Supplementary Information

Revealing the Presence of Symbolic Sequence Representing Multiple Nucleotides: Based on K-means Clustering of Oligonucleotides

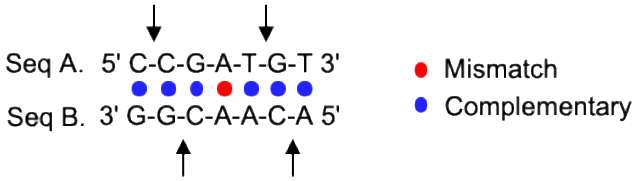
Contents

Supplementary 1. Calculation of Gibb's free energy.

The nearest-neighbor model was used for Gibbs's free energy calculation. In the general usage, the nearest-neighbor parameter of the nucleic acid duplex and terminal base pairs parameters should be included to calculate the enthalpy and entropy of hybridization. We considered the nearest-neighbor parameter in the complementary base pairing for facile calculation. The nearest-neighbor parameters were referenced from a previous study, [Ref:1] and the reaction condition was considered as 1 M NaCl, 25 °C and pH 7.

Interaction	$\Delta H2°$ (kcal/mol)	$\Delta S2°$ (cal/ K mol)	$\Delta G2°$ (kcal/mol)
AA/TT	-9.1	-24.0	-1.9
AT/TA	-8.6	-23.9	-1.5
TA/AT	-6.0	-16.9	-0.9
CA/GT	-5.8	-12.9	-1.9
GT/CA	-6.5	-17.3	-1.3
CT/GA	-7.8	-20.8	-1.6
GA/CT	-5.6	-13.5	-1.6
CG/GC	-11.9	-27.8	-3.6
GC/CG	-11.1	-26.7	-3.1
GG/CC	-11.0	-26.6	-3.1

Gibb's free energy between two stands were calculated with the summation of $\Delta G2°$ in reliable interactions.



$$\Delta G_{AB} = \Delta G(CC|GG) + \Delta G(CG|GC) + \Delta G(TG|AC) + \Delta G(GT|CA)$$

Supplementary 2. Calculation of the multiple reaction equilibrium of two analogs.

The reaction equation of the analogs with the CS was written as below.

$$[Analog\ 1] + [CS] = [Complex_{A1}] \cdots \Delta G_{A1} = -RTlnK_{A1}$$

$$[Analog\ 2] + [CS] = [Complex_{A2}] \cdots \Delta G_{A2} = -RTlnK_{A2}$$

The multiple reaction of Analog 1 and Analog 2 with the CS was written as below.

	in	***out***	η
Analog 1	1	$1 - x_{A1}$	$\frac{1 - x_{A1}}{4 - x_{A1} - x_{A2}}$
Analog 2	1	$1 - x_{A2}$	$\frac{1 - x_{A2}}{4 - x_{A1} - x_{A2}}$
CS	2	$2 - x_{A1} - x_{A2}$	$\frac{2 - x_{A1} - x_{A2}}{4 - x_{A1} - x_{A2}}$
Complex$_{A1}$	0	x_{A1}	$\frac{x_{A1}}{4 - x_{A1} - x_{A2}}$
Complex$_{A2}$	0	x_{A2}	$\frac{x_{A2}}{4 - x_{A1} - x_{A2}}$
Total		$4 - x_{A1} - x_{A2}$	

The amount of hybridization of Analog 1 and Analog 2 was referred to as x_{A1} and x_{A2}, respectively.

$$K_{A1} = \frac{[Complex_{A1}]}{[Analog\ 1][CS]} = \frac{x_{A1}(4 - x_{A1} - x_{A2})}{(1 - x_{A1})(2 - x_{A1} - x_{A2})}$$

$$K_{A2} = \frac{[Complex_{A2}]}{[Analog\ 2][CS]} = \frac{x_{A2}(4 - x_{A1} - x_{A2})}{(1 - x_{A2})(2 - x_{A1} - x_{A2})}$$

The reaction constants, K_{A1} and K_{A1}, were obtained from the Gibb's free energies of hybridization. And x_{A1} and x_{A2} were obtained by solving the simultaneous equation.

Supplementary 3. Calculation of the concentration of the RS.

From the above calculation of multiple reaction equilibrium of two analogs, it was possible to obtain x_A and x_B. The hybridization yield of the RS (x_R) was equal to the sum of the hybridization yield of the analogs.

$$x_{A1} + x_{A2} = x_R$$

The reaction equation of the RS and the CS was written as below.

$$[RS] + [CS] = [Complex_R] \cdots \Delta G_R = -RTlnK_R$$

The reaction of the RS and the CS was also written as below.

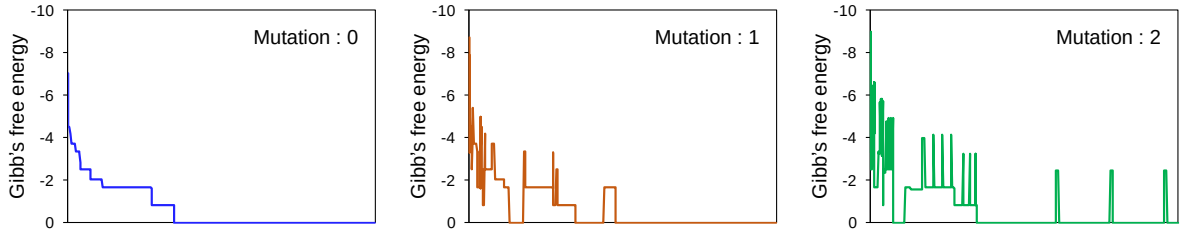
	in	***out***	$\boldsymbol{\eta}$
CS	x	$x - x_R$	$\frac{x - x_R}{2x - x_R}$
RS	x	$x - x_R$	$\frac{x - x_R}{2x - x_R}$
***Complex*$_R$**	0	x_R	$\frac{x_R}{2x - x_R}$
Total		$2x - x_R$	

The x indicates the amount of CS and the RS that equaled the hybridization yield of both of the analogs. The x was obtained from the equation of K_R. The value of K_R was obtained from the Gibb's free energy of hybridization.

$$K_R = \frac{[Complex_R]}{[CS][RS]} = \frac{x_R(2x - x_R)}{(x - x_R)^2}$$

Supplementary 4. Calculation of the Pearson's correlation coefficient.

The similarity of the hybridization profile of the nucleotides was measured with the Pearson's correlation coefficient. All possible sequences were prepared, and the hybridization profiles against the nucleotides of interest were listed. In the case of the 8-based origin, 48 (65,536) sequences existed. From AAAAAAAA to CCCCCCCC, 65,536 of the hybridization Gibb's free energy values against the nucleotides were listed.



In the above graphs, the Gibb's energy profiles of the origin (number of mutated bases: 0) and the analogs (number of mutated bases: 1,2) are noted. As the mutations accumulated, the hybridization energy profile difference became more pronounced. This difference was quantified with the Pearson's correlation coefficient.

The Pearson's correlation coefficient was calculated with the "pearsonr" function supported by SciPy.org, and the calculation formula is noted below.

$$P_{AB} = \frac{\sum(\Delta G_{Ai} - \Delta\bar{G}_A) \times (\Delta G_{Bi} - \Delta\bar{G}_B)}{\sqrt{\sum(\Delta G_{Ai} - \Delta\bar{G}_A)^2 \times \sum(\Delta G_{Bi} - \Delta\bar{G}_B)^2}}$$

In the equation, the Pearson's correlation coefficient of nucleotide A and nucleotide B (P_{AB}) was obtained from the Gibb's free energy of each sequence (ΔG_{Ai}, ΔG_{Bi}) and the average of the Gibb's free energy ($\Delta\bar{G}_A$, $\Delta\bar{G}_B$).

Supplementary 5. The random sets of two analogs, and the calculation of the RS.

			Pearson correlation coefficient				Closeness		
		Sequences	Analog-1 /Analog-2	Analog-1 /Represent	Analog-2 / Represent		Analog-1	Analog-2	Represent
1	Analog-1	AATTACAGAG	0.438180366	0.749938668	0.682072553	Analog-1	0	20	103
	Analog-2	AATTCCCGAG				Analog-2	20	0	58
	Represent	AATTCCAGAG				Represent	103	58	0
2	Analog-1	GGGAGCTAGA	0.586027263	0.83348672	0.761853347	Analog-1	0	43	364
	Analog-2	GGCAGCTGGA				Analog-2	43	0	202
	Represent	GGGAGCTGGA				Represent	364	202	0
3	Analog-1	GCTTCTTCCG	0.64450625	0.795466311	0.85134936	Analog-1	0	79	154
	Analog-2	GCTCCTGCCG				Analog-2	79	0	508
	Represent	GCTTCTGCCG				Represent	154	508	0
4	Analog-1	ACACGTAGTG	0.787937087	1	0.787937087	Analog-1	0	253	997
	Analog-2	TGACGTAGTG				Analog-2	253	0	256
	Represent	ACACGTAGTG				Represent	997	256	0
5	Analog-1	GGTCGGCCGA	0.749160567	0.815741106	0.94113895	Analog-1	0	319	319
	Analog-2	AGCCGGCCGA				Analog-2	319	0	847
	Represent	GGCCGGCCGA				Represent	319	847	0
6	Analog-1	GGGTCGGGCC	0.68494884	0.897354199	0.800550667	Analog-1	0	154	634
	Analog-2	CGGTCAGGCC				Analog-2	154	0	232
	Represent	CGGTCGGGCC				Represent	634	232	0
7	Analog-1	GAACACTAAC	0.58205112	0.7204558	0.811195095	Analog-1	0	106	154
	Analog-2	GTATACTAAC				Analog-2	106	0	448
	Represent	TAATACTAAC				Represent	154	448	0
8	Analog-1	CTGTGCAGGC	0.622090195	0.756491315	0.756491315	Analog-1	0	107	133
	Analog-2	CTGCACAGGC				Analog-2	107	0	106
	Represent	CTGCGCAGGC				Represent	133	106	0
9	Analog-1	TCAGGTCCTG	0.555773089	0.579479604	0.647662634	Analog-1	0	47	58
	Analog-2	TCAGTTACTG				Analog-2	47	0	106
	Represent	TCATGTACTG				Represent	58	106	0
10	Analog-1	TAAGCGACAC	0.743581193	0.812366894	0.934024997	Analog-1	0	322	355
	Analog-2	TAAGCGAGAA				Analog-2	322	0	757
	Represent	TAAGCGAGAC				Represent	355	757	0
11	Analog-1	CGGTTTCCTA	0.600829533	0.76807833	0.836949481	Analog-1	0	184	223
	Analog-2	TGTTTTCCTA				Analog-2	184	0	346
	Represent	CGTTTTCCTA				Represent	223	346	0
12	Analog-1	TGTCGCAAAA	0.602818857	0.762965485	0.779691377	Analog-1	0	49	67
	Analog-2	TGGTGCAAAA				Analog-2	49	0	205
	Represent	TGTTGCAAAA				Represent	67	205	0
13	Analog-1	TCAGAACAGG	0.593242506	0.761006478	0.866671565	Analog-1	0	103	139
	Analog-2	TTAGCACAGG				Analog-2	103	0	613
	Represent	TCAGCACAGG				Represent	139	613	0
14	Analog-1	AGCGCTACGG	0.618953875	0.873942502	0.77496401	Analog-1	0	73	403
	Analog-2	AGAGCTCCGG				Analog-2	73	0	169
	Represent	AGCGCTCCGG				Represent	403	169	0

15	Analog-1	TCTGAGTCAC	0.839214996	0.911725822	0.931395725	Analog-1	0	442	685
	Analog-2	ACTGAGTCAT				Analog-2	442	0	520
	Represent	ACTGAGTCAC				Represent	685	520	0
16	Analog-1	CGCGCTACAT	0.778845775	0.960868125	0.824931477	Analog-1	0	250	860
	Analog-2	CGCGATACAG				Analog-2	250	0	250
	Represent	CGCGCTACAG				Represent	860	250	0
17	Analog-1	TGGGAACATT	0.510124078	0.686874782	0.74868737	Analog-1	0	38	214
	Analog-2	TTGGAAGATT				Analog-2	38	0	160
	Represent	AGGGAAGATT				Represent	214	160	0
18	Analog-1	CCAGGGCAAG	0.530828543	0.8108642	0.724556199	Analog-1	0	29	160
	Analog-2	CCAGCGCGAG				Analog-2	29	0	85
	Represent	CCAGGGCGAG				Represent	160	85	0
19	Analog-1	TCTCATTGTA	0.6450014	0.758110502	0.87608566	Analog-1	0	148	325
	Analog-2	ACTCATTTTA				Analog-2	148	0	532
	Represent	TCTCATTTTA				Represent	325	532	0
20	Analog-1	GTCCGATAAA	0.553668459	0.791176888	0.794605507	Analog-1	0	44	157
	Analog-2	GTTCGGTAAA				Analog-2	44	0	193
	Represent	GTCCGGTAAA				Represent	157	193	0
21	Analog-1	TGAGATCAGA	0.657193023	0.775650579	0.789161944	Analog-1	0	100	148
	Analog-2	TGAGGACAGA				Analog-2	100	0	160
	Represent	TGAGGTCAGA				Represent	148	160	0
22	Analog-1	TACTAGGGGC	0.618467584	0.748434789	0.852755601	Analog-1	0	73	100
	Analog-2	TACTTGAGGC				Analog-2	73	0	376
	Represent	TACTAGAGGC				Represent	100	376	0
23	Analog-1	ACTAATTTTG	0.614305209	0.773301003	0.742852884	Analog-1	0	70	250
	Analog-2	ACTACCTTTG				Analog-2	70	0	88
	Represent	ACTACTTTTG				Represent	250	88	0
24	Analog-1	AACGACGCGA	0.604974751	0.807520864	0.817800753	Analog-1	0	71	154
	Analog-2	AAGGGCGCGA				Analog-2	71	0	496
	Represent	AACGGCGCGA				Represent	154	496	0
25	Analog-1	ATTTTCCGAC	0.661474651	0.86646598	0.753970246	Analog-1	0	123	568
	Analog-2	GTTTTCCGGC				Analog-2	123	0	151
	Represent	GTTTTCCGAT				Represent	568	151	0
26	Analog-1	TAGGGCAGCG	0.694782169	0.801611591	0.910211162	Analog-1	0	112	130
	Analog-2	TAGGGCGGCA				Analog-2	112	0	595
	Represent	TAGGGCGGCG				Represent	130	595	0
27	Analog-1	GTCCGCTATA	0.504162618	0.590226822	0.896366823	Analog-1	0	13	16
	Analog-2	GTCCCCTTTA				Analog-2	13	0	547
	Represent	GTCCCCTATA				Represent	16	547	0
28	Analog-1	GGTGCCGGAA	0.794322929	0.95079162	0.84939432	Analog-1	0	472	889
	Analog-2	GATGCCGGAC				Analog-2	472	0	517
	Represent	GGTGCCGGAC				Represent	889	517	0
29	Analog-1	TACTGCTAAG	0.545790384	1	0.545790384	Analog-1	0	43	1000
	Analog-2	TACTTTTAAG				Analog-2	43	0	43
	Represent	TACTGCTAAG				Represent	1000	43	0
30	Analog-1	TGGCCTAGTG	0.658033767	0.830012894	0.846830439	Analog-1	0	133	202
	Analog-2	TGGCCGAGAG				Analog-2	133	0	652
	Represent	TGGCCGAGTG				Represent	202	652	0

31	Analog-1	AATTCTGGCG	0.690785936	0.825886692	0.881367324	Analog-1	0	220	424
	Analog-2	AATCCTGGCA				Analog-2	220	0	451
	Represent	AATCCTGGCG				Represent	424	451	0
32	Analog-1	CGAGTCTACG	0.671770957	0.810727285	0.876787703	Analog-1	0	175	292
	Analog-2	AGAGTGTACG				Analog-2	175	0	559
	Represent	CGAGTGTACG				Represent	292	559	0
33	Analog-1	CACATCTAAT	0.687172825	0.77485809	0.833726426	Analog-1	0	154	265
	Analog-2	CACAATTAAT				Analog-2	154	0	229
	Represent	CACATTTAAT				Represent	265	229	0
34	Analog-1	GTAAGCCACC	0.638035317	0.755482255	0.87710214	Analog-1	0	84	130
	Analog-2	GTAAACCACA				Analog-2	84	0	580
	Represent	GTAAACCACC				Represent	130	580	0
35	Analog-1	CGATGATATC	0.52371255	0.689116076	0.783593814	Analog-1	0	76	205
	Analog-2	CTGTGATATC				Analog-2	76	0	181
	Represent	CTATGATATC				Represent	205	181	0
36	Analog-1	TGCGTCGTTC	0.540670937	0.669348251	0.657288517	Analog-1	0	55	76
	Analog-2	TGCTTCCTTC				Analog-2	55	0	319
	Represent	TGCTTCGATC				Represent	76	319	0
37	Analog-1	CCAAAATAAA	0.633969766	0.804266998	0.724705947	Analog-1	0	82	403
	Analog-2	CCAAAGCAAA				Analog-2	82	0	109
	Represent	CCAAAACAAA				Represent	403	109	0
38	Analog-1	TGCGATATCC	0.652042813	0.799390261	0.842705396	Analog-1	0	139	388
	Analog-2	TGCGTTATTC				Analog-2	139	0	277
	Represent	TGCGATATTC				Represent	388	277	0
39	Analog-1	AGGGCACGTG	0.646090225	0.770861831	0.771064305	Analog-1	0	76	103
	Analog-2	AGGGTGCGTG				Analog-2	76	0	103
	Represent	AGGGCGCGTG				Represent	103	103	0
40	Analog-1	CAGCTGTGAA	0.621610422	0.705127099	0.788466	Analog-1	0	118	52
	Analog-2	CAAGTGTGAA				Analog-2	118	0	184
	Represent	CAGGTGTGAA				Represent	52	184	0
41	Analog-1	TGTGAGAACT	0.73091439	0.826666161	0.894814939	Analog-1	0	127	193
	Analog-2	TGTTAGAACA				Analog-2	127	0	481
	Represent	TGTTAGAACT				Represent	193	481	0
42	Analog-1	GGTCTTCGTT	0.586573197	0.742653499	0.823931807	Analog-1	0	82	160
	Analog-2	CGTCTTTGTT				Analog-2	82	0	280
	Represent	GGTCTTTGTT				Represent	160	280	0
43	Analog-1	GTCATGGGGA	0.554788846	0.732213615	0.802257264	Analog-1	0	38	67
	Analog-2	GTCCTGTGGA				Analog-2	38	0	460
	Represent	GTCATGTGGA				Represent	67	460	0
44	Analog-1	GATTACATCG	0.625128645	0.835772708	0.710568879	Analog-1	0	64	415
	Analog-2	GATGCCATCG				Analog-2	64	0	100
	Represent	GATGACATCG				Represent	415	100	0
45	Analog-1	TTCTCTTCAG	0.455268631	0.670219881	0.79842901	Analog-1	0	23	112
	Analog-2	TTCTGTTCGG				Analog-2	23	0	286
	Represent	TTCTCTTCGG				Represent	112	286	0
46	Analog-1	AAACTTATGC	0.613435392	0.837533919	0.685630387	Analog-1	0	64	331
	Analog-2	AAACTTGCGC				Analog-2	64	0	85
	Represent	AAACTTGTGC				Represent	331	85	0

47	Analog-1	TGGGGATGCG	0.734510627	0.800840289	0.93140574	Analog-1	0	133	169
	Analog-2	AGAGGATGCG				Analog-2	133	0	727
	Represent	TGAGGATGCG				Represent	169	727	0
48	Analog-1	GACAAAAGCA	0.610308574	0.80354689	0.830161417	Analog-1	0	67	208
	Analog-2	GAAAAAGGCA				Analog-2	67	0	418
	Represent	GACAAAGGCA				Represent	208	418	0
49	Analog-1	AGCCGCAATG	0.697664138	0.826332327	0.746039234	Analog-1	0	160	388
	Analog-2	AGCCGTGATG				Analog-2	160	0	118
	Represent	AGCCGCGATG				Represent	388	118	0
50	Analog-1	CACAGAGGCG	0.686131593	1	0.686131593	Analog-1	0	112	1000
	Analog-2	CACAGAGGGA				Analog-2	112	0	112
	Represent	CACAGAGGCG				Represent	1000	112	0
51	Analog-1	TATCGGCTGC	0.527691874	0.784039431	0.784509563	Analog-1	0	41	159
	Analog-2	TATCAGCGGC				Analog-2	41	0	199
	Represent	TATCGGCGGC				Represent	159	199	0
52	Analog-1	ACGGTAGTCC	0.74325368	0.837266143	0.916861673	Analog-1	0	238	268
	Analog-2	ACGGGAGTCT				Analog-2	238	0	733
	Represent	ACGGGAGTCC				Represent	268	733	0
53	Analog-1	TTCTGCAGGC	0.729438897	0.94445157	0.783592459	Analog-1	0	307	802
	Analog-2	GTCCGCAGGC				Analog-2	307	0	334
	Represent	GTCTGCAGGC				Represent	802	334	0
54	Analog-1	ACTGGATGCA	0.627455038	0.878105474	0.776691032	Analog-1	0	124	424
	Analog-2	GCTGGATGAA				Analog-2	124	0	388
	Represent	GCTGGATGCA				Represent	424	388	0
55	Analog-1	GCTTGCAAAA	0.551537016	0.70501042	0.853010773	Analog-1	0	71	361
	Analog-2	GGTTGCTAAA				Analog-2	71	0	343
	Represent	GGTTGCAAAA				Represent	361	343	0
56	Analog-1	TCTGTCGTCA	0.825021686	0.899003995	0.92664835	Analog-1	0	439	577
	Analog-2	ACTGTCGTCC				Analog-2	439	0	748
	Represent	TCTGTCGTCC				Represent	577	748	0
57	Analog-1	ATCTAGTGGA	0.689535699	0.796417811	0.800135391	Analog-1	0	124	160
	Analog-2	ATCAGGTGGA				Analog-2	124	0	361
	Represent	ATCTGGTGGA				Represent	160	361	0
58	Analog-1	TTGCTCGTAT	0.673986693	0.94270558	0.741704683	Analog-1	0	142	616
	Analog-2	CTTCTCGTAT				Analog-2	142	0	172
	Represent	CTGCTCGTAT				Represent	616	172	0
59	Analog-1	GGTTAAAACA	0.609447098	0.759359605	0.849045924	Analog-1	0	124	241
	Analog-2	GGTTAATAAA				Analog-2	124	0	442
	Represent	GGTTAAAAAA				Represent	241	442	0
60	Analog-1	ACCCCGCGTA	0.895281196	0.964676098	0.931563189	Analog-1	0	735	828
	Analog-2	CCCCCGCGTG				Analog-2	735	0	802
	Represent	ACCCCGCGTG				Represent	828	802	0
61	Analog-1	GAGATGTAGC	0.675052442	0.764349401	0.820487665	Analog-1	0	187	271
	Analog-2	GAGAACTAGC				Analog-2	187	0	316
	Represent	GAGATCTAGC				Represent	271	316	0
62	Analog-1	CATGAAATGA	0.490698972	0.70550628	0.833048378	Analog-1	0	32	196
	Analog-2	CGTAAAATGA				Analog-2	32	0	289
	Represent	CGTGAAATGA				Represent	196	289	0

