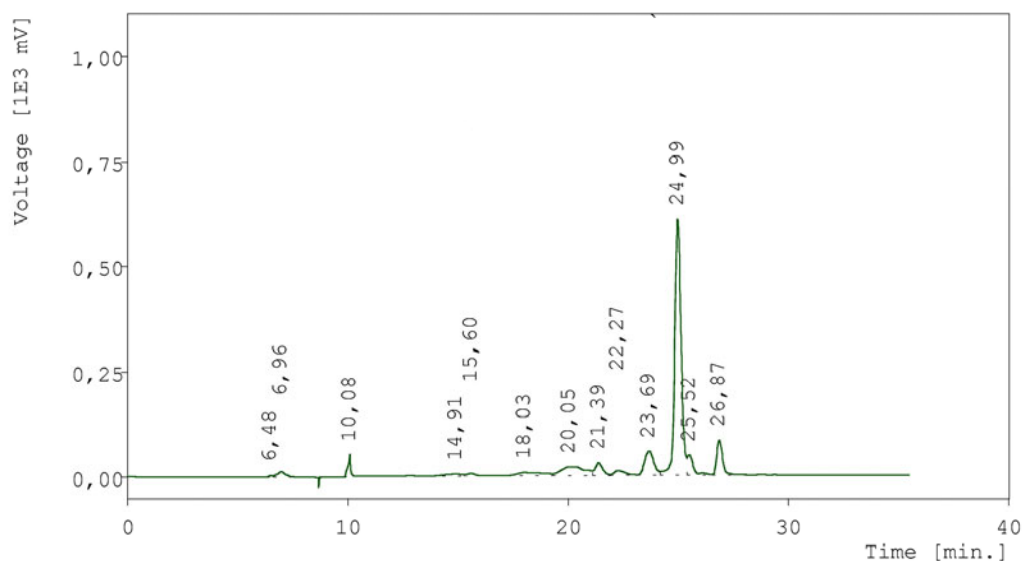
Figure S15(b5): Hplc analysis of alkaline Hydrolysis products of **5'-r(CAAGCAC)-3' (6b)** [after digestion for **8h** at pH 12.5 using 0.03N NaOH/ 20°C, followed by quenching with 0.03 N aq. acetic acid]. For Hplc conditions see the experimental section in the text.



Result Table - Calculation Method Uncal

Peak No.	Reten. time	Area [mV.s]	Height [mV]	W05 [min.]	Area [%]	Height [%]
1	6,473	34,7314	3,184	0,213	0,169	0,299
2	6,920	218,9493	8,731	0,433	1,068	0,821
3	10,433	541,4431	55,423	0,133	2,642	5,212
4	16,873	41,3067	2,233	0,327	0,202	0,210
5	17,540	188,8635	6,837	0,467	0,922	0,643
6	18,220	256,5889	6,905	0,627	1,252	0,649
7	20,133	721,4801	43,767	0,260	3,521	4,116
8	21,360	1312,2113	50,607	0,353	6,403	4,759
9	22,120	760,1907	42,184	0,287	3,709	3,967
10	23,133	307,8779	14,871	0,320	1,502	1,398
11	24,360	1585,2954	62,925	0,407	7,736	5,917
12	25,653	12016,9019	631,620	0,293	58,638	59,396
13	26,153	965,5952	49,561	0,293	4,712	4,661
14	27,513	1541,9478	84,554	0,280	7,524	7,952
-	Total	20493,3834	1063,403			