63	Analog-1	CTCATCGAAT	0.630041277	0.69683669	0.917717615	Analog-1	0	85	91
	Analog-2	CTCATTGAAC				Analog-2	85	0	469
	Represent	CTCATTGAAT				Represent	91	469	0
64	Analog-1	TAGATGTCTT	0.7419982	0.816703453	0.924147495	Analog-1	0	235	496
	Analog-2	TTGATGTCTC				Analog-2	235	0	595
	Represent	TTGATGTCTT				Represent	496	595	0
65	Analog-1	CCCGGAGGGC	0.761857939	0.864906961	0.904567694	Analog-1	0	283	472
	Analog-2	CCCGGTGGGT				Analog-2	283	0	496
	Represent	CCCGGTGGGC				Represent	472	496	0
66	Analog-1	TCATGCAAGA	0.589630173	0.717011284	0.842144884	Analog-1	0	79	103
	Analog-2	GCATTCAAGA				Analog-2	79	0	316
	Represent	TCATTCAAGA				Represent	103	316	0
67	Analog-1	TGTTATGTGA	0.637202526	0.833400762	0.833971585	Analog-1	0	136	391
	Analog-2	TGTGATGTTA				Analog-2	136	0	379
	Represent	TGTGATGTGA				Represent	391	379	0
68	Analog-1	CGATGATAAA	0.689338736	0.878130466	0.83105892	Analog-1	0	202	460
	Analog-2	AGATGAAAAA				Analog-2	202	0	316
	Represent	CGATGAAAAA				Represent	460	316	0
69	Analog-1	GCATATCAAA	0.524225484	0.744554226	0.773448994	Analog-1	0	73	163
	Analog-2	GCGTAGCAAA				Analog-2	73	0	217
	Represent	GCATAGCAAA				Represent	163	217	0
70	Analog-1	ATGAGAATCA	0.527900395	0.712661688	0.859116485	Analog-1	0	35	145
	Analog-2	ACGATAATCA				Analog-2	35	0	292
	Represent	ACGAGAATCA				Represent	145	292	0
71	Analog-1	CGTATGTTCG	0.712010501	0.791766032	0.841236846	Analog-1	0	196	256
	Analog-2	CGTAACTTCG				Analog-2	196	0	418
	Represent	CGTATCTTCG				Represent	256	418	0
72	Analog-1	CACTTGCAAC	0.653396755	0.794076594	0.865647155	Analog-1	0	65	131
	Analog-2	CACATGCCAC				Analog-2	65	0	520
	Represent	CACTTGCCAC				Represent	131	520	0
73	Analog-1	CACCCTGATT	0.556663729	0.701963399	0.833569325	Analog-1	0	55	64
	Analog-2	CACACTGAGT				Analog-2	55	0	658
	Represent	CACACTGATT				Represent	64	658	0
74	Analog-1	CCCCTAAGAA	0.534449115	0.596700302	0.767129835	Analog-1	0	40	37
	Analog-2	CCGATAAGAA				Analog-2	40	0	154
	Represent	CCGCTAAGAA				Represent	37	154	0
75	Analog-1	GGGCCCTGAC	0.756252749	0.843751245	0.915286507	Analog-1	0	358	544
	Analog-2	TGGCCCTCAC				Analog-2	358	0	613
	Represent	GGGCCCTCAC				Represent	544	613	0
76	Analog-1	TACAGTTCTA	0.485499728	0.72381695	0.789895642	Analog-1	0	44	169
	Analog-2	TGCACTTCTA				Analog-2	44	0	226
	Represent	TGCAGTTCTA				Represent	169	226	0
77	Analog-1	ATCCCGGGCG	0.658555389	0.789530248	0.803409385	Analog-1	0	166	193
	Analog-2	ATCCCGGAAG				Analog-2	166	0	469
	Represent	ATCCCGGACG				Represent	193	469	0
78	Analog-1	CCATTCAATA	0.466148275	0.599491606	0.758803347	Analog-1	0	25	112
	Analog-2	CGGTTCAATA				Analog-2	25	0	145
	Represent	CGATTCAATA				Represent	112	145	0

79	Analog-1	CGCCGTCAAC	0.499574821	0.797450247	0.735721595	Analog-1	0	38	184
	Analog-2	CCCCGCCAAC				Analog-2	38	0	295
	Represent	CGCCGCCAAC				Represent	184	295	0
80	Analog-1	GTATTACGAG	0.763935336	0.833642344	0.940489715	Analog-1	0	175	205
	Analog-2	GTATCACGAT				Analog-2	175	0	694
	Represent	GTATCACGAG				Represent	205	694	0
81	Analog-1	GGCCCTACAA	0.371822529	0.672694772	0.749439824	Analog-1	0	20	49
	Analog-2	GTCGCTACAA				Analog-2	20	0	175
	Represent	GGCGCTACAA				Represent	49	175	0
82	Analog-1	GTGCGACAAG	0.810869781	0.870765661	0.937539603	Analog-1	0	274	457
	Analog-2	ATGCGATAAG				Analog-2	274	0	646
	Represent	GTGCGATAAG				Represent	457	646	0
83	Analog-1	ATCGTCCGGA	0.811790374	0.811790374	1	Analog-1	0	238	238
	Analog-2	GGCGTCCGGA				Analog-2	238	0	1000
	Represent	GGCGTCCGGA				Represent	238	1000	0
84	Analog-1	TGGGTTAACA	0.431894335	0.687616988	0.777540291	Analog-1	0	26	208
	Analog-2	TCGATTAACA				Analog-2	26	0	133
	Represent	TCGGTTAACA				Represent	208	133	0
85	Analog-1	TCGAAGCGTG	0.583153742	0.671500928	0.716443358	Analog-1	0	55	67
	Analog-2	TCTAAGCATG				Analog-2	55	0	349
	Represent	TCGTAGCATG				Represent	67	349	0
86	Analog-1	TACCCCTTGG	0.633943859	0.830682137	0.82276417	Analog-1	0	130	292
	Analog-2	TCCCCATTGG				Analog-2	130	0	292
	Represent	TCCCCCTTGG				Represent	292	292	0
87	Analog-1	GATTGTAATA	0.705077603	0.762490471	0.934802328	Analog-1	0	113	127
	Analog-2	GAGTGTAATC				Analog-2	113	0	670
	Represent	GAGTGTAATA				Represent	127	670	0
88	Analog-1	GCCAATACGC	0.676644187	0.81181926	0.8793587	Analog-1	0	115	217
	Analog-2	GCCGATACGG				Analog-2	115	0	562
	Represent	GCCGATACGC				Represent	217	562	0
89	Analog-1	TAGCCCTATG	0.741785979	0.800877611	0.870781058	Analog-1	0	406	640
	Analog-2	TAGCCCTTGG				Analog-2	406	0	478
	Represent	TAGCCCTAGG				Represent	640	478	0
90	Analog-1	ACTGAAATCC	0.582867182	0.758667525	0.816023781	Analog-1	0	111	304
	Analog-2	AGTGAAATCG				Analog-2	111	0	448
	Represent	AGTGAAATCC				Represent	304	448	0
91	Analog-1	GCTCCTGCAT	0.590143329	0.744326505	0.760572359	Analog-1	0	121	448
	Analog-2	GGCCCTGCAT				Analog-2	121	0	169
	Represent	GGTCCTGCAT				Represent	448	169	0
92	Analog-1	CAGTGGAAAA	0.637894037	0.698799684	0.937492574	Analog-1	0	133	175
	Analog-2	CCGTGGAAAC				Analog-2	133	0	739
	Represent	CCGTGGAAAA				Represent	175	739	0
93	Analog-1	GAGTTTAATT	0.540038399	0.647676471	0.647492078	Analog-1	0	34	37
	Analog-2	GAACTTAATT				Analog-2	34	0	40
	Represent	GAGCTTAATT				Represent	37	40	0
94	Analog-1	CCAAATTGTT	0.666893484	0.819572555	0.747724109	Analog-1	0	82	298
	Analog-2	CCAAGCTGTT				Analog-2	82	0	124
	Represent	CCAAACTGTT				Represent	298	124	0

95	Analog-1	GGTGGCAGTG	0.579655289	0.76178867	0.841402958	Analog-1	0	115	397
	Analog-2	GCTAGCAGTG				Analog-2	115	0	247
	Represent	GCTGGCAGTG				Represent	397	247	0
96	Analog-1	CGCCGTGGCC	0.634415934	0.809977367	0.822453877	Analog-1	0	64	379
	Analog-2	CGCCATGTCC				Analog-2	64	0	280
	Represent	CGCCGTGTCC				Represent	379	280	0
97	Analog-1	GTGGGAATGG	0.642852272	0.720463302	0.831172762	Analog-1	0	124	79
	Analog-2	GTATGAATGG				Analog-2	124	0	199
	Represent	GTGTGAATGG				Represent	79	199	0
98	Analog-1	GACCCTGTAT	0.639464421	0.716089353	0.927925128	Analog-1	0	58	67
	Analog-2	CACCCCGTAT				Analog-2	58	0	604
	Represent	GACCCCGTAT				Represent	67	604	0
99	Analog-1	CCATTGCTGG	0.705096438	0.806981028	0.90728229	Analog-1	0	145	208
	Analog-2	CCATGGCTGT				Analog-2	145	0	631
	Represent	CCATGGCTGG				Represent	208	631	0
100	Analog-1	CATCCTCAAT	0.748307264	0.815074065	0.926967219	Analog-1	0	469	454
	Analog-2	CTTCCTCAAC				Analog-2	469	0	730
	Represent	CTTCCTCAAT				Represent	454	730	0

Supplementary 6. The random sets of five Analogs (8 based, 3 mutations), and the calculation of the RS.

		Sequence	Pearson's correlation coefficient	Origin	Represent	Analog 1	Analog 2	Analog 3	Analog 4	Analog 5
1	Origin	ACTTGGGG	Origin	1.00000	0.39839	0.37005	0.45760	0.58444	0.33905	0.49930
	Represent	CCTTCGGC	Represent	0.39839	1.00000	0.53386	0.32958	0.33666	0.74107	0.30759
	Analog 1	CCTTGTGC	Analog 1	0.37005	0.53386	1.00000	0.12570	0.18014	0.24169	0.08934
	Analog 2	ACTCTGGT	Analog 2	0.45760	0.32958	0.12570	1.00000	0.49203	0.31903	0.41290
	Analog 3	TCTAGGGT	Analog 3	0.58444	0.33666	0.18014	0.49203	1.00000	0.23101	0.24867
	Analog 4	ACATCGGC	Analog 4	0.33905	0.74107	0.24169	0.31903	0.23101	1.00000	0.22411
	Analog 5	GATTTGGG	Analog 5	0.49930	0.30759	0.08934	0.41290	0.24867	0.22411	1.00000
2	Origin	CCGCGATA	Origin	1.00000	0.32996	0.41112	0.40839	0.45551	0.41944	0.27843
	Represent	TCGAGGTA	Represent	0.32996	1.00000	0.30197	0.36436	0.28112	0.64511	0.33883
	Analog 1	CCGGGTAA	Analog 1	0.41112	0.30197	1.00000	0.30764	0.39036	0.31858	-0.05261
	Analog 2	ACGTAATA	Analog 2	0.40839	0.36436	0.30764	1.00000	0.59222	0.54858	-0.06690
	Analog 3	CCGTCATG	Analog 3	0.45551	0.28112	0.39036	0.59222	1.00000	0.43813	-0.09175
	Analog 4	TCGATATA	Analog 4	0.41944	0.64511	0.31858	0.54858	0.43813	1.00000	-0.06351
	Analog 5	CATCGGTA	Analog 5	0.27843	0.33883	-0.05261	-0.06690	-0.09175	-0.06351	1.00000
3	Origin	GTTTGTCT	Origin	1.00000	0.06547	0.27535	0.27657	0.35354	0.28337	0.34862
	Represent	GAGTCGCT	Represent	0.06547	1.00000	0.24838	0.73039	0.26683	0.59643	0.14498
	Analog 1	GATACTCT	Analog 1	0.27535	0.24838	1.00000	0.14689	0.27387	0.33002	0.11657
	Analog 2	ATTTCGCT	Analog 2	0.27657	0.73039	0.14689	1.00000	0.18941	0.76061	0.02752
	Analog 3	ATGTATCT	Analog 3	0.35354	0.26683	0.27387	0.18941	1.00000	0.09972	0.59975
	Analog 4	GTTACGCT	Analog 4	0.28337	0.59643	0.33002	0.76061	0.09972	1.00000	0.11027
	Analog 5	GTGTTTCA	Analog 5	0.34862	0.14498	0.11657	0.02752	0.59975	0.11027	1.00000
4	Origin	GCGACAAA	Origin	1.00000	0.31752	0.64755	0.45731	0.19761	0.28269	0.12449
	Represent	CCGAGCCA	Represent	0.31752	1.00000	0.30179	0.36188	0.36414	0.20215	0.05627
	Analog 1	TCGACAGG	Analog 1	0.64755	0.30179	1.00000	0.44876	0.19833	0.13182	-0.03234
	Analog 2	CCGTCATA	Analog 2	0.45731	0.36188	0.44876	1.00000	-0.01170	-0.01366	-0.09059
	Analog 3	GGGACCCA	Analog 3	0.19761	0.36414	0.19833	-0.01170	1.00000	0.30444	-0.08140
	Analog 4	AGGAGAAA	Analog 4	0.28269	0.20215	0.13182	-0.01366	0.30444	1.00000	0.44614
	Analog 5	GTCAGAAA	Analog 5	0.12449	0.05627	-0.03234	-0.09059	-0.08140	0.44614	1.00000
5	Origin	GCGATAGA	Origin	1.00000	0.84893	0.54842	0.22956	0.34384	0.35230	0.30338
	Represent	GCGATAGC	Represent	0.84893	1.00000	0.51431	0.48575	0.31464	0.24483	0.18992
	Analog 1	CCGAGAGG	Analog 1	0.54842	0.51431	1.00000	0.12940	0.00127	0.25138	0.18615
	Analog 2	GTAATAGC	Analog 2	0.22956	0.48575	0.12940	1.00000	-0.01779	0.14993	0.17057
	Analog 3	GCTCTATA	Analog 3	0.34384	0.31464	0.00127	-0.01779	1.00000	-0.09173	0.16127
	Analog 4	AGGACAGA	Analog 4	0.35230	0.24483	0.25138	0.14993	-0.09173	1.00000	0.57020
	Analog 5	TCTACAGA	Analog 5	0.30338	0.18992	0.18615	0.17057	0.16127	0.57020	1.00000
6	Origin	CATATTTA	Origin	1.00000	-0.04695	0.29606	0.49015	0.16426	0.21605	0.17764

	Represent	CCTCCGTG	**Represent**	-0.04695	1.00000	0.37208	0.09849	0.29955	0.17582	0.28590
	Analog 1	GATCCTTA	**Analog 1**	0.29606	0.37208	1.00000	0.16675	-0.04286	0.10238	-0.03804
	Analog 2	CAACTTTG	**Analog 2**	0.49015	0.09849	0.16675	1.00000	-0.02171	0.03247	0.15015
	Analog 3	CCTATCTT	**Analog 3**	0.16426	0.29955	-0.04286	-0.02171	1.00000	0.02640	0.14821
	Analog 4	TATTTGTA	**Analog 4**	0.21605	0.17582	0.10238	0.03247	0.02640	1.00000	0.48465
	Analog 5	CTTATGTG	**Analog 5**	0.17764	0.28590	-0.03804	0.15015	0.14821	0.48465	1.00000
7	**Origin**	ACGCCAGA	**Origin**	1.00000	0.19975	0.27629	0.37566	0.30273	0.41208	0.57552
	Represent	CCCCCGGC	**Represent**	0.19975	1.00000	0.60157	0.51817	0.13596	0.35420	0.31147
	Analog 1	ACCCCCGC	**Analog 1**	0.27629	0.60157	1.00000	0.53025	0.13428	0.11955	0.21052
	Analog 2	AACCCAGC	**Analog 2**	0.37566	0.51817	0.53025	1.00000	0.32600	0.15273	0.28574
	Analog 3	AGACCAAA	**Analog 3**	0.30273	0.13596	0.13428	0.32600	1.00000	0.18545	-0.02353
	Analog 4	ATGCCGTA	**Analog 4**	0.41208	0.35420	0.11955	0.15273	0.18545	1.00000	0.20793
	Analog 5	CCGCAAGC	**Analog 5**	0.57552	0.31147	0.21052	0.28574	-0.02353	0.20793	1.00000
8	**Origin**	CGATTAAA	**Origin**	1.00000	-0.00884	0.21096	0.08036	0.27626	0.33032	0.50847
	Represent	AGTCTCCA	**Represent**	-0.00884	1.00000	0.12023	-0.13087	0.44785	0.12358	0.10748
	Analog 1	ACATTACA	**Analog 1**	0.21096	0.12023	1.00000	0.09018	-0.02963	0.17176	0.25760
	Analog 2	CAATCATA	**Analog 2**	0.08036	-0.13087	0.09018	1.00000	-0.08523	0.19055	0.22205
	Analog 3	GGTCTAAA	**Analog 3**	0.27626	0.44785	-0.02963	-0.08523	1.00000	0.07072	0.06512
	Analog 4	TAATTCAA	**Analog 4**	0.33032	0.12358	0.17176	0.19055	0.07072	1.00000	0.21918
	Analog 5	AGATTATT	**Analog 5**	0.50847	0.10748	0.25760	0.22205	0.06512	0.21918	1.00000
9	**Origin**	AAGGCCGA	**Origin**	1.00000	0.35676	0.45557	0.08643	0.52399	0.38265	0.45143
	Represent	GCGGGCGG	**Represent**	0.35676	1.00000	0.55132	0.34694	0.31953	0.30501	0.22461
	Analog 1	GCGTCCGA	**Analog 1**	0.45557	0.55132	1.00000	-0.05075	0.40735	-0.00040	0.62265
	Analog 2	AATGGCCA	**Analog 2**	0.08643	0.34694	-0.05075	1.00000	0.11061	0.02677	-0.04580
	Analog 3	AATACCGG	**Analog 3**	0.52399	0.31953	0.40735	0.11061	1.00000	0.22899	0.48359
	Analog 4	AAGGATGG	**Analog 4**	0.38265	0.30501	-0.00040	0.02677	0.22899	1.00000	0.00386
	Analog 5	ATGTCCGT	**Analog 5**	0.45143	0.22461	0.62265	-0.04580	0.48359	0.00386	1.00000
10	**Origin**	GTTGTAGG	**Origin**	1.00000	0.29802	0.45916	0.19290	0.18047	0.41263	0.49145
	Represent	GTCGAAGC	**Represent**	0.29802	1.00000	0.39842	0.38044	0.38256	0.44643	0.39445
	Analog 1	GTTAAAGA	**Analog 1**	0.45916	0.39842	1.00000	-0.03372	0.30549	0.17850	0.46297
	Analog 2	TTCGTACG	**Analog 2**	0.19290	0.38044	-0.03372	1.00000	0.02788	0.25703	0.03761
	Analog 3	GTAGAAAG	**Analog 3**	0.18047	0.38256	0.30549	0.02788	1.00000	0.21399	0.51394
	Analog 4	TTAGTAGC	**Analog 4**	0.41263	0.44643	0.17850	0.25703	0.21399	1.00000	0.03185
	Analog 5	GTTGAATA	**Analog 5**	0.49145	0.39445	0.46297	0.03761	0.51394	0.03185	1.00000
11	**Origin**	CGAGCATG	**Origin**	1.00000	0.41080	0.50548	0.52048	0.31836	0.31468	0.45677
	Represent	CGCGCTCG	**Represent**	0.41080	1.00000	0.19164	0.18745	0.36474	0.51745	0.61231
	Analog 1	GTAGCAGG	**Analog 1**	0.50548	0.19164	1.00000	0.28965	0.60584	-0.03001	0.35961
	Analog 2	CGATCAGA	**Analog 2**	0.52048	0.18745	0.28965	1.00000	0.19053	0.34089	0.14863
	Analog 3	CCCGCAGG	**Analog 3**	0.31836	0.36474	0.60584	0.19053	1.00000	-0.07627	0.52725
	Analog 4	CGACCTCG	**Analog 4**	0.31468	0.51745	-0.03001	0.34089	-0.07627	1.00000	-0.00367

	Analog 5	GGCGCATT	**Analog 5**	0.45677	0.61231	0.35961	0.14863	0.52725	-0.00367	1.00000
12	**Origin**	CGTATAAA	**Origin**	1.00000	-0.03717	0.37391	0.19178	0.45934	0.11123	0.41175
	Represent	GGCGCCGA	**Represent**	-0.03717	1.00000	0.13806	0.04027	0.00390	0.15015	0.39363
	Analog 1	GGTATCAC	**Analog 1**	0.37391	0.13806	1.00000	0.09206	0.44909	0.23782	0.00096
	Analog 2	AATATAGA	**Analog 2**	0.19178	0.04027	0.09206	1.00000	0.02184	0.10664	-0.08158
	Analog 3	CGAATCAT	**Analog 3**	0.45934	0.00390	0.44909	0.02184	1.00000	0.16997	0.21367
	Analog 4	CATACCAA	**Analog 4**	0.11123	0.15015	0.23782	0.10664	0.16997	1.00000	-0.02969
	Analog 5	CGCGGAAA	**Analog 5**	0.41175	0.39363	0.00096	-0.08158	0.21367	-0.02969	1.00000
13	**Origin**	AAACAACG	**Origin**	1.00000	0.41126	0.27859	0.45433	0.33519	0.44100	0.58182
	Represent	GACCAGCG	**Represent**	0.41126	1.00000	0.54353	0.25470	0.49157	0.49476	0.34891
	Analog 1	AATCAGCC	**Analog 1**	0.27859	0.54353	1.00000	0.16996	0.56021	0.20491	0.01734
	Analog 2	GAACATAG	**Analog 2**	0.45433	0.25470	0.16996	1.00000	0.31537	0.19357	0.20065
	Analog 3	AGACAGCT	**Analog 3**	0.33519	0.49157	0.56021	0.31537	1.00000	0.23984	0.01353
	Analog 4	CACCAACT	**Analog 4**	0.44100	0.49476	0.20491	0.19357	0.23984	1.00000	0.17762
	Analog 5	GAAATACG	**Analog 5**	0.58182	0.34891	0.01734	0.20065	0.01353	0.17762	1.00000
14	**Origin**	GGTCTCCC	**Origin**	1.00000	0.49092	0.57409	0.14938	0.44730	0.51736	0.55356
	Represent	CGTCTCAC	**Represent**	0.49092	1.00000	0.13169	0.38145	0.23768	0.76740	0.15583
	Analog 1	TATTTCCC	**Analog 1**	0.57409	0.13169	1.00000	0.06391	0.18087	0.14254	0.46694
	Analog 2	GCGCTCAC	**Analog 2**	0.14938	0.38145	0.06391	1.00000	-0.06876	0.15938	-0.07307
	Analog 3	AGTCCTCC	**Analog 3**	0.44730	0.23768	0.18087	-0.06876	1.00000	0.25492	0.32787
	Analog 4	CGTCTCTT	**Analog 4**	0.51736	0.76740	0.14254	0.15938	0.25492	1.00000	0.16715
	Analog 5	TGTAACCC	**Analog 5**	0.55356	0.15583	0.46694	-0.07307	0.32787	0.16715	1.00000
15	**Origin**	CTCGAGCG	**Origin**	1.00000	0.63692	0.34199	0.54006	0.14612	0.44408	0.33293
	Represent	CTCGAGTG	**Represent**	0.63692	1.00000	0.57018	0.27083	0.43372	0.24298	0.38396
	Analog 1	CTCAAGTT	**Analog 1**	0.34199	0.57018	1.00000	0.14194	0.38475	-0.00757	0.43975
	Analog 2	GTAGAGCT	**Analog 2**	0.54006	0.27083	0.14194	1.00000	0.11035	0.34287	0.13750
	Analog 3	CTGCAGTG	**Analog 3**	0.14612	0.43372	0.38475	0.11035	1.00000	-0.07610	0.20956
	Analog 4	CACGCGCT	**Analog 4**	0.44408	0.24298	-0.00757	0.34287	-0.07610	1.00000	-0.00070
	Analog 5	CTCTAGGA	**Analog 5**	0.33293	0.38396	0.43975	0.13750	0.20956	-0.00070	1.00000
16	**Origin**	CCCCGACA	**Origin**	1.00000	0.05676	0.23243	0.20409	0.51148	0.47211	0.41811
	Represent	CGCACCCA	**Represent**	0.05676	1.00000	0.30795	0.37711	-0.01474	-0.01399	0.34499
	Analog 1	CCGCCCCA	**Analog 1**	0.23243	0.30795	1.00000	-0.08519	0.13522	0.16727	0.24440
	Analog 2	CGCGGACG	**Analog 2**	0.20409	0.37711	-0.08519	1.00000	0.12346	-0.05981	-0.01384
	Analog 3	CCCTTACT	**Analog 3**	0.51148	-0.01474	0.13522	0.12346	1.00000	0.35496	0.41526
	Analog 4	CCCCACAA	**Analog 4**	0.47211	-0.01399	0.16727	-0.05981	0.35496	1.00000	0.30884
	Analog 5	CCCACTCA	**Analog 5**	0.41811	0.34499	0.24440	-0.01384	0.41526	0.30884	1.00000
17	**Origin**	CCAAAACA	**Origin**	1.00000	0.15866	0.20576	0.39689	0.28328	0.33088	0.34966
	Represent	GCGTAGCA	**Represent**	0.15866	1.00000	0.20334	0.32741	0.41759	0.44597	0.05024
	Analog 1	GCCAAAGA	**Analog 1**	0.20576	0.20334	1.00000	0.19977	0.32728	0.00856	0.09322
	Analog 2	TCGAAACT	**Analog 2**	0.39689	0.32741	0.19977	1.00000	0.42295	0.07886	0.25319

	Analog 3	CCGTAAGA	**Analog 3**	0.28328	0.41759	0.32728	0.42295	1.00000	-0.09648	0.17195
	Analog 4	AGAAAGCA	**Analog 4**	0.33088	0.44597	0.00856	0.07886	-0.09648	1.00000	0.08767
	Analog 5	CCTAACCT	**Analog 5**	0.34966	0.05024	0.09322	0.25319	0.17195	0.08767	1.00000
18	**Origin**	GCAAGGCC	**Origin**	1.00000	0.80081	0.38430	0.39317	0.55249	0.51808	0.49102
	Represent	GCCAGGCC	**Represent**	0.80081	1.00000	0.32467	0.65087	0.33312	0.37016	0.46988
	Analog 1	GGAGAGCC	**Analog 1**	0.38430	0.32467	1.00000	0.12371	-0.00888	0.51034	-0.06517
	Analog 2	GCCAATCC	**Analog 2**	0.39317	0.65087	0.12371	1.00000	-0.00672	0.18709	0.22132
	Analog 3	TCAAGGTA	**Analog 3**	0.55249	0.33312	-0.00888	-0.00672	1.00000	0.16137	0.36622
	Analog 4	CCACAGCC	**Analog 4**	0.51808	0.37016	0.51034	0.18709	0.16137	1.00000	0.00572
	Analog 5	GCGAGGAT	**Analog 5**	0.49102	0.46988	-0.06517	0.22132	0.36622	0.00572	1.00000
19	**Origin**	TTGACAAC	**Origin**	1.00000	0.57246	0.14487	0.37857	0.30221	0.25560	0.41245
	Represent	TGGACAAG	**Represent**	0.57246	1.00000	0.44409	0.15237	0.26645	0.33126	0.25642
	Analog 1	TGGCCACC	**Analog 1**	0.14487	0.44409	1.00000	0.26483	0.05808	-0.01176	0.10392
	Analog 2	TTGGCACA	**Analog 2**	0.37857	0.15237	0.26483	1.00000	0.47194	-0.01615	0.24076
	Analog 3	TTCGCAAG	**Analog 3**	0.30221	0.26645	0.05808	0.47194	1.00000	0.08761	0.34687
	Analog 4	TCGAGAAG	**Analog 4**	0.25560	0.33126	-0.01176	-0.01615	0.08761	1.00000	0.04005
	Analog 5	TTTTCAAA	**Analog 5**	0.41245	0.25642	0.10392	0.24076	0.34687	0.04005	1.00000
20	**Origin**	GTTACTAA	**Origin**	1.00000	0.23103	0.32536	0.30403	0.37252	0.42930	0.26904
	Represent	GTCGCGAA	**Represent**	0.23103	1.00000	0.08379	0.34663	0.25320	0.14635	0.17432
	Analog 1	GTACCTGA	**Analog 1**	0.32536	0.08379	1.00000	0.08876	0.15564	0.15052	-0.09010
	Analog 2	TCTGCTAA	**Analog 2**	0.30403	0.34663	0.08876	1.00000	0.23971	0.09277	0.02532
	Analog 3	ATCTCTAA	**Analog 3**	0.37252	0.25320	0.15564	0.23971	1.00000	0.38054	0.05664
	Analog 4	TTCACTTA	**Analog 4**	0.42930	0.14635	0.15052	0.09277	0.38054	1.00000	-0.02412
	Analog 5	CTTAGGAA	**Analog 5**	0.26904	0.17432	-0.09010	0.02532	0.05664	-0.02412	1.00000
21	**Origin**	TGTGCAAA	**Origin**	1.00000	0.33842	0.34325	0.18326	0.33065	0.38292	0.22161
	Represent	AGTGAACA	**Represent**	0.33842	1.00000	0.35741	0.33639	0.41393	0.46195	0.03918
	Analog 1	GGTGTAGA	**Analog 1**	0.34325	0.35741	1.00000	-0.02719	0.18140	0.19668	0.45083
	Analog 2	TATTCACA	**Analog 2**	0.18326	0.33639	-0.02719	1.00000	-0.02183	0.07860	-0.07662
	Analog 3	AGTCAAAA	**Analog 3**	0.33065	0.41393	0.18140	-0.02183	1.00000	0.34578	0.18248
	Analog 4	AATGAAAA	**Analog 4**	0.38292	0.46195	0.19668	0.07860	0.34578	1.00000	0.20488
	Analog 5	GGAGTAAA	**Analog 5**	0.22161	0.03918	0.45083	-0.07662	0.18248	0.20488	1.00000
22	**Origin**	GCACCCGC	**Origin**	1.00000	0.75277	0.60369	0.31475	0.23898	0.36401	0.41495
	Represent	GCGCCCGC	**Represent**	0.75277	1.00000	0.54938	0.65360	0.10468	0.34041	0.33596
	Analog 1	GCTAACGC	**Analog 1**	0.60369	0.54938	1.00000	0.00203	-0.12255	0.27512	0.44681
	Analog 2	ACGCCCTC	**Analog 2**	0.31475	0.65360	0.00203	1.00000	0.14468	0.31626	-0.06569
	Analog 3	GTACCACC	**Analog 3**	0.23898	0.10468	-0.12255	0.14468	1.00000	0.32653	-0.09301
	Analog 4	GCTCCATC	**Analog 4**	0.36401	0.34041	0.27512	0.31626	0.32653	1.00000	-0.12087
	Analog 5	GGATTCGC	**Analog 5**	0.41495	0.33596	0.44681	-0.06569	-0.09301	-0.12087	1.00000
23	**Origin**	AGGGGAGT	**Origin**	1.00000	0.21150	0.13472	0.58100	0.30532	0.47652	0.47370
	Represent	CCGCGAGG	**Represent**	0.21150	1.00000	0.45397	0.15389	0.03396	0.46900	0.09703

	Analog 1	ATGCGGGT	**Analog 1**	0.13472	0.45397	1.00000	0.04457	0.00437	0.00522	0.08997
	Analog 2	TGGGGTGG	**Analog 2**	0.58100	0.15389	0.04457	1.00000	0.16072	0.33430	0.22028
	Analog 3	ATCGGATT	**Analog 3**	0.30532	0.03396	0.00437	0.16072	1.00000	0.41649	-0.00589
	Analog 4	CCGGGATT	**Analog 4**	0.47652	0.46900	0.00522	0.33430	0.41649	1.00000	0.21479
	Analog 5	CAGGTAGT	**Analog 5**	0.47370	0.09703	0.08997	0.22028	-0.00589	0.21479	1.00000
24	**Origin**	GATGAAGC	**Origin**	1.00000	0.51510	0.36165	0.17793	0.43243	0.18096	0.51654
	Represent	CAGAAAGC	**Represent**	0.51510	1.00000	0.31896	0.22526	0.18732	0.45207	0.41748
	Analog 1	GCTTGAGC	**Analog 1**	0.36165	0.31896	1.00000	0.06389	-0.04421	-0.08147	0.62379
	Analog 2	CATTAACC	**Analog 2**	0.17793	0.22526	0.06389	1.00000	0.54289	0.53959	0.01294
	Analog 3	CATGAACG	**Analog 3**	0.43243	0.18732	-0.04421	0.54289	1.00000	0.28264	-0.03856
	Analog 4	GAGAAACC	**Analog 4**	0.18096	0.45207	-0.08147	0.53959	0.28264	1.00000	0.07957
	Analog 5	GAATGAGC	**Analog 5**	0.51654	0.41748	0.62379	0.01294	-0.03856	0.07957	1.00000
25	**Origin**	GCATGCGG	**Origin**	1.00000	0.68348	0.36535	0.52105	0.49649	0.16148	0.68705
	Represent	GCACGCGC	**Represent**	0.68348	1.00000	0.18045	0.61990	0.39176	0.32869	0.48292
	Analog 1	TCATGTGT	**Analog 1**	0.36535	0.18045	1.00000	0.13761	0.48166	0.04297	0.24654
	Analog 2	GCAACCGC	**Analog 2**	0.52105	0.61990	0.13761	1.00000	0.43328	-0.02234	0.25853
	Analog 3	TCATACGT	**Analog 3**	0.49649	0.39176	0.48166	0.43328	1.00000	-0.01165	0.40158
	Analog 4	GAACGGGG	**Analog 4**	0.16148	0.32869	0.04297	-0.02234	-0.01165	1.00000	0.04492
	Analog 5	TTATGCGA	**Analog 5**	0.68705	0.48292	0.24654	0.25853	0.40158	0.04492	1.00000
26	**Origin**	CTATAAGT	**Origin**	1.00000	0.12914	0.27201	0.30602	0.28056	0.35488	0.45445
	Represent	TCTTCGGT	**Represent**	0.12914	1.00000	-0.09270	0.75382	-0.08450	0.24625	0.13833
	Analog 1	CTATTCTT	**Analog 1**	0.27201	-0.09270	1.00000	0.06222	0.21417	-0.08908	0.01450
	Analog 2	TTATCGGT	**Analog 2**	0.30602	0.75382	0.06222	1.00000	-0.09039	-0.01794	0.07939
	Analog 3	CTTCAATT	**Analog 3**	0.28056	-0.08450	0.21417	-0.09039	1.00000	0.10914	0.04698
	Analog 4	CCTTAAGA	**Analog 4**	0.35488	0.24625	-0.08908	-0.01794	0.10914	1.00000	0.36015
	Analog 5	TCATAAGC	**Analog 5**	0.45445	0.13833	0.01450	0.07939	0.04698	0.36015	1.00000
27	**Origin**	ATTTCTAC	**Origin**	1.00000	0.29983	0.32313	0.37261	0.41293	0.38409	0.17167
	Represent	ATTCGAAC	**Represent**	0.29983	1.00000	0.18655	0.17006	0.12004	0.20204	0.59928
	Analog 1	ATTAATAG	**Analog 1**	0.32313	0.18655	1.00000	0.31738	0.63797	-0.02282	0.03635
	Analog 2	ATTTAGAA	**Analog 2**	0.37261	0.17006	0.31738	1.00000	0.43320	0.02433	-0.02537
	Analog 3	TTTTATAG	**Analog 3**	0.41293	0.12004	0.63797	0.43320	1.00000	0.13190	0.04456
	Analog 4	TTGTCAAC	**Analog 4**	0.38409	0.20204	-0.02282	0.02433	0.13190	1.00000	0.03060
	Analog 5	AGTCGTAC	**Analog 5**	0.17167	0.59928	0.03635	-0.02537	0.04456	0.03060	1.00000
28	**Origin**	GACTTTTA	**Origin**	1.00000	0.29228	0.52664	0.29027	0.59512	0.44965	0.48296
	Represent	GACGGATG	**Represent**	0.29228	1.00000	0.27834	0.49869	0.42063	0.28748	0.25723
	Analog 1	AACTCTTG	**Analog 1**	0.52664	0.27834	1.00000	0.30867	0.57910	0.30227	0.48680
	Analog 2	GACGCTAA	**Analog 2**	0.29027	0.49869	0.30867	1.00000	0.14394	0.17811	0.37969
	Analog 3	TACTTATG	**Analog 3**	0.59512	0.42063	0.57910	0.14394	1.00000	0.35605	0.39907
	Analog 4	GACTGCTT	**Analog 4**	0.44965	0.28748	0.30227	0.17811	0.35605	1.00000	0.36349
	Analog 5	GACTCAAA	**Analog 5**	0.48296	0.25723	0.48680	0.37969	0.39907	0.36349	1.00000

29	**Origin**	CCCTCTGC	**Origin**	1.00000	0.36829	0.35837	0.24957	0.35734	0.23714	0.42849
	Represent	ACATCCGC	**Represent**	0.36829	1.00000	0.71499	0.39088	-0.02878	0.53119	0.24490
	Analog 1	CCACCCGC	**Analog 1**	0.35837	0.71499	1.00000	0.11630	-0.06738	0.37923	0.22233
	Analog 2	ACATCTCC	**Analog 2**	0.24957	0.39088	0.11630	1.00000	0.03140	0.05572	-0.01131
	Analog 3	TCCTTTTC	**Analog 3**	0.35734	-0.02878	-0.06738	0.03140	1.00000	0.06713	0.17488
	Analog 4	CACTCCGA	**Analog 4**	0.23714	0.53119	0.37923	0.05572	0.06713	1.00000	0.03499
	Analog 5	GCCACAGC	**Analog 5**	0.42849	0.24490	0.22233	-0.01131	0.17488	0.03499	1.00000
30	**Origin**	TCGCCCGT	**Origin**	1.00000	0.39383	0.39577	0.49805	0.58911	0.47662	0.28660
	Represent	TGGCCTGG	**Represent**	0.39383	1.00000	0.82617	0.42821	0.03967	0.22285	0.44455
	Analog 1	TGGCCTAT	**Analog 1**	0.39577	0.82617	1.00000	0.28853	0.00088	0.20017	0.31782
	Analog 2	TGTCCCGG	**Analog 2**	0.49805	0.42821	0.28853	1.00000	0.35611	0.43311	0.34144
	Analog 3	CCGACCGA	**Analog 3**	0.58911	0.03967	0.00088	0.35611	1.00000	0.61142	-0.01144
	Analog 4	AGGACCGT	**Analog 4**	0.47662	0.22285	0.20017	0.43311	0.61142	1.00000	0.10430
	Analog 5	TTTCCTGT	**Analog 5**	0.28660	0.44455	0.31782	0.34144	-0.01144	0.10430	1.00000
31	**Origin**	AGGACTCA	**Origin**	1.00000	0.65832	0.52139	0.46070	0.27684	0.33553	0.30873
	Represent	GGGATTCA	**Represent**	0.65832	1.00000	0.53785	0.62437	0.36562	0.52268	0.48467
	Analog 1	GGGACACT	**Analog 1**	0.52139	0.53785	1.00000	0.14496	0.13402	-0.01384	-0.02245
	Analog 2	TTGATTCA	**Analog 2**	0.46070	0.62437	0.14496	1.00000	0.60785	0.63816	0.55347
	Analog 3	ATGATCCA	**Analog 3**	0.27684	0.36562	0.13402	0.60785	1.00000	0.38275	0.25324
	Analog 4	ATAATTCA	**Analog 4**	0.33553	0.52268	-0.01384	0.63816	0.38275	1.00000	0.79570
	Analog 5	AAAATTCA	**Analog 5**	0.30873	0.48467	-0.02245	0.55347	0.25324	0.79570	1.00000
32	**Origin**	CCAGCTGT	**Origin**	1.00000	0.35231	0.34354	0.35354	0.40473	0.25256	0.50742
	Represent	GCGGCCGT	**Represent**	0.35231	1.00000	0.28917	0.71749	0.07342	0.25794	0.31023
	Analog 1	CCAAGCGT	**Analog 1**	0.34354	0.28917	1.00000	0.05383	0.17780	0.03462	0.06235
	Analog 2	GCGGCGGT	**Analog 2**	0.35354	0.71749	0.05383	1.00000	0.07332	0.25232	0.31160
	Analog 3	AGAACTGT	**Analog 3**	0.40473	0.07342	0.17780	0.07332	1.00000	0.23291	0.40340
	Analog 4	CAGGTTGT	**Analog 4**	0.25256	0.25794	0.03462	0.25232	0.23291	1.00000	0.10828
	Analog 5	AGAGCAGT	**Analog 5**	0.50742	0.31023	0.06235	0.31160	0.40340	0.10828	1.00000
33	**Origin**	CTTTGGCG	**Origin**	1.00000	0.24815	0.61242	0.25692	0.29504	0.36747	0.53333
	Represent	TGTTGTCA	**Represent**	0.24815	1.00000	0.28782	0.01709	0.09251	0.74352	0.06966
	Analog 1	TGTGGGCG	**Analog 1**	0.61242	0.28782	1.00000	-0.01611	0.13873	0.04471	0.41346
	Analog 2	CTTTCGTC	**Analog 2**	0.25692	0.01709	-0.01611	1.00000	-0.00951	0.13208	0.43942
	Analog 3	CAATGGGG	**Analog 3**	0.29504	0.09251	0.13873	-0.00951	1.00000	0.10825	-0.01559
	Analog 4	TTTTGTCA	**Analog 4**	0.36747	0.74352	0.04471	0.13208	0.10825	1.00000	0.07796
	Analog 5	ACTTCGCG	**Analog 5**	0.53333	0.06966	0.41346	0.43942	-0.01559	0.07796	1.00000
34	**Origin**	GGCACCTC	**Origin**	1.00000	0.31834	0.17460	0.55455	0.28411	0.30856	0.23478
	Represent	GGCGCGCC	**Represent**	0.31834	1.00000	0.03662	0.67414	0.36788	0.31036	0.15495
	Analog 1	GGAATCGC	**Analog 1**	0.17460	0.03662	1.00000	0.08457	-0.06376	0.10171	-0.09197
	Analog 2	GGCACGCA	**Analog 2**	0.55455	0.67414	0.08457	1.00000	-0.00518	0.47153	0.26147
	Analog 3	GACGCCTG	**Analog 3**	0.28411	0.36788	-0.06376	-0.00518	1.00000	0.07000	-0.01181