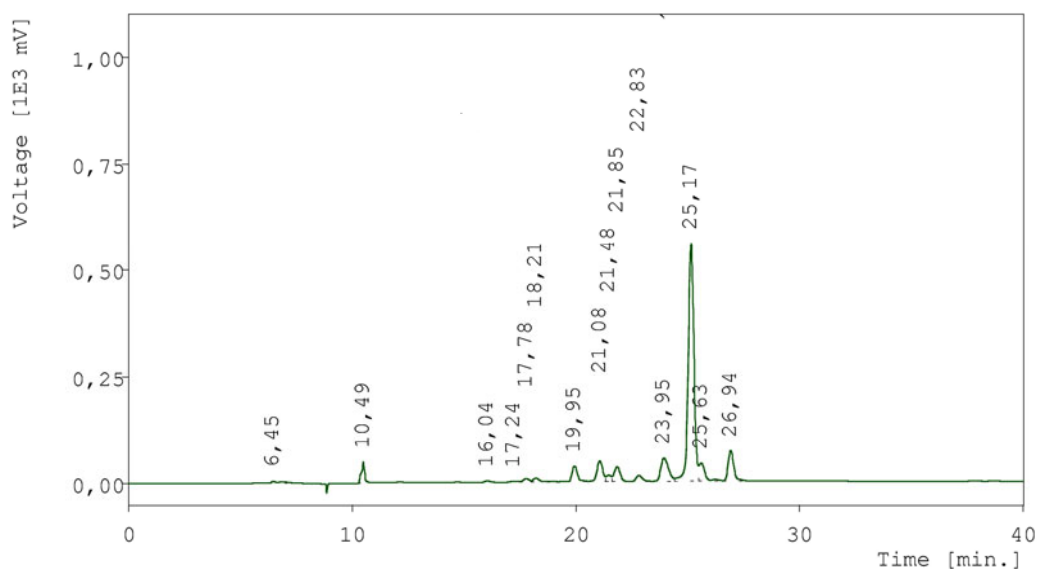
Figure S15(b6): Hplc analysis of alkaline Hydrolysis products of **5'-r(CAAGCAC)-3' (6b)** [after digestion for **15h** at pH 12.5 using 0.03N NaOH/ 20°C, followed by quenching with 0.03 N aq. acetic acid]. For Hplc conditions see the experimental section in the text.



Result Table - Calculation Method Uncal

Peak No.	Reten. time	Area [mV.s]	Height [mV]	W05 [min.]	Area [%]	Height [%]
1	6,480	32,3122	3,157	0,200	0,154	0,334
2	6,960	304,3807	12,190	0,367	1,451	1,288
3	10,080	467,6828	53,037	0,107	2,229	5,604
4	14,907	267,7372	4,773	0,960	1,276	0,504
5	15,600	169,8287	5,578	0,540	0,809	0,589
6	18,033	628,9728	7,693	1,620	2,998	0,813
7	20,053	1547,4142	20,354	1,487	7,375	2,151
8	21,393	700,7670	29,432	0,367	3,340	3,110
9	22,273	393,3374	11,045	0,547	1,875	1,167
10	23,687	1672,2341	57,195	0,460	7,970	6,043
11	24,987	12315,2738	610,027	0,307	58,698	64,453
12	25,520	952,0414	47,833	0,287	4,538	5,054
13	26,873	1528,7280	84,149	0,280	7,287	8,890
-	Total	20980,7100	946,462			

Figure S15(b7): RP-Hplc analysis of alkaline Hydrolysis products of **5'-r(CAAGCAC)-3' (6b)** [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	6,453	119,4053	3,306	0,200	0,706	0,350
2	10,493	541,4486	49,515	0,160	3,203	5,238
3	16,040	66,5588	3,463	0,287	0,394	0,366
4	17,240	49,2909	2,419	0,387	0,292	0,256
5	17,780	146,4422	7,957	0,300	0,866	0,842
6	18,213	175,3424	8,655	0,300	1,037	0,916
7	19,947	592,8652	35,646	0,260	3,508	3,771
8	21,080	853,9007	47,532	0,287	5,052	5,028
9	21,480	222,2638	14,594	0,287	1,315	1,544
10	21,853	637,4023	33,720	0,307	3,771	3,567
11	22,827	254,1010	13,414	0,293	1,503	1,419
12	23,953	1289,4704	53,911	0,387	7,629	5,703
13	25,167	9906,4492	559,531	0,273	58,611	59,192
14	25,627	792,1753	41,509	0,280	4,687	4,391
15	26,940	1255,0163	70,102	0,273	7,426	7,417
-	Total	16902,1325	945,273			

Figure S15(b8): RP-Hplc analysis of alkaline Hydrolysis products of **5'-r(CAAGCAC)-3' (6b)** [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.