	Analog 4	GGGACGTG	**Analog 4**	0.30856	0.31036	0.10171	0.47153	0.07000	1.00000	0.07560
	Analog 5	GTCACACC	**Analog 5**	0.23478	0.15495	-0.09197	0.26147	-0.01181	0.07560	1.00000
35	**Origin**	CCGAAGAA	**Origin**	1.00000	0.30420	0.37490	0.19094	0.46881	0.32796	0.17660
	Represent	TCGTTGGA	**Represent**	0.30420	1.00000	0.17468	0.30083	0.57259	-0.07391	-0.07105
	Analog 1	TTGATGAA	**Analog 1**	0.37490	0.17468	1.00000	0.04007	0.08313	0.21371	-0.01882
	Analog 2	CTTAAGGA	**Analog 2**	0.19094	0.30083	0.04007	1.00000	-0.08369	0.39982	0.23293
	Analog 3	TCGTATAA	**Analog 3**	0.46881	0.57259	0.08313	-0.08369	1.00000	-0.05395	-0.09640
	Analog 4	CTCAAGAG	**Analog 4**	0.32796	-0.07391	0.21371	0.39982	-0.05395	1.00000	0.42800
	Analog 5	CACAAGTA	**Analog 5**	0.17660	-0.07105	-0.01882	0.23293	-0.09640	0.42800	1.00000
36	**Origin**	AGACCACC	**Origin**	1.00000	0.37480	0.48192	0.21910	0.47583	0.32278	0.33583
	Represent	TGCGCACC	**Represent**	0.37480	1.00000	0.11547	0.28477	0.21324	0.84118	0.17487
	Analog 1	TGACCCCT	**Analog 1**	0.48192	0.11547	1.00000	0.20761	0.40762	0.02691	0.28676
	Analog 2	AGCCGCCC	**Analog 2**	0.21910	0.28477	0.20761	1.00000	0.17369	0.24119	-0.01275
	Analog 3	TGACATCC	**Analog 3**	0.47583	0.21324	0.40762	0.17369	1.00000	-0.02390	0.10477
	Analog 4	AGCGCACA	**Analog 4**	0.32278	0.84118	0.02691	0.24119	-0.02390	1.00000	0.09548
	Analog 5	TGGCCAAC	**Analog 5**	0.33583	0.17487	0.28676	-0.01275	0.10477	0.09548	1.00000
37	**Origin**	AGAGCCTT	**Origin**	1.00000	0.11110	0.12236	0.35861	0.16937	0.29655	0.15855
	Represent	AGGGGCGT	**Represent**	0.11110	1.00000	0.32912	0.03086	0.14339	0.00141	0.18171
	Analog 1	ACAGTCGT	**Analog 1**	0.12236	0.32912	1.00000	-0.03235	0.05654	0.15132	-0.12926
	Analog 2	AGATTATT	**Analog 2**	0.35861	0.03086	-0.03235	1.00000	0.06252	-0.02405	0.17315
	Analog 3	AAAGGGTT	**Analog 3**	0.16937	0.14339	0.05654	0.06252	1.00000	0.32751	-0.03515
	Analog 4	AAAGACTA	**Analog 4**	0.29655	0.00141	0.15132	-0.02405	0.32751	1.00000	-0.10134
	Analog 5	AGGCCTTT	**Analog 5**	0.15855	0.18171	-0.12926	0.17315	-0.03515	-0.10134	1.00000
38	**Origin**	CCATTGCT	**Origin**	1.00000	0.72318	0.37524	0.39826	0.30105	0.50748	0.31314
	Represent	CCAGTGCC	**Represent**	0.72318	1.00000	0.24421	0.44023	0.42783	0.51991	0.20376
	Analog 1	GCGTGGCT	**Analog 1**	0.37524	0.24421	1.00000	0.18543	0.28637	0.45148	0.07299
	Analog 2	CCATGTCC	**Analog 2**	0.39826	0.44023	0.18543	1.00000	0.17088	0.18961	0.32376
	Analog 3	GCAGTACT	**Analog 3**	0.30105	0.42783	0.28637	0.17088	1.00000	0.26841	0.32408
	Analog 4	GCCTTGCC	**Analog 4**	0.50748	0.51991	0.45148	0.18961	0.26841	1.00000	0.04380
	Analog 5	ACACTTCT	**Analog 5**	0.31314	0.20376	0.07299	0.32376	0.32408	0.04380	1.00000
39	**Origin**	AGTACACC	**Origin**	1.00000	0.17560	0.25071	0.37135	0.33025	0.32078	0.35461
	Represent	CGGCCGCC	**Represent**	0.17560	1.00000	0.90810	0.21175	0.28067	0.19372	0.44501
	Analog 1	AGGCCGCC	**Analog 1**	0.25071	0.90810	1.00000	0.04302	0.13659	0.26650	0.46186
	Analog 2	CGTACCCT	**Analog 2**	0.37135	0.21175	0.04302	1.00000	0.67963	0.05757	0.39530
	Analog 3	CGCACCCC	**Analog 3**	0.33025	0.28067	0.13659	0.67963	1.00000	0.05345	0.16700
	Analog 4	AGGATACG	**Analog 4**	0.32078	0.19372	0.26650	0.05757	0.05345	1.00000	0.05208
	Analog 5	GGTACGCT	**Analog 5**	0.35461	0.44501	0.46186	0.39530	0.16700	0.05208	1.00000
40	**Origin**	ACTACTTT	**Origin**	1.00000	0.35812	0.39375	0.47294	0.19490	0.26454	0.28136
	Represent	ACCACCTG	**Represent**	0.35812	1.00000	0.10744	0.24910	-0.03355	0.47268	0.53114
	Analog 1	GATACTGT	**Analog 1**	0.39375	0.10744	1.00000	-0.03723	0.03529	0.13242	-0.07393

	Analog 2	ACTTTTTG	**Analog 2**	0.47294	0.24910	-0.03723	1.00000	0.05734	-0.07850	0.14909
	Analog 3	AAGAGTTT	**Analog 3**	0.19490	-0.03355	0.03529	0.05734	1.00000	0.22616	0.04654
	Analog 4	ATGACCTT	**Analog 4**	0.26454	0.47268	0.13242	-0.07850	0.22616	1.00000	0.03989
	Analog 5	ACCAAATT	**Analog 5**	0.28136	0.53114	-0.07393	0.14909	0.04654	0.03989	1.00000
41	**Origin**	GGGCCCAT	**Origin**	1.00000	0.26214	0.46813	0.24389	0.27019	0.37226	0.51232
	Represent	GCGGCCAC	**Represent**	0.26214	1.00000	0.47635	-0.02896	0.42188	0.29453	0.32160
	Analog 1	GCGCCCCG	**Analog 1**	0.46813	0.47635	1.00000	-0.07275	0.00056	0.39872	0.26932
	Analog 2	GGTACAAT	**Analog 2**	0.24389	-0.02896	-0.07275	1.00000	0.09563	-0.06013	0.04850
	Analog 3	AGGGCTAT	**Analog 3**	0.27019	0.42188	0.00056	0.09563	1.00000	-0.00024	0.02710
	Analog 4	TCGCGCAT	**Analog 4**	0.37226	0.29453	0.39872	-0.06013	-0.00024	1.00000	0.11452
	Analog 5	TGACCCAC	**Analog 5**	0.51232	0.32160	0.26932	0.04850	0.02710	0.11452	1.00000
42	**Origin**	CGCCACGT	**Origin**	1.00000	0.89011	0.41904	0.58478	0.51988	0.28745	0.37784
	Represent	CGCCACGC	**Represent**	0.89011	1.00000	0.39484	0.72393	0.43010	0.26987	0.35631
	Analog 1	CTCCACAA	**Analog 1**	0.41904	0.39484	1.00000	0.14919	-0.00220	0.37639	0.15557
	Analog 2	CGCCTAGC	**Analog 2**	0.58478	0.72393	0.14919	1.00000	0.28962	0.16682	0.23335
	Analog 3	AGCGTCGT	**Analog 3**	0.51988	0.43010	-0.00220	0.28962	1.00000	-0.05037	0.56791
	Analog 4	CACCATTT	**Analog 4**	0.28745	0.26987	0.37639	0.16682	-0.05037	1.00000	0.09621
	Analog 5	AGCGACTT	**Analog 5**	0.37784	0.35631	0.15557	0.23335	0.56791	0.09621	1.00000
43	**Origin**	TGTTAGCC	**Origin**	1.00000	0.45396	0.46861	0.42660	0.54736	0.58313	0.19257
	Represent	TATCCGCC	**Represent**	0.45396	1.00000	0.35048	0.19335	0.29266	0.64657	0.10379
	Analog 1	AGGTGGCC	**Analog 1**	0.46861	0.35048	1.00000	0.13252	0.26462	0.38767	-0.00787
	Analog 2	TGTACCCC	**Analog 2**	0.42660	0.19335	0.13252	1.00000	0.10077	0.45978	-0.00619
	Analog 3	TGACAGCT	**Analog 3**	0.54736	0.29266	0.26462	0.10077	1.00000	0.28068	0.11248
	Analog 4	GGTACGCC	**Analog 4**	0.58313	0.64657	0.38767	0.45978	0.28068	1.00000	-0.00993
	Analog 5	TATTAACT	**Analog 5**	0.19257	0.10379	-0.00787	-0.00619	0.11248	-0.00993	1.00000
44	**Origin**	AGATTATA	**Origin**	1.00000	0.03715	0.21426	0.38589	0.23326	0.33054	0.14159
	Represent	GGGTAACG	**Represent**	0.03715	1.00000	0.39192	0.40546	0.18645	0.57090	0.32557
	Analog 1	TGGTTAGA	**Analog 1**	0.21426	0.39192	1.00000	0.02200	0.05359	0.58585	0.22117
	Analog 2	AGACTACG	**Analog 2**	0.38589	0.40546	0.02200	1.00000	0.21093	0.02702	-0.08497
	Analog 3	GGTCTATA	**Analog 3**	0.23326	0.18645	0.05359	0.21093	1.00000	0.36838	0.05045
	Analog 4	GGGTTATC	**Analog 4**	0.33054	0.57090	0.58585	0.02702	0.36838	1.00000	0.32169
	Analog 5	ATGTAATA	**Analog 5**	0.14159	0.32557	0.22117	-0.08497	0.05045	0.32169	1.00000
45	**Origin**	TTCAAGGA	**Origin**	1.00000	0.56316	0.48750	0.36562	0.20101	0.10925	0.55234
	Represent	TTCGAGGG	**Represent**	0.56316	1.00000	0.48905	0.43450	0.03723	0.03396	0.22046
	Analog 1	TATGAGGA	**Analog 1**	0.48750	0.48905	1.00000	0.22825	-0.07612	-0.05691	-0.07795
	Analog 2	TTAAGGGG	**Analog 2**	0.36562	0.43450	0.22825	1.00000	0.05788	0.45655	0.05332
	Analog 3	TTGAATAA	**Analog 3**	0.20101	0.03723	-0.07612	0.05788	1.00000	0.56713	0.43847
	Analog 4	TTGAGGAA	**Analog 4**	0.10925	0.03396	-0.05691	0.45655	0.56713	1.00000	0.11420
	Analog 5	TTCAATAG	**Analog 5**	0.55234	0.22046	-0.07795	0.05332	0.43847	0.11420	1.00000
46	**Origin**	CACGTCAG	**Origin**	1.00000	-0.01653	0.22453	0.48096	0.40177	0.30868	0.31793

	Represent	CGGGCCCG	**Represent**	-0.01653	1.00000	0.32192	0.33695	0.33703	0.18013	0.15930
	Analog 1	CAAATCCG	**Analog 1**	0.22453	0.32192	1.00000	-0.06255	-0.06166	0.07309	-0.02971
	Analog 2	TTCGCCAG	**Analog 2**	0.48096	0.33695	-0.06255	1.00000	0.88241	0.16031	0.09367
	Analog 3	CTCGCCAA	**Analog 3**	0.40177	0.33703	-0.06166	0.88241	1.00000	0.07425	-0.00229
	Analog 4	CGTTTCAG	**Analog 4**	0.30868	0.18013	0.07309	0.16031	0.07425	1.00000	0.08131
	Analog 5	TAGGTTAG	**Analog 5**	0.31793	0.15930	-0.02971	0.09367	-0.00229	0.08131	1.00000
47	**Origin**	GTGTTGAC	**Origin**	1.00000	0.37110	0.37025	0.27383	0.42197	0.24434	0.14490
	Represent	GGGTTCAC	**Represent**	0.37110	1.00000	0.31586	0.35618	0.09238	0.52486	0.35376
	Analog 1	GGACTGAC	**Analog 1**	0.37025	0.31586	1.00000	0.64995	-0.12906	0.11997	0.29730
	Analog 2	GGATAGAC	**Analog 2**	0.27383	0.35618	0.64995	1.00000	-0.04078	0.12688	0.17588
	Analog 3	GTGTAACC	**Analog 3**	0.42197	0.09238	-0.12906	-0.04078	1.00000	-0.08962	-0.06168
	Analog 4	GATTTCAC	**Analog 4**	0.24434	0.52486	0.11997	0.12688	-0.08962	1.00000	-0.07961
	Analog 5	GGGGTGTC	**Analog 5**	0.14490	0.35376	0.29730	0.17588	-0.06168	-0.07961	1.00000
48	**Origin**	GCCAAGTA	**Origin**	1.00000	0.58696	0.47530	0.48256	0.40497	0.46605	0.26627
	Represent	TCCAAGGA	**Represent**	0.58696	1.00000	0.21336	0.41292	0.22300	0.24868	0.32158
	Analog 1	GCCTAACA	**Analog 1**	0.47530	0.21336	1.00000	0.28134	-0.08928	-0.08546	0.17797
	Analog 2	CCCATATA	**Analog 2**	0.48256	0.41292	0.28134	1.00000	-0.03522	0.01012	0.01367
	Analog 3	GATAAGTT	**Analog 3**	0.40497	0.22300	-0.08928	-0.03522	1.00000	0.57615	-0.02500
	Analog 4	TTAAAGTA	**Analog 4**	0.46605	0.24868	-0.08546	0.01012	0.57615	1.00000	-0.01199
	Analog 5	GCGAGGGA	**Analog 5**	0.26627	0.32158	0.17797	0.01367	-0.02500	-0.01199	1.00000
49	**Origin**	CCTGAGTC	**Origin**	1.00000	0.27229	0.43702	0.44644	0.28325	0.43665	0.53082
	Represent	GCCGTGTC	**Represent**	0.27229	1.00000	0.26668	0.39773	0.55625	0.47347	0.16646
	Analog 1	CCTGTGGG	**Analog 1**	0.43702	0.26668	1.00000	0.04004	-0.00545	0.41942	0.15805
	Analog 2	GCAGAGTT	**Analog 2**	0.44644	0.39773	0.04004	1.00000	0.18483	0.14764	0.35379
	Analog 3	TCCGAATC	**Analog 3**	0.28325	0.55625	-0.00545	0.18483	1.00000	0.08497	0.02774
	Analog 4	GTTGTGTC	**Analog 4**	0.43665	0.47347	0.41942	0.14764	0.08497	1.00000	0.19158
	Analog 5	ACTTAGTA	**Analog 5**	0.53082	0.16646	0.15805	0.35379	0.02774	0.19158	1.00000
50	**Origin**	AGTGCCTT	**Origin**	1.00000	0.41060	0.14739	0.35689	0.55815	0.14541	0.16289
	Represent	CGCGCCCT	**Represent**	0.41060	1.00000	0.21162	0.38228	0.53645	-0.00873	0.42074
	Analog 1	ACCGGCTT	**Analog 1**	0.14739	0.21162	1.00000	0.00814	0.04670	0.54631	0.28675
	Analog 2	CGAGCGTT	**Analog 2**	0.35689	0.38228	0.00814	1.00000	0.19705	-0.07497	0.22682
	Analog 3	CCTGCCCT	**Analog 3**	0.55815	0.53645	0.04670	0.19705	1.00000	0.25462	-0.06160
	Analog 4	ACTGGCAT	**Analog 4**	0.14541	-0.00873	0.54631	-0.07497	0.25462	1.00000	-0.06601
	Analog 5	AGCGAGTT	**Analog 5**	0.16289	0.42074	0.28675	0.22682	-0.06160	-0.06601	1.00000
51	**Origin**	CCTGTGTC	**Origin**	1.00000	0.39165	0.29104	0.42318	0.28850	0.27150	0.40809
	Represent	GCTGCGTG	**Represent**	0.39165	1.00000	0.14396	0.12328	0.77970	0.29349	0.20633
	Analog 1	CTTGATTC	**Analog 1**	0.29104	0.14396	1.00000	0.33956	0.36424	-0.08143	-0.01677
	Analog 2	CTTGTGGG	**Analog 2**	0.42318	0.12328	0.33956	1.00000	0.30540	0.36145	0.25035
	Analog 3	CTTGCGTG	**Analog 3**	0.28850	0.77970	0.36424	0.30540	1.00000	-0.02330	0.23456
	Analog 4	GCTATGGC	**Analog 4**	0.27150	0.29349	-0.08143	0.36145	-0.02330	1.00000	0.07992

	Analog 5	CGAGTGTG	**Analog 5**	0.40809	0.20633	-0.01677	0.25035	0.23456	0.07992	1.00000
52	**Origin**	GTTGCAAC	**Origin**	1.00000	0.35589	0.25921	0.25563	0.40911	0.50013	0.39740
	Represent	GTTCCCAC	**Represent**	0.35589	1.00000	0.24279	0.58988	0.21629	0.07464	0.51175
	Analog 1	GTCCGAAC	**Analog 1**	0.25921	0.24279	1.00000	0.31472	0.09433	0.04226	0.21969
	Analog 2	GTCACCAC	**Analog 2**	0.25563	0.58988	0.31472	1.00000	0.28560	0.07298	0.11730
	Analog 3	GTTACACT	**Analog 3**	0.40911	0.21629	0.09433	0.28560	1.00000	0.43345	0.18683
	Analog 4	GTGGCACG	**Analog 4**	0.50013	0.07464	0.04226	0.07298	0.43345	1.00000	0.09368
	Analog 5	AATCCAAC	**Analog 5**	0.39740	0.51175	0.21969	0.11730	0.18683	0.09368	1.00000
53	**Origin**	CAGTCGAT	**Origin**	1.00000	0.20214	0.42981	0.41333	0.17193	0.35280	0.49149
	Represent	CGCACGTT	**Represent**	0.20214	1.00000	0.34870	0.15399	0.19022	0.00636	0.45009
	Analog 1	CATACGGT	**Analog 1**	0.42981	0.34870	1.00000	0.22001	0.12742	-0.05555	0.27324
	Analog 2	TCGCCGAT	**Analog 2**	0.41333	0.15399	0.22001	1.00000	-0.07236	0.07607	0.28897
	Analog 3	CACTTGTT	**Analog 3**	0.17193	0.19022	0.12742	-0.07236	1.00000	-0.08333	-0.02360
	Analog 4	TGGTCAAT	**Analog 4**	0.35280	0.00636	-0.05555	0.07607	-0.08333	1.00000	0.18251
	Analog 5	CGTTCGAG	**Analog 5**	0.49149	0.45009	0.27324	0.28897	-0.02360	0.18251	1.00000
54	**Origin**	ATTGTAAG	**Origin**	1.00000	0.30189	0.20527	0.22603	0.23698	0.29762	0.29952
	Represent	AACGTCAG	**Represent**	0.30189	1.00000	0.10562	0.32577	0.63651	0.14425	0.36976
	Analog 1	AGAGTAGG	**Analog 1**	0.20527	0.10562	1.00000	-0.02084	-0.02205	0.38663	-0.08272
	Analog 2	ATCGAAAC	**Analog 2**	0.22603	0.32577	-0.02084	1.00000	0.66864	0.03396	-0.03535
	Analog 3	AACGAAAG	**Analog 3**	0.23698	0.63651	-0.02205	0.66864	1.00000	-0.01062	0.02924
	Analog 4	CTAGTATG	**Analog 4**	0.29762	0.14425	0.38663	0.03396	-0.01062	1.00000	-0.03200
	Analog 5	TTTCTCAG	**Analog 5**	0.29952	0.36976	-0.08272	-0.03535	0.02924	-0.03200	1.00000
55	**Origin**	TGCCCAGT	**Origin**	1.00000	0.39254	0.40838	0.30202	0.36779	0.43786	0.41583
	Represent	CACCGAGT	**Represent**	0.39254	1.00000	-0.01770	0.31535	0.06027	0.49099	0.79589
	Analog 1	TGCAAATT	**Analog 1**	0.40838	-0.01770	1.00000	-0.04246	0.38762	-0.05631	-0.01229
	Analog 2	TCCCTTGT	**Analog 2**	0.30202	0.31535	-0.04246	1.00000	0.08193	0.28888	0.33454
	Analog 3	GGCACGGT	**Analog 3**	0.36779	0.06027	0.38762	0.08193	1.00000	0.11527	0.06848
	Analog 4	CACCCCGT	**Analog 4**	0.43786	0.49099	-0.05631	0.28888	0.11527	1.00000	0.28142
	Analog 5	ATCCGAGT	**Analog 5**	0.41583	0.79589	-0.01229	0.33454	0.06848	0.28142	1.00000
56	**Origin**	CGAGATCA	**Origin**	1.00000	0.22326	0.42395	0.47858	0.12113	0.40610	0.35829
	Represent	AGGGATGA	**Represent**	0.22326	1.00000	0.24195	0.08920	0.27247	0.07224	0.67821
	Analog 1	ATAGATAA	**Analog 1**	0.42395	0.24195	1.00000	-0.02765	0.18400	0.04270	0.22015
	Analog 2	AGATTTCA	**Analog 2**	0.47858	0.08920	-0.02765	1.00000	0.10041	0.40177	0.25603
	Analog 3	CAAGTTGA	**Analog 3**	0.12113	0.27247	0.18400	0.10041	1.00000	-0.07921	-0.02943
	Analog 4	TGTTATCA	**Analog 4**	0.40610	0.07224	0.04270	0.40177	-0.07921	1.00000	0.24006
	Analog 5	AGGGATCG	**Analog 5**	0.35829	0.67821	0.22015	0.25603	-0.02943	0.24006	1.00000
57	**Origin**	AGATCAGT	**Origin**	1.00000	0.25281	0.58763	0.32865	0.15329	0.41197	0.53139
	Represent	CCGTCAAT	**Represent**	0.25281	1.00000	0.43171	0.08971	0.10097	0.07677	0.45544
	Analog 1	TTGTCAGT	**Analog 1**	0.58763	0.43171	1.00000	-0.08360	-0.03559	0.24619	0.50850
	Analog 2	AGAATAAT	**Analog 2**	0.32865	0.08971	-0.08360	1.00000	0.41463	0.09297	-0.08786

	Analog 3	AGCTTAAT	**Analog 3**	0.15329	0.10097	-0.03559	0.41463	1.00000	0.07448	0.12940
	Analog 4	AGTCCAGC	**Analog 4**	0.41197	0.07677	0.24619	0.09297	0.07448	1.00000	0.22006
	Analog 5	CCCTCAGT	**Analog 5**	0.53139	0.45544	0.50850	-0.08786	0.12940	0.22006	1.00000
58	**Origin**	CAGACGTT	**Origin**	1.00000	0.13653	0.22759	0.24282	0.34914	0.13963	0.29247
	Represent	AGGAAGCT	**Represent**	0.13653	1.00000	0.02906	-0.07454	0.37738	0.71913	-0.07161
	Analog 1	CATAACTT	**Analog 1**	0.22759	0.02906	1.00000	0.07684	0.21922	0.03383	0.31837
	Analog 2	CAGTCTGT	**Analog 2**	0.24282	-0.07454	0.07684	1.00000	-0.01446	-0.07855	0.55963
	Analog 3	AGGACCTT	**Analog 3**	0.34914	0.37738	0.21922	-0.01446	1.00000	0.06764	0.36916
	Analog 4	CTGAAGCT	**Analog 4**	0.13963	0.71913	0.03383	-0.07855	0.06764	1.00000	-0.07556
	Analog 5	CAGTCCTA	**Analog 5**	0.29247	-0.07161	0.31837	0.55963	0.36916	-0.07556	1.00000
59	**Origin**	GTCGGAAT	**Origin**	1.00000	0.19078	0.49668	0.33680	0.45118	0.25044	0.34885
	Represent	GCCCGAAA	**Represent**	0.19078	1.00000	0.21476	0.41939	0.28161	0.25104	0.50371
	Analog 1	CTTGGAAA	**Analog 1**	0.49668	0.21476	1.00000	0.44280	0.09278	0.40935	0.11912
	Analog 2	GCGGGAAA	**Analog 2**	0.33680	0.41939	0.44280	1.00000	0.13154	0.46660	0.03629
	Analog 3	ACCGTAAT	**Analog 3**	0.45118	0.28161	0.09278	0.13154	1.00000	0.09999	-0.02651
	Analog 4	GCTGGTAT	**Analog 4**	0.25044	0.25104	0.40935	0.46660	0.09999	1.00000	-0.06101
	Analog 5	GTCCGAGG	**Analog 5**	0.34885	0.50371	0.11912	0.03629	-0.02651	-0.06101	1.00000
60	**Origin**	CGCAGTTC	**Origin**	1.00000	0.45953	0.24962	0.23484	0.49854	0.47161	0.39319
	Represent	CGGATTTC	**Represent**	0.45953	1.00000	0.46239	0.20473	0.62845	0.06200	-0.03465
	Analog 1	TGGAGGTC	**Analog 1**	0.24962	0.46239	1.00000	-0.04380	0.45397	0.10880	0.06755
	Analog 2	CCCATTTT	**Analog 2**	0.23484	0.20473	-0.04380	1.00000	-0.05067	0.54037	0.17401
	Analog 3	CGGAGTAG	**Analog 3**	0.49854	0.62845	0.45397	-0.05067	1.00000	0.21700	0.23686
	Analog 4	TCCAGTTG	**Analog 4**	0.47161	0.06200	0.10880	0.54037	0.21700	1.00000	0.44278
	Analog 5	TACAGTCC	**Analog 5**	0.39319	-0.03465	0.06755	0.17401	0.23686	0.44278	1.00000
61	**Origin**	CGTCGAGC	**Origin**	1.00000	0.38869	0.51947	0.47388	0.55525	0.44664	0.41673
	Represent	CGGCAGGC	**Represent**	0.38869	1.00000	0.52403	0.36733	-0.00296	0.12458	0.73398
	Analog 1	CGGCGAAT	**Analog 1**	0.51947	0.52403	1.00000	0.11350	0.31947	0.38222	0.18365
	Analog 2	CGTGACGC	**Analog 2**	0.47388	0.36733	0.11350	1.00000	-0.01724	0.41061	0.40697
	Analog 3	ACTCGAGG	**Analog 3**	0.55525	-0.00296	0.31947	-0.01724	1.00000	0.10722	-0.00559
	Analog 4	CGTGGAAG	**Analog 4**	0.44664	0.12458	0.38222	0.41061	0.10722	1.00000	0.14182
	Analog 5	CGACAGGC	**Analog 5**	0.41673	0.73398	0.18365	0.40697	-0.00559	0.14182	1.00000
62	**Origin**	GAGTCACG	**Origin**	1.00000	-0.12836	0.49796	0.45929	0.20294	0.12646	0.33963
	Represent	GCTGTCAG	**Represent**	-0.12836	1.00000	0.25217	-0.12537	0.15445	0.20359	0.34572
	Analog 1	GATGTACG	**Analog 1**	0.49796	0.25217	1.00000	0.14320	0.18053	-0.08724	0.07002
	Analog 2	GTATCACC	**Analog 2**	0.45929	-0.12537	0.14320	1.00000	0.00265	-0.03494	-0.08142
	Analog 3	GCGGCGCG	**Analog 3**	0.20294	0.15445	0.18053	0.00265	1.00000	0.35723	-0.07901
	Analog 4	GCGTAATG	**Analog 4**	0.12646	0.20359	-0.08724	-0.03494	0.35723	1.00000	0.10651
	Analog 5	GAGTTCAG	**Analog 5**	0.33963	0.34572	0.07002	-0.08142	-0.07901	0.10651	1.00000
63	**Origin**	TCTATAAA	**Origin**	1.00000	0.38965	0.47282	0.29061	0.36191	0.41985	0.22558
	Represent	CCTATCAC	**Represent**	0.38965	1.00000	0.18810	0.24175	0.18339	0.34835	0.47396

	Analog 1	ATTATAAT	**Analog 1**	0.47282	0.18810	1.00000	0.13464	0.59693	0.47868	0.13280
	Analog 2	CCCCTAAA	**Analog 2**	0.29061	0.24175	0.13464	1.00000	0.05912	0.12149	0.05222
	Analog 3	ATTATTAA	**Analog 3**	0.36191	0.18339	0.59693	0.05912	1.00000	0.22804	0.25749
	Analog 4	GATATAAC	**Analog 4**	0.41985	0.34835	0.47868	0.12149	0.22804	1.00000	0.17755
	Analog 5	TAAATCAA	**Analog 5**	0.22558	0.47396	0.13280	0.05222	0.25749	0.17755	1.00000
64	**Origin**	TGGATTGT	**Origin**	1.00000	0.14195	0.13146	0.27436	0.36696	0.39523	0.39197
	Represent	TGAAGCGC	**Represent**	0.14195	1.00000	0.03773	0.19598	0.53723	0.44374	0.42914
	Analog 1	TCGAGTCT	**Analog 1**	0.13146	0.03773	1.00000	-0.08294	-0.06650	0.32078	-0.08294
	Analog 2	TGATTTTT	**Analog 2**	0.27436	0.19598	-0.08294	1.00000	0.21242	0.06848	0.41767
	Analog 3	TGGTTCGC	**Analog 3**	0.36696	0.53723	-0.06650	0.21242	1.00000	0.27482	0.36230
	Analog 4	TGGAGCCT	**Analog 4**	0.39523	0.44374	0.32078	0.06848	0.27482	1.00000	0.02759
	Analog 5	TGACTTGC	**Analog 5**	0.39197	0.42914	-0.08294	0.41767	0.36230	0.02759	1.00000
65	**Origin**	AGTCTGTC	**Origin**	1.00000	0.34017	0.43759	0.40231	0.16698	0.27909	0.35022
	Represent	AGCCTGCC	**Represent**	0.34017	1.00000	0.21639	0.32388	0.55295	0.30237	0.89844
	Analog 1	ATTCTGGT	**Analog 1**	0.43759	0.21639	1.00000	0.64319	0.32615	-0.03703	0.22412
	Analog 2	AGACTGGT	**Analog 2**	0.40231	0.32388	0.64319	1.00000	0.12302	0.07741	0.33381
	Analog 3	ATTATGCC	**Analog 3**	0.16698	0.55295	0.32615	0.12302	1.00000	0.36504	0.40880
	Analog 4	AGTATTCC	**Analog 4**	0.27909	0.30237	-0.03703	0.07741	0.36504	1.00000	0.13976
	Analog 5	AGCCTGCA	**Analog 5**	0.35022	0.89844	0.22412	0.33381	0.40880	0.13976	1.00000
66	**Origin**	TGTGGAGA	**Origin**	1.00000	0.04417	0.60072	0.29591	0.35592	0.27823	0.30048
	Represent	CGGTGCGC	**Represent**	0.04417	1.00000	0.18572	0.29306	0.42212	0.35092	-0.01449
	Analog 1	CATGGAGC	**Analog 1**	0.60072	0.18572	1.00000	0.10537	0.41397	0.34351	0.21802
	Analog 2	CGTTGACA	**Analog 2**	0.29591	0.29306	0.10537	1.00000	-0.02393	-0.01635	-0.07315
	Analog 3	TATGGCGG	**Analog 3**	0.35592	0.42212	0.41397	-0.02393	1.00000	0.00702	0.20873
	Analog 4	TGGGAAGC	**Analog 4**	0.27823	0.35092	0.34351	-0.01635	0.00702	1.00000	-0.00335
	Analog 5	TTCGGTGA	**Analog 5**	0.30048	-0.01449	0.21802	-0.07315	0.20873	-0.00335	1.00000
67	**Origin**	GCACCGAG	**Origin**	1.00000	0.21113	0.41945	0.25037	0.23707	0.60894	0.31221
	Represent	CGCCCAAG	**Represent**	0.21113	1.00000	0.26944	0.11871	0.24216	0.40775	0.18770
	Analog 1	CTACCCAG	**Analog 1**	0.41945	0.26944	1.00000	0.51127	0.06996	0.34560	0.06319
	Analog 2	GAACCCCG	**Analog 2**	0.25037	0.11871	0.51127	1.00000	-0.07180	0.25902	-0.06933
	Analog 3	CCCCTGAG	**Analog 3**	0.23707	0.24216	0.06996	-0.07180	1.00000	0.09563	0.06950
	Analog 4	CGACCGAA	**Analog 4**	0.60894	0.40775	0.34560	0.25902	0.09563	1.00000	-0.03826
	Analog 5	GCGTCAAG	**Analog 5**	0.31221	0.18770	0.06319	-0.06933	0.06950	-0.03826	1.00000
68	**Origin**	AGACAGGT	**Origin**	1.00000	0.27823	0.34134	0.23157	0.32751	0.23126	0.43277
	Represent	TGCCACGT	**Represent**	0.27823	1.00000	0.12749	0.26533	0.42388	0.47309	0.23569
	Analog 1	ACACAAGA	**Analog 1**	0.34134	0.12749	1.00000	0.10166	0.06736	-0.02342	0.41394
	Analog 2	AGGCACTT	**Analog 2**	0.23157	0.26533	0.10166	1.00000	0.06148	0.43476	0.16014
	Analog 3	AGCCTGGA	**Analog 3**	0.32751	0.42388	0.06736	0.06148	1.00000	0.06542	-0.01392
	Analog 4	AGGAACGT	**Analog 4**	0.23126	0.47309	-0.02342	0.43476	0.06542	1.00000	-0.02929
	Analog 5	TGACAACT	**Analog 5**	0.43277	0.23569	0.41394	0.16014	-0.01392	-0.02929	1.00000

69	**Origin**	AGGCGCAT	**Origin**	1.00000	0.62741	0.46203	0.12316	0.44244	0.30293	0.30353
	Represent	ACGCGCTT	**Represent**	0.62741	1.00000	0.21242	0.14872	0.20182	0.17637	0.57324
	Analog 1	TGGCAGAT	**Analog 1**	0.46203	0.21242	1.00000	0.16801	0.51612	0.07875	0.34682
	Analog 2	AGTCACTT	**Analog 2**	0.12316	0.14872	0.16801	1.00000	0.00059	0.00908	-0.06053
	Analog 3	GGGCCAAT	**Analog 3**	0.44244	0.20182	0.51612	0.00059	1.00000	0.07732	0.41107
	Analog 4	CGCCGTAT	**Analog 4**	0.30293	0.17637	0.07875	0.00908	0.07732	1.00000	0.00373
	Analog 5	ACGCTAAT	**Analog 5**	0.30353	0.57324	0.34682	-0.06053	0.41107	0.00373	1.00000
70	**Origin**	CTTTCCCG	**Origin**	1.00000	0.34449	0.17195	0.38664	0.50849	0.51498	0.07044
	Represent	CTTCCCGG	**Represent**	0.34449	1.00000	0.30915	0.64864	0.15356	0.54871	0.43933
	Analog 1	CTTCACAG	**Analog 1**	0.17195	0.30915	1.00000	-0.01526	-0.06098	0.23103	-0.02047
	Analog 2	TATTCCGG	**Analog 2**	0.38664	0.64864	-0.01526	1.00000	0.30277	0.21010	0.66784
	Analog 3	CCATCCCA	**Analog 3**	0.50849	0.15356	-0.06098	0.30277	1.00000	0.38678	-0.01837
	Analog 4	ATTCCCCC	**Analog 4**	0.51498	0.54871	0.23103	0.21010	0.38678	1.00000	-0.02040
	Analog 5	CATTTCGG	**Analog 5**	0.07044	0.43933	-0.02047	0.66784	-0.01837	-0.02040	1.00000
71	**Origin**	TTTTTCGC	**Origin**	1.00000	0.48364	0.45026	0.44121	0.55074	0.54434	0.32783
	Represent	TTCGCCGC	**Represent**	0.48364	1.00000	0.23973	0.15195	0.23535	0.74450	0.16918
	Analog 1	GTTTCAGC	**Analog 1**	0.45026	0.23973	1.00000	0.47815	0.09821	0.43638	-0.03198
	Analog 2	CGTTTAGC	**Analog 2**	0.44121	0.15195	0.47815	1.00000	0.04475	0.20172	0.02574
	Analog 3	ATTCTCGG	**Analog 3**	0.55074	0.23535	0.09821	0.04475	1.00000	0.33975	0.14388
	Analog 4	GTTGCCGC	**Analog 4**	0.54434	0.74450	0.43638	0.20172	0.33975	1.00000	-0.02467
	Analog 5	TTCTTCTT	**Analog 5**	0.32783	0.16918	-0.03198	0.02574	0.14388	-0.02467	1.00000
72	**Origin**	GCAGGCGA	**Origin**	1.00000	0.85840	0.59507	0.55256	0.54281	0.45039	0.27129
	Represent	CCAGGCGA	**Represent**	0.85840	1.00000	0.73288	0.38219	0.55687	0.46647	0.42494
	Analog 1	CCAGGCCT	**Analog 1**	0.59507	0.73288	1.00000	0.64016	0.34511	0.24711	0.30025
	Analog 2	GCATGCCT	**Analog 2**	0.55256	0.38219	0.64016	1.00000	0.35094	0.24704	0.14814
	Analog 3	TCACGCGC	**Analog 3**	0.54281	0.55687	0.34511	0.35094	1.00000	0.73343	0.18269
	Analog 4	GAACGCGT	**Analog 4**	0.45039	0.46647	0.24711	0.24704	0.73343	1.00000	0.03427
	Analog 5	CCAAGAGA	**Analog 5**	0.27129	0.42494	0.30025	0.14814	0.18269	0.03427	1.00000
73	**Origin**	CTTGCACG	**Origin**	1.00000	0.69837	0.38908	0.39770	0.48111	0.50435	0.50469
	Represent	TATGCACC	**Represent**	0.69837	1.00000	0.25154	0.46735	0.68809	0.55265	0.28150
	Analog 1	CATGATCG	**Analog 1**	0.38908	0.25154	1.00000	0.10896	0.15212	0.10201	0.19650
	Analog 2	CAAGCATG	**Analog 2**	0.39770	0.46735	0.10896	1.00000	0.51659	0.59244	0.10064
	Analog 3	CACGCACC	**Analog 3**	0.48111	0.68809	0.15212	0.51659	1.00000	0.34183	0.22459
	Analog 4	GGTGCATG	**Analog 4**	0.50435	0.55265	0.10201	0.59244	0.34183	1.00000	0.08432
	Analog 5	TTGACACG	**Analog 5**	0.50469	0.28150	0.19650	0.10064	0.22459	0.08432	1.00000
74	**Origin**	ATATAAAT	**Origin**	1.00000	0.01985	0.41780	0.11769	0.49835	0.11416	0.30322
	Represent	ATTTTGCC	**Represent**	0.01985	1.00000	0.25768	0.18531	-0.13064	0.40351	0.37543
	Analog 1	CTATAACC	**Analog 1**	0.41780	0.25768	1.00000	0.01944	0.13752	0.10979	0.08819
	Analog 2	ATTTGAGT	**Analog 2**	0.11769	0.18531	0.01944	1.00000	-0.07177	-0.04614	0.02073
	Analog 3	TAAAAAAT	**Analog 3**	0.49835	-0.13064	0.13752	-0.07177	1.00000	-0.02933	-0.02451

	Analog 4	ATAGAGCT	**Analog 4**	0.11416	0.40351	0.10979	-0.04614	-0.02933	1.00000	0.11239
	Analog 5	ATATTGAG	**Analog 5**	0.30322	0.37543	0.08819	0.02073	-0.02451	0.11239	1.00000
75	**Origin**	AGCGCGAG	**Origin**	1.00000	0.57329	0.16406	0.69067	0.33294	0.32980	0.32765
	Represent	CGCGGGAG	**Represent**	0.57329	1.00000	0.10502	0.46448	0.26781	0.61549	0.09433
	Analog 1	AGGGTCAG	**Analog 1**	0.16406	0.10502	1.00000	0.03524	0.46313	-0.02712	0.60001
	Analog 2	TGCGCTAA	**Analog 2**	0.69067	0.46448	0.03524	1.00000	0.29051	0.29264	0.37339
	Analog 3	CGGGCAAG	**Analog 3**	0.33294	0.26781	0.46313	0.29051	1.00000	-0.02741	0.66026
	Analog 4	ACCGGGAA	**Analog 4**	0.32980	0.61549	-0.02712	0.29264	-0.02741	1.00000	-0.02560
	Analog 5	TGGGCCAG	**Analog 5**	0.32765	0.09433	0.60001	0.37339	0.66026	-0.02560	1.00000
76	**Origin**	TAAGCAGA	**Origin**	1.00000	0.54174	0.12808	0.67463	0.58615	0.54446	0.27820
	Represent	GGTGCAGG	**Represent**	0.54174	1.00000	-0.06117	0.78199	0.57256	0.23968	0.25589
	Analog 1	TAATCTCA	**Analog 1**	0.12808	-0.06117	1.00000	-0.05766	-0.00970	0.47926	-0.08710
	Analog 2	AGTGCAGA	**Analog 2**	0.67463	0.78199	-0.05766	1.00000	0.45756	0.26366	0.11819
	Analog 3	GGAGCAAA	**Analog 3**	0.58615	0.57256	-0.00970	0.45756	1.00000	0.40442	0.11410
	Analog 4	TAAGCTCC	**Analog 4**	0.54446	0.23968	0.47926	0.26366	0.40442	1.00000	0.07393
	Analog 5	TCAGGAGG	**Analog 5**	0.27820	0.25589	-0.08710	0.11819	0.11410	0.07393	1.00000
77	**Origin**	TGACTTAA	**Origin**	1.00000	0.21546	0.25353	0.43748	0.32355	0.13526	0.49513
	Represent	CGAATGAC	**Represent**	0.21546	1.00000	0.09389	0.42200	0.29536	0.56516	0.33557
	Analog 1	TTACGTAC	**Analog 1**	0.25353	0.09389	1.00000	-0.02630	0.56386	-0.03460	-0.03337
	Analog 2	TGAATAAT	**Analog 2**	0.43748	0.42200	-0.02630	1.00000	0.11502	0.26988	0.61952
	Analog 3	CGACGTGA	**Analog 3**	0.32355	0.29536	0.56386	0.11502	1.00000	-0.08444	0.14090
	Analog 4	TAAATGAA	**Analog 4**	0.13526	0.56516	-0.03460	0.26988	-0.08444	1.00000	0.19193
	Analog 5	TGAATTTC	**Analog 5**	0.49513	0.33557	-0.03337	0.61952	0.14090	0.19193	1.00000
78	**Origin**	GTTTAGGA	**Origin**	1.00000	0.31847	0.36776	0.42505	0.47324	0.27990	0.51630
	Represent	ATTGCGGC	**Represent**	0.31847	1.00000	0.17174	0.83291	0.13303	0.06712	0.50381
	Analog 1	GCTCAGGT	**Analog 1**	0.36776	0.17174	1.00000	0.17187	0.13947	-0.02955	0.34593
	Analog 2	TTTGCGGA	**Analog 2**	0.42505	0.83291	0.17187	1.00000	0.09606	0.02190	0.23028
	Analog 3	ATTTAGAG	**Analog 3**	0.47324	0.13303	0.13947	0.09606	1.00000	0.40262	0.28843
	Analog 4	ATTTACTA	**Analog 4**	0.27990	0.06712	-0.02955	0.02190	0.40262	1.00000	0.09297
	Analog 5	ATATAGGC	**Analog 5**	0.51630	0.50381	0.34593	0.23028	0.28843	0.09297	1.00000
79	**Origin**	AGCTCTGA	**Origin**	1.00000	0.13953	0.14822	0.29830	0.36355	0.56202	0.49325
	Represent	GGAGCTTA	**Represent**	0.13953	1.00000	0.11017	0.07456	0.64610	0.28340	0.31089
	Analog 1	AGTTGTTA	**Analog 1**	0.14822	0.11017	1.00000	-0.07338	-0.01302	-0.00614	0.19435
	Analog 2	ATCACTGC	**Analog 2**	0.29830	0.07456	-0.07338	1.00000	0.22415	0.53316	-0.00615
	Analog 3	CGAGCTGA	**Analog 3**	0.36355	0.64610	-0.01302	0.22415	1.00000	0.25877	0.00623
	Analog 4	GGCACTGT	**Analog 4**	0.56202	0.28340	-0.00614	0.53316	0.25877	1.00000	0.50506
	Analog 5	GGCTATTA	**Analog 5**	0.49325	0.31089	0.19435	-0.00615	0.00623	0.50506	1.00000
80	**Origin**	ACCTGCCT	**Origin**	1.00000	0.67095	0.66635	0.47157	0.40361	0.51287	0.59163
	Represent	ACCTGCGC	**Represent**	0.67095	1.00000	0.42737	0.42519	0.61129	0.45392	0.93102
	Analog 1	GACTGCCA	**Analog 1**	0.66635	0.42737	1.00000	0.48275	0.36841	0.21364	0.43124

	Analog 2	TGCTGCTT	**Analog 2**	0.47157	0.42519	0.48275	1.00000	0.35716	0.22086	0.42928
	Analog 3	TCTTGCGT	**Analog 3**	0.40361	0.61129	0.36841	0.35716	1.00000	0.12884	0.68547
	Analog 4	ACCTGGAG	**Analog 4**	0.51287	0.45392	0.21364	0.22086	0.12884	1.00000	0.36566
	Analog 5	TCCTGCGC	**Analog 5**	0.59163	0.93102	0.43124	0.42928	0.68547	0.36566	1.00000
81	**Origin**	GGCTAGTT	**Origin**	1.00000	0.18851	0.51168	0.37161	0.26180	0.53907	0.16535
	Represent	GGGTCGCT	**Represent**	0.18851	1.00000	0.00351	0.53679	0.33121	0.33798	0.30785
	Analog 1	CGCTATAT	**Analog 1**	0.51168	0.00351	1.00000	0.01260	0.12538	0.60021	0.35154
	Analog 2	GGTTCGTA	**Analog 2**	0.37161	0.53679	0.01260	1.00000	-0.00896	0.52270	0.03424
	Analog 3	TCCTAGCT	**Analog 3**	0.26180	0.33121	0.12538	-0.00896	1.00000	0.10620	-0.04442
	Analog 4	CGCTCGTG	**Analog 4**	0.53907	0.33798	0.60021	0.52270	0.10620	1.00000	0.25777
	Analog 5	CGGTAATT	**Analog 5**	0.16535	0.30785	0.35154	0.03424	-0.04442	0.25777	1.00000
82	**Origin**	GGAACGCG	**Origin**	1.00000	0.82241	0.22520	0.35374	0.27768	0.32132	0.20252
	Represent	GTAACGCG	**Represent**	0.82241	1.00000	0.23694	0.51541	0.30600	0.22610	0.39965
	Analog 1	GAACCGGG	**Analog 1**	0.22520	0.23694	1.00000	0.24850	-0.07030	-0.02283	-0.01598
	Analog 2	GTTACGTG	**Analog 2**	0.35374	0.51541	0.24850	1.00000	0.06815	-0.04861	0.33773
	Analog 3	GCGACTCG	**Analog 3**	0.27768	0.30600	-0.07030	0.06815	1.00000	0.16351	0.23845
	Analog 4	TGAGCCCG	**Analog 4**	0.32132	0.22610	-0.02283	-0.04861	0.16351	1.00000	-0.01865
	Analog 5	GTAACTAG	**Analog 5**	0.20252	0.39965	-0.01598	0.33773	0.23845	-0.01865	1.00000
83	**Origin**	GCTCTCTG	**Origin**	1.00000	0.66353	0.22299	0.42205	0.41207	0.60221	0.24414
	Represent	GCGCTCTG	**Represent**	0.66353	1.00000	0.60373	0.35638	0.21704	0.36291	0.21678
	Analog 1	CCGCTCCG	**Analog 1**	0.22299	0.60373	1.00000	-0.01433	-0.02136	0.21845	0.37694
	Analog 2	GCAGTATG	**Analog 2**	0.42205	0.35638	-0.01433	1.00000	0.06006	-0.02974	0.32659
	Analog 3	TTTCACTG	**Analog 3**	0.41207	0.21704	-0.02136	0.06006	1.00000	0.35650	0.24849
	Analog 4	AATCTCTA	**Analog 4**	0.60221	0.36291	0.21845	-0.02974	0.35650	1.00000	-0.01329
	Analog 5	GCACACCG	**Analog 5**	0.24414	0.21678	0.37694	0.32659	0.24849	-0.01329	1.00000
84	**Origin**	TCCTTACC	**Origin**	1.00000	0.42138	0.43679	0.24605	0.47357	0.35089	0.30960
	Represent	CCCCTCCC	**Represent**	0.42138	1.00000	0.49054	0.16957	0.28176	0.36528	0.33867
	Analog 1	AACTTCCC	**Analog 1**	0.43679	0.49054	1.00000	-0.02646	0.12485	0.27755	-0.06672
	Analog 2	ACCGTAGC	**Analog 2**	0.24605	0.16957	-0.02646	1.00000	0.39294	-0.02666	0.17806
	Analog 3	GCCGCACC	**Analog 3**	0.47357	0.28176	0.12485	0.39294	1.00000	0.13956	0.29897
	Analog 4	CCATTTCC	**Analog 4**	0.35089	0.36528	0.27755	-0.02666	0.13956	1.00000	-0.05809
	Analog 5	TCCCCAAC	**Analog 5**	0.30960	0.33867	-0.06672	0.17806	0.29897	-0.05809	1.00000
85	**Origin**	TGAAGCGA	**Origin**	1.00000	0.48032	0.44986	0.27451	0.56755	0.46613	0.40631
	Represent	TGCAGCAA	**Represent**	0.48032	1.00000	-0.00734	-0.00499	0.64044	0.04518	0.58306
	Analog 1	CAAACCGA	**Analog 1**	0.44986	-0.00734	1.00000	0.06915	0.23104	0.35138	-0.04266
	Analog 2	AGATGTGA	**Analog 2**	0.27451	-0.00499	0.06915	1.00000	0.04832	0.13333	0.16168
	Analog 3	CGCAGCGG	**Analog 3**	0.56755	0.64044	0.23104	0.04832	1.00000	0.43691	0.25681
	Analog 4	CGAAACGC	**Analog 4**	0.46613	0.04518	0.35138	0.13333	0.43691	1.00000	0.00936
	Analog 5	TGTTGCAA	**Analog 5**	0.40631	0.58306	-0.04266	0.16168	0.25681	0.00936	1.00000
86	**Origin**	ATTTACGT	**Origin**	1.00000	0.28067	0.23741	0.18343	0.27716	0.52623	0.66495

	Represent	ATTTCAGG	**Represent**	0.28067	1.00000	0.59443	0.50891	0.13736	0.17663	0.10327
	Analog 1	AGTTCAGT	**Analog 1**	0.23741	0.59443	1.00000	0.59655	0.10490	-0.02247	-0.02035
	Analog 2	AGTTAAGG	**Analog 2**	0.18343	0.50891	0.59655	1.00000	-0.00164	0.23499	0.03732
	Analog 3	ATTGGTGT	**Analog 3**	0.27716	0.13736	0.10490	-0.00164	1.00000	-0.04814	0.08721
	Analog 4	ACATACGG	**Analog 4**	0.52623	0.17663	-0.02247	0.23499	-0.04814	1.00000	0.47032
	Analog 5	CTTAACGA	**Analog 5**	0.66495	0.10327	-0.02035	0.03732	0.08721	0.47032	1.00000
87	**Origin**	TAGACCGG	**Origin**	1.00000	0.33858	0.13584	0.16764	0.34877	0.64814	0.25734
	Represent	TACACCCG	**Represent**	0.33858	1.00000	0.45688	0.27178	0.38139	0.18400	-0.01820
	Analog 1	TAAACACG	**Analog 1**	0.13584	0.45688	1.00000	0.31149	0.31269	-0.04205	-0.01119
	Analog 2	TAGAAGCG	**Analog 2**	0.16764	0.27178	0.31149	1.00000	-0.04742	-0.10121	0.26516
	Analog 3	GACACAGG	**Analog 3**	0.34877	0.38139	0.31269	-0.04742	1.00000	0.29477	-0.02974
	Analog 4	GATTCCGG	**Analog 4**	0.64814	0.18400	-0.04205	-0.10121	0.29477	1.00000	-0.08998
	Analog 5	TAGATTTG	**Analog 5**	0.25734	-0.01820	-0.01119	0.26516	-0.02974	-0.08998	1.00000
88	**Origin**	CGAACATG	**Origin**	1.00000	0.35103	0.38996	0.37475	0.49136	0.25973	0.33246
	Represent	CGGAGCTG	**Represent**	0.35103	1.00000	0.51514	0.10332	0.06644	0.13541	0.60904
	Analog 1	CGGGGATG	**Analog 1**	0.38996	0.51514	1.00000	0.04828	0.09257	0.13500	0.14552
	Analog 2	CTGACATC	**Analog 2**	0.37475	0.10332	0.04828	1.00000	0.45735	-0.03257	-0.03988
	Analog 3	GTCACATG	**Analog 3**	0.49136	0.06644	0.09257	0.45735	1.00000	-0.03192	0.08116
	Analog 4	GGAAGAAG	**Analog 4**	0.25973	0.13541	0.13500	-0.03257	-0.03192	1.00000	0.52753
	Analog 5	GGAAGCTG	**Analog 5**	0.33246	0.60904	0.14552	-0.03988	0.08116	0.52753	1.00000
89	**Origin**	TGCTACGA	**Origin**	1.00000	0.01121	0.17953	0.40527	0.54342	0.48548	0.30934
	Represent	TCCGGCAC	**Represent**	0.01121	1.00000	0.23431	0.19502	0.54545	-0.06108	0.27175
	Analog 1	TCCTATGG	**Analog 1**	0.17953	0.23431	1.00000	0.14492	0.00665	-0.05087	0.13809
	Analog 2	TGATGCGG	**Analog 2**	0.40527	0.19502	0.14492	1.00000	0.44923	0.38485	-0.01248
	Analog 3	AGCGGCGA	**Analog 3**	0.54342	0.54545	0.00665	0.44923	1.00000	0.30198	0.00645
	Analog 4	TGGATCGA	**Analog 4**	0.48548	-0.06108	-0.05087	0.38485	0.30198	1.00000	-0.05788
	Analog 5	TTCTACAC	**Analog 5**	0.30934	0.27175	0.13809	-0.01248	0.00645	-0.05788	1.00000
90	**Origin**	TTTTCTTA	**Origin**	1.00000	0.18031	0.26472	0.17262	0.21746	0.21223	0.14482
	Represent	TATTACTA	**Represent**	0.18031	1.00000	-0.03066	0.29114	0.55757	0.02680	-0.05897
	Analog 1	TTTCCATC	**Analog 1**	0.26472	-0.03066	1.00000	0.05266	0.11419	-0.01287	0.10506
	Analog 2	TTATTCTA	**Analog 2**	0.17262	0.29114	0.05266	1.00000	0.02931	-0.09332	0.07073
	Analog 3	TATTAATA	**Analog 3**	0.21746	0.55757	0.11419	0.02931	1.00000	0.05143	-0.05400
	Analog 4	TGTTCGCA	**Analog 4**	0.21223	0.02680	-0.01287	-0.09332	0.05143	1.00000	0.25069
	Analog 5	TTGACGTA	**Analog 5**	0.14482	-0.05897	0.10506	0.07073	-0.05400	0.25069	1.00000
91	**Origin**	GAGTTTAC	**Origin**	1.00000	0.20396	0.32520	0.27874	0.39920	0.23802	0.20519
	Represent	GGGTTGCC	**Represent**	0.20396	1.00000	-0.08021	0.15700	0.05023	0.46355	0.62739
	Analog 1	GAAGTTAG	**Analog 1**	0.32520	-0.08021	1.00000	0.05691	0.22857	-0.04001	0.21264
	Analog 2	GCGTTAAG	**Analog 2**	0.27874	0.15700	0.05691	1.00000	0.10326	0.14107	0.01145
	Analog 3	TATTTTAA	**Analog 3**	0.39920	0.05023	0.22857	0.10326	1.00000	0.04467	0.10821
	Analog 4	GGGTGTAT	**Analog 4**	0.23802	0.46355	-0.04001	0.14107	0.04467	1.00000	-0.07761

	Analog 5	GAATTGCC	**Analog 5**	0.20519	0.62739	0.21264	0.01145	0.10821	-0.07761	1.00000
92	**Origin**	TAGTTCGC	**Origin**	1.00000	0.12236	0.27291	0.35610	0.15135	0.20067	0.23078
	Represent	TGGGTCTC	**Represent**	0.12236	1.00000	0.33632	0.63284	0.59285	0.33976	0.33033
	Analog 1	TGGTTAGG	**Analog 1**	0.27291	0.33632	1.00000	0.61120	0.49984	0.22994	0.02678
	Analog 2	TGGTTCTT	**Analog 2**	0.35610	0.63284	0.61120	1.00000	0.70772	-0.01027	0.36865
	Analog 3	TGGTACTC	**Analog 3**	0.15135	0.59285	0.49984	0.70772	1.00000	-0.05493	0.24739
	Analog 4	TAGGTTGG	**Analog 4**	0.20067	0.33976	0.22994	-0.01027	-0.05493	1.00000	-0.04480
	Analog 5	AACTTCTC	**Analog 5**	0.23078	0.33033	0.02678	0.36865	0.24739	-0.04480	1.00000
93	**Origin**	TATCTTAT	**Origin**	1.00000	-0.02767	0.42593	0.57018	0.26413	0.17708	0.22511
	Represent	TGTGGTTT	**Represent**	-0.02767	1.00000	-0.06785	-0.07368	0.27383	0.19596	0.58065
	Analog 1	TCTCTAAC	**Analog 1**	0.42593	-0.06785	1.00000	0.53040	0.30862	-0.08129	-0.03421
	Analog 2	CATCTAAG	**Analog 2**	0.57018	-0.07368	0.53040	1.00000	0.16966	-0.03089	0.23841
	Analog 3	TGTCCTAC	**Analog 3**	0.26413	0.27383	0.30862	0.16966	1.00000	-0.09300	0.01320
	Analog 4	TAAGTTTT	**Analog 4**	0.17708	0.19596	-0.08129	-0.03089	-0.09300	1.00000	0.04141
	Analog 5	CATGGTAT	**Analog 5**	0.22511	0.58065	-0.03421	0.23841	0.01320	0.04141	1.00000
94	**Origin**	CCATTCTA	**Origin**	1.00000	-0.05121	0.34363	0.30005	0.44131	0.25015	0.17406
	Represent	CTTGGCGT	**Represent**	-0.05121	1.00000	0.19836	0.10913	0.30435	-0.05992	0.18322
	Analog 1	CCGTGCTG	**Analog 1**	0.34363	0.19836	1.00000	0.14956	0.17802	0.68565	0.10907
	Analog 2	CCTGTATA	**Analog 2**	0.30005	0.10913	0.14956	1.00000	0.17453	0.20172	-0.00819
	Analog 3	CCCTTCGT	**Analog 3**	0.44131	0.30435	0.17802	0.17453	1.00000	0.14700	-0.00939
	Analog 4	CCGTGTTA	**Analog 4**	0.25015	-0.05992	0.68565	0.20172	0.14700	1.00000	-0.02218
	Analog 5	CTTTCCTA	**Analog 5**	0.17406	0.18322	0.10907	-0.00819	-0.00939	-0.02218	1.00000
95	**Origin**	GGAGACGT	**Origin**	1.00000	0.28318	0.36416	0.29583	0.31928	0.36949	0.55257
	Represent	CGACAAGT	**Represent**	0.28318	1.00000	-0.01708	0.08420	0.42582	0.41660	0.44577
	Analog 1	GGCGACCC	**Analog 1**	0.36416	-0.01708	1.00000	0.13532	-0.01135	0.13585	0.11367
	Analog 2	GGAACCAT	**Analog 2**	0.29583	0.08420	0.13532	1.00000	0.05481	0.40476	0.13572
	Analog 3	CGAGGGGT	**Analog 3**	0.31928	0.42582	-0.01135	0.05481	1.00000	0.13418	0.10265
	Analog 4	GGAAAAGA	**Analog 4**	0.36949	0.41660	0.13585	0.40476	0.13418	1.00000	0.29559
	Analog 5	TGACACGA	**Analog 5**	0.55257	0.44577	0.11367	0.13572	0.10265	0.29559	1.00000
96	**Origin**	TCGAGCGC	**Origin**	1.00000	0.56129	0.35574	0.31750	0.44310	0.37245	0.35529
	Represent	GCGAGGGC	**Represent**	0.56129	1.00000	0.35870	0.44348	0.18126	0.37565	0.62665
	Analog 1	CCTAGTGC	**Analog 1**	0.35574	0.35870	1.00000	-0.01990	0.22940	0.58833	0.30333
	Analog 2	GCGACCAC	**Analog 2**	0.31750	0.44348	-0.01990	1.00000	0.26506	-0.02092	0.02356
	Analog 3	TTAACCGC	**Analog 3**	0.44310	0.18126	0.22940	0.26506	1.00000	0.24601	0.19043
	Analog 4	ACTAGAGC	**Analog 4**	0.37245	0.37565	0.58833	-0.02092	0.24601	1.00000	0.32386
	Analog 5	CGGAGGGC	**Analog 5**	0.35529	0.62665	0.30333	0.02356	0.19043	0.32386	1.00000
97	**Origin**	TACTTGCA	**Origin**	1.00000	-0.00984	0.19827	0.16527	0.42419	0.13078	0.23532
	Represent	TGGTGGGA	**Represent**	-0.00984	1.00000	-0.13343	-0.05860	-0.09467	0.56491	0.09703
	Analog 1	TAACTTCA	**Analog 1**	0.19827	-0.13343	1.00000	0.61703	0.13114	-0.13352	0.40564
	Analog 2	TAGCTTCA	**Analog 2**	0.16527	-0.05860	0.61703	1.00000	0.10808	-0.13168	0.34505

	Analog 3	GACTACCA	**Analog 3**	0.42419	-0.09467	0.13114	0.10808	1.00000	0.05034	0.11428
	Analog 4	TCCTGGGA	**Analog 4**	0.13078	0.56491	-0.13352	-0.13168	0.05034	1.00000	-0.08995
	Analog 5	TGTTTTCA	**Analog 5**	0.23532	0.09703	0.40564	0.34505	0.11428	-0.08995	1.00000
98	**Origin**	TGACAATA	**Origin**	1.00000	0.74273	0.54004	0.51760	0.27897	0.61393	0.33461
	Represent	TGACATTC	**Represent**	0.74273	1.00000	0.36986	0.66369	0.24610	0.53396	0.19089
	Analog 1	TGATAAAT	**Analog 1**	0.54004	0.36986	1.00000	-0.00973	0.26669	0.12405	-0.01278
	Analog 2	ATACATTA	**Analog 2**	0.51760	0.66369	-0.00973	1.00000	-0.01957	0.56307	0.26320
	Analog 3	TGAGCCTA	**Analog 3**	0.27897	0.24610	0.26669	-0.01957	1.00000	-0.04830	0.06176
	Analog 4	GTACAATC	**Analog 4**	0.61393	0.53396	0.12405	0.56307	-0.04830	1.00000	0.30427
	Analog 5	AAACCATA	**Analog 5**	0.33461	0.19089	-0.01278	0.26320	0.06176	0.30427	1.00000
99	**Origin**	CATCGGAA	**Origin**	1.00000	0.25162	0.31463	0.23255	0.13534	0.27557	0.22175
	Represent	CAAGCGAA	**Represent**	0.25162	1.00000	0.21030	0.40049	0.32451	0.60606	0.32817
	Analog 1	AATTTGAA	**Analog 1**	0.31463	0.21030	1.00000	0.04613	-0.01702	0.14582	0.04667
	Analog 2	CAAGGTAA	**Analog 2**	0.23255	0.40049	0.04613	1.00000	0.01476	0.18175	0.36638
	Analog 3	CAGCCGCA	**Analog 3**	0.13534	0.32451	-0.01702	0.01476	1.00000	0.53114	0.31518
	Analog 4	CAACCGAT	**Analog 4**	0.27557	0.60606	0.14582	0.18175	0.53114	1.00000	0.65375
	Analog 5	CAACCTAA	**Analog 5**	0.22175	0.32817	0.04667	0.36638	0.31518	0.65375	1.00000
100	**Origin**	GGGATACT	**Origin**	1.00000	0.13129	0.52962	0.47088	0.43194	0.41476	0.18278
	Represent	GCGCAACG	**Represent**	0.13129	1.00000	0.36222	0.24249	0.23861	0.40695	0.39011
	Analog 1	CGGAAACG	**Analog 1**	0.52962	0.36222	1.00000	0.48209	0.21378	0.29316	0.08727
	Analog 2	AAGAAACT	**Analog 2**	0.47088	0.24249	0.48209	1.00000	0.00253	0.09998	0.20378
	Analog 3	GGGCTTCC	**Analog 3**	0.43194	0.23861	0.21378	0.00253	1.00000	0.59786	-0.01202
	Analog 4	GGGCAAAT	**Analog 4**	0.41476	0.40695	0.29316	0.09998	0.59786	1.00000	-0.05587
	Analog 5	GCGAGCCT	**Analog 5**	0.18278	0.39011	0.08727	0.20378	-0.01202	-0.05587	1.00000

Supplementary 7. The random sets of five Analogs with mutation number variation.

Mismatch-1		Sequence	Pearson's correlation coefficient	Origin	Represent	Analog 1	Analog 2	Analog 3	Analog 4	Analog 5
1	**Origin**	TGCATACC	**Origin**	1.00000	0.61568	0.85860	0.59815	0.83867	0.66183	0.72867
	Represent	TGCGCACC	**Represent**	0.61568	1.00000	0.49636	0.36339	0.68775	0.41399	0.79049
	Analog 1	TGCATACA	**Analog 1**	0.85860	0.49636	1.00000	0.43361	0.70803	0.48010	0.59708
	Analog 2	TGGATACC	**Analog 2**	0.59815	0.36339	0.43361	1.00000	0.46778	0.70263	0.45045
	Analog 3	TGCACACC	**Analog 3**	0.83867	0.68775	0.70803	0.46778	1.00000	0.51423	0.62207
	Analog 4	TGTATACC	**Analog 4**	0.66183	0.41399	0.48010	0.70263	0.51423	1.00000	0.51006
	Analog 5	TGCGTACC	**Analog 5**	0.72867	0.79049	0.59708	0.45045	0.62207	0.51006	1.00000
2	**Origin**	CTAGCGTT	**Origin**	1.00000	1.00000	0.81684	0.55077	0.81684	0.68340	0.75781
	Represent	CTAGCGTT	**Represent**	1.00000	1.00000	0.81684	0.55077	0.81684	0.68340	0.75781
	Analog 1	CTAGCGAT	**Analog 1**	0.81684	0.81684	1.00000	0.31070	1.00000	0.59424	0.77318
	Analog 2	CTAGAGTT	**Analog 2**	0.55077	0.55077	0.31070	1.00000	0.31070	0.41157	0.28527
	Analog 3	CTAGCGAT	**Analog 3**	0.81684	0.81684	1.00000	0.31070	1.00000	0.59424	0.77318
	Analog 4	CTAGCTTT	**Analog 4**	0.68340	0.68340	0.59424	0.41157	0.59424	1.00000	0.54207
	Analog 5	CTAGCGGT	**Analog 5**	0.75781	0.75781	0.77318	0.28527	0.77318	0.54207	1.00000
3	**Origin**	TAGCTTGC	**Origin**	1.00000	0.75441	0.68542	0.70055	0.93926	0.75441	0.83164
	Represent	TAGCTGGC	**Represent**	0.75441	1.00000	0.55060	0.44765	0.70558	1.00000	0.57747
	Analog 1	TAGCTTAC	**Analog 1**	0.68542	0.55060	1.00000	0.27691	0.63622	0.55060	0.75227
	Analog 2	TATCTTGC	**Analog 2**	0.70055	0.44765	0.27691	1.00000	0.64817	0.44765	0.47148
	Analog 3	CAGCTTGC	**Analog 3**	0.93926	0.70558	0.63622	0.64817	1.00000	0.70558	0.77699
	Analog 4	TAGCTGGC	**Analog 4**	0.75441	1.00000	0.55060	0.44765	0.70558	1.00000	0.57747
	Analog 5	TAGCTTGA	**Analog 5**	0.83164	0.57747	0.75227	0.47148	0.77699	0.57747	1.00000
4	**Origin**	CGCGCTCG	**Origin**	1.00000	1.00000	0.73638	0.89480	0.81055	0.72041	0.83286
	Represent	CGCGCTCG	**Represent**	1.00000	1.00000	0.73638	0.89480	0.81055	0.72041	0.83286
	Analog 1	CTCGCTCG	**Analog 1**	0.73638	0.73638	1.00000	0.60148	0.50038	0.37980	0.51457
	Analog 2	CGCGCTCA	**Analog 2**	0.89480	0.89480	0.60148	1.00000	0.84740	0.58701	0.86995
	Analog 3	CGCGCTTG	**Analog 3**	0.81055	0.81055	0.50038	0.84740	1.00000	0.48714	0.88162
	Analog 4	CGCACTCG	**Analog 4**	0.72041	0.72041	0.37980	0.58701	0.48714	1.00000	0.50097
	Analog 5	CGCGCTAG	**Analog 5**	0.83286	0.83286	0.51457	0.86995	0.88162	0.50097	1.00000
5	**Origin**	GTAAATCC	**Origin**	1.00000	0.43856	0.72249	0.68396	0.72249	0.81405	0.66984
	Represent	GTAAACCG	**Represent**	0.43856	1.00000	0.70060	0.20934	0.70060	0.25646	0.77814
	Analog 1	GTAAATCG	**Analog 1**	0.72249	0.70060	1.00000	0.44471	1.00000	0.53467	0.43639
	Analog 2	GGAAATCC	**Analog 2**	0.68396	0.20934	0.44471	1.00000	0.44471	0.50324	0.40979
	Analog 3	GTAAATCG	**Analog 3**	0.72249	0.70060	1.00000	0.44471	1.00000	0.53467	0.43639
	Analog 4	GTATATCC	**Analog 4**	0.81405	0.25646	0.53467	0.50324	0.53467	1.00000	0.49034

	Analog 5	GTAAACCC	**Analog 5**	0.66984	0.77814	0.43639	0.40979	0.43639	0.49034	1.00000
6	**Origin**	ATTTGCAC	**Origin**	1.00000	0.36214	0.81003	0.72219	0.60885	0.78826	0.78826
	Represent	AGGTGCGC	**Represent**	0.36214	1.00000	0.44906	0.37344	0.74560	0.47179	0.47179
	Analog 1	AGTTGCAC	**Analog 1**	0.81003	0.44906	1.00000	0.54353	0.45852	0.66480	0.66480
	Analog 2	ATTTGCTC	**Analog 2**	0.72219	0.37344	0.54353	1.00000	0.62760	0.52391	0.52391
	Analog 3	ATTTGCGC	**Analog 3**	0.60885	0.74560	0.45852	0.62760	1.00000	0.44201	0.44201
	Analog 4	ATGTGCAC	**Analog 4**	0.78826	0.47179	0.66480	0.52391	0.44201	1.00000	1.00000
	Analog 5	ATGTGCAC	**Analog 5**	0.78826	0.47179	0.66480	0.52391	0.44201	1.00000	1.00000
7	**Origin**	GACCTGCA	**Origin**	1.00000	1.00000	0.70918	0.94794	0.77930	0.74905	0.71675
	Represent	GACCTGCA	**Represent**	1.00000	1.00000	0.70918	0.94794	0.77930	0.74905	0.71675
	Analog 1	GGCCTGCA	**Analog 1**	0.70918	0.70918	1.00000	0.74205	0.70882	0.55537	0.42444
	Analog 2	TACCTGCA	**Analog 2**	0.94794	0.94794	0.74205	1.00000	0.81338	0.68435	0.64179
	Analog 3	GTCCTGCA	**Analog 3**	0.77930	0.77930	0.70882	0.81338	1.00000	0.62456	0.46460
	Analog 4	GAACTGCA	**Analog 4**	0.74905	0.74905	0.55537	0.68435	0.62456	1.00000	0.40445
	Analog 5	GACCTGTA	**Analog 5**	0.71675	0.71675	0.42444	0.64179	0.46460	0.40445	1.00000
8	**Origin**	ACGTGTAC	**Origin**	1.00000	1.00000	0.77505	0.86927	0.91342	0.74305	0.66527
	Represent	ACGTGTAC	**Represent**	1.00000	1.00000	0.77505	0.86927	0.91342	0.74305	0.66527
	Analog 1	ACGTTTAC	**Analog 1**	0.77505	0.77505	1.00000	0.64338	0.67414	0.79506	0.37289
	Analog 2	CCGTGTAC	**Analog 2**	0.86927	0.86927	0.64338	1.00000	0.78239	0.61691	0.64361
	Analog 3	ACGTGTAA	**Analog 3**	0.91342	0.91342	0.67414	0.78239	1.00000	0.64641	0.55307
	Analog 4	ACGTCTAC	**Analog 4**	0.74305	0.74305	0.79506	0.61691	0.64641	1.00000	0.35792
	Analog 5	AAGTGTAC	**Analog 5**	0.66527	0.66527	0.37289	0.64361	0.55307	0.35792	1.00000
9	**Origin**	AGGCTATA	**Origin**	1.00000	0.05589	0.41089	0.83377	0.75780	0.93475	0.61884
	Represent	AGCACCTC	**Represent**	0.05589	1.00000	0.40158	0.17678	0.09553	0.14986	0.14128
	Analog 1	AGCCTATA	**Analog 1**	0.41089	0.40158	1.00000	0.28924	0.22972	0.36990	0.29190
	Analog 2	AGGCTCTA	**Analog 2**	0.83377	0.17678	0.28924	1.00000	0.62174	0.77953	0.46208
	Analog 3	AGGCCATA	**Analog 3**	0.75780	0.09553	0.22972	0.62174	1.00000	0.70509	0.49356
	Analog 4	AGGCTATC	**Analog 4**	0.93475	0.14986	0.36990	0.77953	0.70509	1.00000	0.56490
	Analog 5	AGGATATA	**Analog 5**	0.61884	0.14128	0.29190	0.46208	0.49356	0.56490	1.00000
10	**Origin**	CTGTAGTA	**Origin**	1.00000	1.00000	0.66726	0.91175	0.90171	0.75126	0.69484
	Represent	CTGTAGTA	**Represent**	1.00000	1.00000	0.66726	0.91175	0.90171	0.75126	0.69484
	Analog 1	CTTTAGTA	**Analog 1**	0.66726	0.66726	1.00000	0.59861	0.54389	0.39802	0.36857
	Analog 2	CTGTAGTG	**Analog 2**	0.91175	0.91175	0.59861	1.00000	0.81912	0.69372	0.63956
	Analog 3	ATGTAGTA	**Analog 3**	0.90171	0.90171	0.54389	0.81912	1.00000	0.64551	0.59717
	Analog 4	CTGTAGAA	**Analog 4**	0.75126	0.75126	0.39802	0.69372	0.64551	1.00000	0.67951
	Analog 5	CTGTAGGA	**Analog 5**	0.69484	0.69484	0.36857	0.63956	0.59717	0.67951	1.00000
11	**Origin**	GCATTTAC	**Origin**	1.00000	0.77731	0.76781	0.77731	0.54181	0.84140	0.66676
	Represent	GCACTTAC	**Represent**	0.77731	1.00000	0.54289	1.00000	0.32030	0.70121	0.51432

	Analog 1	TCATTTAC	**Analog 1**	0.76781	0.54289	1.00000	0.54289	0.61975	0.57391	0.43249
	Analog 2	GCACTTAC	**Analog 2**	0.77731	1.00000	0.54289	1.00000	0.32030	0.70121	0.51432
	Analog 3	GAATTTAC	**Analog 3**	0.54181	0.32030	0.61975	0.32030	1.00000	0.32476	0.36373
	Analog 4	GCATATAC	**Analog 4**	0.84140	0.70121	0.57391	0.70121	0.32476	1.00000	0.51724
	Analog 5	GCGTTTAC	**Analog 5**	0.66676	0.51432	0.43249	0.51432	0.36373	0.51724	1.00000
12	**Origin**	AATAGCGA	**Origin**	1.00000	1.00000	0.81968	0.81945	0.87724	0.81945	0.44513
	Represent	AATAGCGA	**Represent**	1.00000	1.00000	0.81968	0.81945	0.87724	0.81945	0.44513
	Analog 1	AGTAGCGA	**Analog 1**	0.81968	0.81968	1.00000	0.77390	0.70832	0.77390	0.27931
	Analog 2	ACTAGCGA	**Analog 2**	0.81945	0.81945	0.77390	1.00000	0.70802	1.00000	0.27844
	Analog 3	AATAGCGG	**Analog 3**	0.87724	0.87724	0.70832	0.70802	1.00000	0.70802	0.33302
	Analog 4	ACTAGCGA	**Analog 4**	0.81945	0.81945	0.77390	1.00000	0.70802	1.00000	0.27844
	Analog 5	AATAGGGA	**Analog 5**	0.44513	0.44513	0.27931	0.27844	0.33302	0.27844	1.00000
13	**Origin**	ACTTGCAG	**Origin**	1.00000	1.00000	0.90358	0.89901	0.67776	0.87022	0.74703
	Represent	ACTTGCAG	**Represent**	1.00000	1.00000	0.90358	0.89901	0.67776	0.87022	0.74703
	Analog 1	ACTTGCAC	**Analog 1**	0.90358	0.90358	1.00000	0.80301	0.66770	0.77760	0.65887
	Analog 2	TCTTGCAG	**Analog 2**	0.89901	0.89901	0.80301	1.00000	0.58438	0.87793	0.65034
	Analog 3	ACTTGCCG	**Analog 3**	0.67776	0.67776	0.66770	0.58438	1.00000	0.56648	0.46313
	Analog 4	CCTTGCAG	**Analog 4**	0.87022	0.87022	0.77760	0.87793	0.56648	1.00000	0.63020
	Analog 5	ACTGGCAG	**Analog 5**	0.74703	0.74703	0.65887	0.65034	0.46313	0.63020	1.00000
14	**Origin**	GTCTTTCC	**Origin**	1.00000	0.25838	0.77126	0.78120	0.78242	0.69087	0.78120
	Represent	GACTTACG	**Represent**	0.25838	1.00000	0.51350	0.45900	0.14996	0.55932	0.45900
	Analog 1	GTCTTTCG	**Analog 1**	0.77126	0.51350	1.00000	0.55931	0.57165	0.47596	0.55931
	Analog 2	GTCTTACC	**Analog 2**	0.78120	0.45900	0.55931	1.00000	0.64406	0.46719	1.00000
	Analog 3	GTCTCTCC	**Analog 3**	0.78242	0.14996	0.57165	0.64406	1.00000	0.48777	0.64406
	Analog 4	GACTTTCC	**Analog 4**	0.69087	0.55932	0.47596	0.46719	0.48777	1.00000	0.46719
	Analog 5	GTCTTACC	**Analog 5**	0.78120	0.45900	0.55931	1.00000	0.64406	0.46719	1.00000
15	**Origin**	AACCAATT	**Origin**	1.00000	0.28973	0.77526	0.77526	0.54027	0.82900	0.94361
	Represent	AACGAGTA	**Represent**	0.28973	1.00000	0.54349	0.54349	0.73756	0.28891	0.32331
	Analog 1	AACCAGTT	**Analog 1**	0.77526	0.54349	1.00000	1.00000	0.35341	0.77515	0.71645
	Analog 2	AACCAGTT	**Analog 2**	0.77526	0.54349	1.00000	1.00000	0.35341	0.77515	0.71645
	Analog 3	AACGAATT	**Analog 3**	0.54027	0.73756	0.35341	0.35341	1.00000	0.37564	0.47489
	Analog 4	AACCATTT	**Analog 4**	0.82900	0.28891	0.77515	0.77515	0.37564	1.00000	0.76738
	Analog 5	AACCAATA	**Analog 5**	0.94361	0.32331	0.71645	0.71645	0.47489	0.76738	1.00000
16	**Origin**	CAGGAGGG	**Origin**	1.00000	0.42189	0.76422	0.76908	0.67926	0.69679	0.69679
	Represent	CCGGACGG	**Represent**	0.42189	1.00000	0.17815	0.42305	0.72417	0.73617	0.73617
	Analog 1	CAGTAGGG	**Analog 1**	0.76422	0.17815	1.00000	0.51428	0.43210	0.46460	0.46460
	Analog 2	CTGGAGGG	**Analog 2**	0.76908	0.42305	0.51428	1.00000	0.46092	0.69733	0.69733
	Analog 3	CAGGACGG	**Analog 3**	0.67926	0.72417	0.43210	0.46092	1.00000	0.41794	0.41794

	Analog 4	CCGGAGGG	**Analog 4**	0.69679	0.73617	0.46460	0.69733	0.41794	1.00000	1.00000
	Analog 5	CCGGAGGG	**Analog 5**	0.69679	0.73617	0.46460	0.69733	0.41794	1.00000	1.00000
17	**Origin**	AAGAATCA	**Origin**	1.00000	1.00000	0.63288	0.71556	0.72813	0.93650	0.67757
	Represent	AAGAATCA	**Represent**	1.00000	1.00000	0.63288	0.71556	0.72813	0.93650	0.67757
	Analog 1	ACGAATCA	**Analog 1**	0.63288	0.63288	1.00000	0.36005	0.62955	0.65862	0.37923
	Analog 2	AAGAATTA	**Analog 2**	0.71556	0.71556	0.36005	1.00000	0.41469	0.63158	0.52793
	Analog 3	ATGAATCA	**Analog 3**	0.72813	0.72813	0.62955	0.41469	1.00000	0.75563	0.43654
	Analog 4	TAGAATCA	**Analog 4**	0.93650	0.93650	0.65862	0.63158	0.75563	1.00000	0.61395
	Analog 5	AAGAACCA	**Analog 5**	0.67757	0.67757	0.37923	0.52793	0.43654	0.61395	1.00000
18	**Origin**	CTCCCCAA	**Origin**	1.00000	0.66362	0.92961	0.66362	0.73035	0.68193	0.57483
	Represent	CTCCCGAA	**Represent**	0.66362	1.00000	0.59052	1.00000	0.42409	0.39607	0.39676
	Analog 1	TTCCCCAA	**Analog 1**	0.92961	0.59052	1.00000	0.59052	0.74385	0.69498	0.50477
	Analog 2	CTCCCGAA	**Analog 2**	0.66362	1.00000	0.59052	1.00000	0.42409	0.39607	0.39676
	Analog 3	CCCCCCAA	**Analog 3**	0.73035	0.42409	0.74385	0.42409	1.00000	0.62854	0.35188
	Analog 4	CGCCCCAA	**Analog 4**	0.68193	0.39607	0.69498	0.39607	0.62854	1.00000	0.32866
	Analog 5	CTCCGCAA	**Analog 5**	0.57483	0.39676	0.50477	0.39676	0.35188	0.32866	1.00000
19	**Origin**	TCGCGCGC	**Origin**	1.00000	1.00000	0.94735	0.76980	0.75706	0.75656	0.77116
	Represent	TCGCGCGC	**Represent**	1.00000	1.00000	0.94735	0.76980	0.75706	0.75656	0.77116
	Analog 1	ACGCGCGC	**Analog 1**	0.94735	0.94735	1.00000	0.71263	0.70068	0.70046	0.71457
	Analog 2	TCGCGAGC	**Analog 2**	0.76980	0.76980	0.71263	1.00000	0.46219	0.63895	0.65062
	Analog 3	TCACGCGC	**Analog 3**	0.75706	0.75706	0.70068	0.46219	1.00000	0.45759	0.46787
	Analog 4	TCGCACGC	**Analog 4**	0.75656	0.75656	0.70046	0.63895	0.45759	1.00000	0.46962
	Analog 5	TCGCGCTC	**Analog 5**	0.77116	0.77116	0.71457	0.65062	0.46787	0.46962	1.00000
20	**Origin**	ACAGGACG	**Origin**	1.00000	0.56388	0.68343	0.85459	0.70049	0.70418	0.68343
	Represent	GCAGCACG	**Represent**	0.56388	1.00000	0.86795	0.71738	0.25469	0.38921	0.86795
	Analog 1	ACAGCACG	**Analog 1**	0.68343	0.86795	1.00000	0.56076	0.36730	0.49012	1.00000
	Analog 2	GCAGGACG	**Analog 2**	0.85459	0.71738	0.56076	1.00000	0.56225	0.58475	0.56076
	Analog 3	ACAGGATG	**Analog 3**	0.70049	0.25469	0.36730	0.56225	1.00000	0.50531	0.36730
	Analog 4	ACAGGGCG	**Analog 4**	0.70418	0.38921	0.49012	0.58475	0.50531	1.00000	0.49012
	Analog 5	ACAGCACG	**Analog 5**	0.68343	0.86795	1.00000	0.56076	0.36730	0.49012	1.00000
21	**Origin**	GATAGATA	**Origin**	1.00000	0.71163	0.65953	0.89623	0.74269	0.74269	0.71163
	Represent	GATAGACA	**Represent**	0.71163	1.00000	0.38771	0.65591	0.50820	0.50820	1.00000
	Analog 1	GATATATA	**Analog 1**	0.65953	0.38771	1.00000	0.57130	0.41460	0.41460	0.38771
	Analog 2	GATAGATC	**Analog 2**	0.89623	0.65591	0.57130	1.00000	0.66028	0.66028	0.65591
	Analog 3	GAGAGATA	**Analog 3**	0.74269	0.50820	0.41460	0.66028	1.00000	1.00000	0.50820
	Analog 4	GAGAGATA	**Analog 4**	0.74269	0.50820	0.41460	0.66028	1.00000	1.00000	0.50820
	Analog 5	GATAGACA	**Analog 5**	0.71163	1.00000	0.38771	0.65591	0.50820	0.50820	1.00000
22	**Origin**	CTTCGACT	**Origin**	1.00000	0.42884	0.89781	0.79180	0.72088	0.74079	0.79180

	Represent	GTGCGAAT	**Represent**	0.42884	1.00000	0.52960	0.59182	0.75581	0.42780	0.59182
	Analog 1	GTTCGACT	**Analog 1**	0.89781	0.52960	1.00000	0.68632	0.63299	0.64163	0.68632
	Analog 2	CTTCGAAT	**Analog 2**	0.79180	0.59182	0.68632	1.00000	0.52577	0.79122	1.00000
	Analog 3	CTGCGACT	**Analog 3**	0.72088	0.75581	0.63299	0.52577	1.00000	0.49103	0.52577
	Analog 4	CTTCGAGT	**Analog 4**	0.74079	0.42780	0.64163	0.79122	0.49103	1.00000	0.79122
	Analog 5	CTTCGAAT	**Analog 5**	0.79180	0.59182	0.68632	1.00000	0.52577	0.79122	1.00000
23	**Origin**	TAAGTAGC	**Origin**	1.00000	0.79072	0.72552	0.91881	0.67851	0.79072	0.66809
	Represent	TCAGTAGC	**Represent**	0.79072	1.00000	0.53129	0.73750	0.49654	1.00000	0.55208
	Analog 1	TAAGTAGG	**Analog 1**	0.72552	0.53129	1.00000	0.65867	0.38508	0.53129	0.41679
	Analog 2	CAAGTAGC	**Analog 2**	0.91881	0.73750	0.65867	1.00000	0.61580	0.73750	0.61205
	Analog 3	TAACTAGC	**Analog 3**	0.67851	0.49654	0.38508	0.61580	1.00000	0.49654	0.46750
	Analog 4	TCAGTAGC	**Analog 4**	0.79072	1.00000	0.53129	0.73750	0.49654	1.00000	0.55208
	Analog 5	TACGTAGC	**Analog 5**	0.66809	0.55208	0.41679	0.61205	0.46750	0.55208	1.00000
24	**Origin**	GTGCATGT	**Origin**	1.00000	1.00000	0.90440	0.74236	0.78597	0.62263	0.62263
	Represent	GTGCATGT	**Represent**	1.00000	1.00000	0.90440	0.74236	0.78597	0.62263	0.62263
	Analog 1	CTGCATGT	**Analog 1**	0.90440	0.90440	1.00000	0.65418	0.68087	0.51553	0.51553
	Analog 2	GTGCACGT	**Analog 2**	0.74236	0.74236	0.65418	1.00000	0.63651	0.39135	0.39135
	Analog 3	GTGCATTT	**Analog 3**	0.78597	0.78597	0.68087	0.63651	1.00000	0.36702	0.36702
	Analog 4	GTGGATGT	**Analog 4**	0.62263	0.62263	0.51553	0.39135	0.36702	1.00000	1.00000
	Analog 5	GTGGATGT	**Analog 5**	0.62263	0.62263	0.51553	0.39135	0.36702	1.00000	1.00000
25	**Origin**	ACCAACCT	**Origin**	1.00000	1.00000	0.64501	0.72805	0.64613	0.72893	0.74187
	Represent	ACCAACCT	**Represent**	1.00000	1.00000	0.64501	0.72805	0.64613	0.72893	0.74187
	Analog 1	ACGAACCT	**Analog 1**	0.64501	0.64501	1.00000	0.49538	0.44880	0.34991	0.37211
	Analog 2	ACCGACCT	**Analog 2**	0.72805	0.72805	0.49538	1.00000	0.41277	0.46067	0.47933
	Analog 3	AGCAACCT	**Analog 3**	0.64613	0.64613	0.44880	0.41277	1.00000	0.35239	0.37442
	Analog 4	ACCAATCT	**Analog 4**	0.72893	0.72893	0.34991	0.46067	0.35239	1.00000	0.62409
	Analog 5	ACCAACTT	**Analog 5**	0.74187	0.74187	0.37211	0.47933	0.37442	0.62409	1.00000
26	**Origin**	CCCATACA	**Origin**	1.00000	0.31347	0.72097	0.85243	0.49784	0.78081	0.75825
	Represent	CGCATCCA	**Represent**	0.31347	1.00000	0.27563	0.20433	0.79597	0.18268	0.56674
	Analog 1	CCCATGCA	**Analog 1**	0.72097	0.27563	1.00000	0.59844	0.29582	0.62750	0.66425
	Analog 2	CCCATACC	**Analog 2**	0.85243	0.20433	0.59844	1.00000	0.37540	0.75604	0.62781
	Analog 3	CGCATACA	**Analog 3**	0.49784	0.79597	0.29582	0.37540	1.00000	0.24956	0.30950
	Analog 4	CCCATATA	**Analog 4**	0.78081	0.18268	0.62750	0.75604	0.24956	1.00000	0.66560
	Analog 5	CCCATCCA	**Analog 5**	0.75825	0.56674	0.66425	0.62781	0.30950	0.66560	1.00000
27	**Origin**	GCCTGCTG	**Origin**	1.00000	0.74216	0.80660	0.73720	0.69537	0.74216	0.79637
	Represent	GCCTGCGG	**Represent**	0.74216	1.00000	0.74263	0.47695	0.45256	1.00000	0.54678
	Analog 1	GCCTGCAG	**Analog 1**	0.80660	0.74263	1.00000	0.52149	0.49261	0.74263	0.59335
	Analog 2	GCCTTCTG	**Analog 2**	0.73720	0.47695	0.52149	1.00000	0.77226	0.47695	0.49136

	Analog 3	GCCTCCTG	**Analog 3**	0.69537	0.45256	0.49261	0.77226	1.00000	0.45256	0.46289
	Analog 4	GCCTGCGG	**Analog 4**	0.74216	1.00000	0.74263	0.47695	0.45256	1.00000	0.54678
	Analog 5	GCATGCTG	**Analog 5**	0.79637	0.54678	0.59335	0.49136	0.46289	0.54678	1.00000
28	**Origin**	GAATGGTC	**Origin**	1.00000	0.52307	0.72551	0.78761	0.90792	0.90783	0.88057
	Represent	CAAGGGTT	**Represent**	0.52307	1.00000	0.81369	0.41688	0.53289	0.60075	0.64089
	Analog 1	GAAGGGTC	**Analog 1**	0.72551	0.81369	1.00000	0.52154	0.63481	0.63447	0.61635
	Analog 2	GTATGGTC	**Analog 2**	0.78761	0.41688	0.52154	1.00000	0.80721	0.68835	0.77714
	Analog 3	AAATGGTC	**Analog 3**	0.90792	0.53289	0.63481	0.80721	1.00000	0.81107	0.89819
	Analog 4	GAATGGTT	**Analog 4**	0.90783	0.60075	0.63447	0.68835	0.81107	1.00000	0.78700
	Analog 5	CAATGGTC	**Analog 5**	0.88057	0.64089	0.61635	0.77714	0.89819	0.78700	1.00000
29	**Origin**	AACGTGGC	**Origin**	1.00000	0.65532	0.77359	0.93481	0.74882	0.70623	0.74002
	Represent	CACGCGGC	**Represent**	0.65532	1.00000	0.52153	0.71771	0.62513	0.94801	0.48344
	Analog 1	AACGTTGC	**Analog 1**	0.77359	0.52153	1.00000	0.71097	0.61088	0.57228	0.46885
	Analog 2	CACGTGGC	**Analog 2**	0.93481	0.71771	0.71097	1.00000	0.69136	0.65230	0.67596
	Analog 3	AACGGGGC	**Analog 3**	0.74882	0.62513	0.61088	0.69136	1.00000	0.67358	0.57308
	Analog 4	AACGCGGC	**Analog 4**	0.70623	0.94801	0.57228	0.65230	0.67358	1.00000	0.53550
	Analog 5	AACATGGC	**Analog 5**	0.74002	0.48344	0.46885	0.67596	0.57308	0.53550	1.00000
30	**Origin**	GGTGGGAT	**Origin**	1.00000	0.50237	0.76372	0.72780	0.74468	0.76372	0.82200
	Represent	GTTGGGCT	**Represent**	0.50237	1.00000	0.77964	0.73609	0.54698	0.77964	0.48253
	Analog 1	GGTGGGCT	**Analog 1**	0.76372	0.77964	1.00000	0.50842	0.52037	1.00000	0.60757
	Analog 2	GTTGGGAT	**Analog 2**	0.72780	0.73609	0.50842	1.00000	0.79231	0.50842	0.69989
	Analog 3	GATGGGAT	**Analog 3**	0.74468	0.54698	0.52037	0.79231	1.00000	0.52037	0.71642
	Analog 4	GGTGGGCT	**Analog 4**	0.76372	0.77964	1.00000	0.50842	0.52037	1.00000	0.60757
	Analog 5	CGTGGGAT	**Analog 5**	0.82200	0.48253	0.60757	0.69989	0.71642	0.60757	1.00000

Mismatch-2		**Sequence**	**Pearson's correlation coefficient**	**Origin**	**Origin**	**Represent**	**Analog 1**	**Analog 2**	**Analog 3**	**Analog 4**
1	**Origin**	GATTGGTG	**Origin**	1.00000	0.68779	0.65089	0.50745	0.67716	0.77902	0.57596
	Represent	GATCGGTG	**Represent**	0.68779	1.00000	0.44404	0.44904	0.39399	0.49585	0.90287
	Analog 1	GGATGGTG	**Analog 1**	0.65089	0.44404	1.00000	0.24374	0.52885	0.62553	0.33700
	Analog 2	GATGAGTG	**Analog 2**	0.50745	0.44904	0.24374	1.00000	0.16868	0.29739	0.33096
	Analog 3	GTTTGGTT	**Analog 3**	0.67716	0.39399	0.52885	0.16868	1.00000	0.65692	0.39654
	Analog 4	TCTTGGTG	**Analog 4**	0.77902	0.49585	0.62553	0.29739	0.65692	1.00000	0.38577
	Analog 5	GATCGGTC	**Analog 5**	0.57596	0.90287	0.33700	0.33096	0.39654	0.38577	1.00000
2	**Origin**	GTGCATAC	**Origin**	1.00000	0.67096	0.71278	0.44208	0.51579	0.50162	0.55473
	Represent	TTGCATCC	**Represent**	0.67096	1.00000	0.51398	0.42146	0.35509	0.78602	0.48429
	Analog 1	CAGCATAC	**Analog 1**	0.71278	0.51398	1.00000	0.44842	0.30537	0.64908	0.56288
	Analog 2	GGGCATGC	**Analog 2**	0.44208	0.42146	0.44842	1.00000	0.06574	0.41660	0.76597
	Analog 3	TTGTATAC	**Analog 3**	0.51579	0.35509	0.30537	0.06574	1.00000	0.07855	0.14437

	Analog 4	GAGCATCC	**Analog 4**	0.50162	0.78602	0.64908	0.41660	0.07855	1.00000	0.47880
	Analog 5	GGGCATAG	**Analog 5**	0.55473	0.48429	0.56288	0.76597	0.14437	0.47880	1.00000
3	**Origin**	TGCCTCGT	**Origin**	1.00000	0.03838	0.57856	0.52215	0.41158	0.67911	0.48031
	Represent	GGGCGCCC	**Represent**	0.03838	1.00000	0.15643	0.47361	0.17945	0.30648	0.37714
	Analog 1	GGTCTCGT	**Analog 1**	0.57856	0.15643	1.00000	0.69898	0.21095	0.22444	0.33280
	Analog 2	GGGCTCGT	**Analog 2**	0.52215	0.47361	0.69898	1.00000	0.18842	0.20277	0.30337
	Analog 3	TACCTCCT	**Analog 3**	0.41158	0.17945	0.21095	0.18842	1.00000	0.62594	0.20217
	Analog 4	TGCCTCCC	**Analog 4**	0.67911	0.30648	0.22444	0.20277	0.62594	1.00000	0.16836
	Analog 5	TTCCGCGT	**Analog 5**	0.48031	0.37714	0.33280	0.30337	0.20217	0.16836	1.00000
4	**Origin**	AGCACCCC	**Origin**	1.00000	0.35062	0.38303	0.60747	0.45165	0.49719	0.61190
	Represent	GGCGCGCC	**Represent**	0.35062	1.00000	0.51940	0.56873	0.53680	0.14671	0.24572
	Analog 1	AACACGCC	**Analog 1**	0.38303	0.51940	1.00000	0.04542	-0.00743	0.17343	0.24818
	Analog 2	AGCGCCCA	**Analog 2**	0.60747	0.56873	0.04542	1.00000	0.80006	0.33875	0.31989
	Analog 3	AGCGCCAC	**Analog 3**	0.45165	0.53680	-0.00743	0.80006	1.00000	0.16826	0.15534
	Analog 4	ACCTCCCC	**Analog 4**	0.49719	0.14671	0.17343	0.33875	0.16826	1.00000	0.44922
	Analog 5	GGGACCCC	**Analog 5**	0.61190	0.24572	0.24818	0.31989	0.15534	0.44922	1.00000
5	**Origin**	GGAGGCGG	**Origin**	1.00000	0.40847	0.85233	0.61215	0.68633	0.49344	0.80942
	Represent	GGCGGGGG	**Represent**	0.40847	1.00000	0.28799	0.42375	0.25019	0.59060	0.19932
	Analog 1	ATAGGCGG	**Analog 1**	0.85233	0.28799	1.00000	0.51767	0.58407	0.29202	0.76665
	Analog 2	GGCCGCGG	**Analog 2**	0.61215	0.42375	0.51767	1.00000	0.61126	0.15077	0.42598
	Analog 3	GGGAGCGG	**Analog 3**	0.68633	0.25019	0.58407	0.61126	1.00000	0.16782	0.47732
	Analog 4	GGAGGGGC	**Analog 4**	0.49344	0.59060	0.29202	0.15077	0.16782	1.00000	0.39100
	Analog 5	AGAGGCGT	**Analog 5**	0.80942	0.19932	0.76665	0.42598	0.47732	0.39100	1.00000
6	**Origin**	TCCCGGTG	**Origin**	1.00000	0.41071	0.51265	0.60301	0.32593	0.51500	0.84442
	Represent	TCGCGGCG	**Represent**	0.41071	1.00000	0.65035	0.09815	0.48337	0.16314	0.35306
	Analog 1	TTCCGGCG	**Analog 1**	0.51265	0.65035	1.00000	0.17788	-0.01053	0.48820	0.51341
	Analog 2	TCCCTGTC	**Analog 2**	0.60301	0.09815	0.17788	1.00000	0.25740	0.18372	0.60342
	Analog 3	TCGCAGTG	**Analog 3**	0.32593	0.48337	-0.01053	0.25740	1.00000	0.07414	0.16662
	Analog 4	TTCCGCTG	**Analog 4**	0.51500	0.16314	0.48820	0.18372	0.07414	1.00000	0.42637
	Analog 5	ACCCGGTC	**Analog 5**	0.84442	0.35306	0.51341	0.60342	0.16662	0.42637	1.00000
7	**Origin**	AAACCGCG	**Origin**	1.00000	0.60783	0.61078	0.74443	0.77953	0.24814	0.75832
	Represent	TAACGGCG	**Represent**	0.60783	1.00000	0.43692	0.50369	0.45691	0.60990	0.41923
	Analog 1	TAACCACG	**Analog 1**	0.61078	0.43692	1.00000	0.34117	0.43889	0.16526	0.39614
	Analog 2	CAATCGCG	**Analog 2**	0.74443	0.50369	0.34117	1.00000	0.65087	0.05917	0.62755
	Analog 3	TACCCGCG	**Analog 3**	0.77953	0.45691	0.43889	0.65087	1.00000	0.02599	0.73546
	Analog 4	AAACGGTG	**Analog 4**	0.24814	0.60990	0.16526	0.05917	0.02599	1.00000	-0.00501
	Analog 5	ACTCCGCG	**Analog 5**	0.75832	0.41923	0.39614	0.62755	0.73546	-0.00501	1.00000
8	**Origin**	GTGGTAAG	**Origin**	1.00000	0.21077	0.75771	0.64640	0.78405	0.43906	0.52347

	Represent	CTGCTGAC	**Represent**	0.21077	1.00000	0.32472	0.30035	0.16803	0.42625	0.34303
	Analog 1	GTGGTTAC	**Analog 1**	0.75771	0.32472	1.00000	0.64308	0.72698	0.25053	0.25271
	Analog 2	GTGGTGTG	**Analog 2**	0.64640	0.30035	0.64308	1.00000	0.70047	0.18422	0.18130
	Analog 3	GTGGTATC	**Analog 3**	0.78405	0.16803	0.72698	0.70047	1.00000	0.25372	0.27125
	Analog 4	GTGCGAAG	**Analog 4**	0.43906	0.42625	0.25053	0.18422	0.25372	1.00000	0.38353
	Analog 5	CTGATAAG	**Analog 5**	0.52347	0.34303	0.25271	0.18130	0.27125	0.38353	1.00000
9	**Origin**	CGCAACAA	**Origin**	1.00000	0.34915	0.63166	0.56163	0.60071	0.60770	0.46347
	Represent	CGAGACGA	**Represent**	0.34915	1.00000	0.22146	0.19036	0.48417	0.45283	0.38386
	Analog 1	CGCTAAAA	**Analog 1**	0.63166	0.22146	1.00000	0.44045	0.29475	0.52498	0.57539
	Analog 2	CGCAGCCA	**Analog 2**	0.56163	0.19036	0.44045	1.00000	0.37489	0.42251	0.21743
	Analog 3	AGCAACGA	**Analog 3**	0.60071	0.48417	0.29475	0.37489	1.00000	0.40668	0.09741
	Analog 4	CGCGACTA	**Analog 4**	0.60770	0.45283	0.52498	0.42251	0.40668	1.00000	0.24345
	Analog 5	CGAAAAAA	**Analog 5**	0.46347	0.38386	0.57539	0.21743	0.09741	0.24345	1.00000
10	**Origin**	GGTGACGC	**Origin**	1.00000	0.74247	0.61711	0.49341	0.53704	0.70005	0.67281
	Represent	GGTGCCGC	**Represent**	0.74247	1.00000	0.87777	0.33669	0.49897	0.51118	0.50896
	Analog 1	CGTGCCGC	**Analog 1**	0.61711	0.87777	1.00000	0.20250	0.39212	0.37547	0.39219
	Analog 2	GGTGAGAC	**Analog 2**	0.49341	0.33669	0.20250	1.00000	0.11488	0.30559	0.11993
	Analog 3	GGCGTCGC	**Analog 3**	0.53704	0.49897	0.39212	0.11488	1.00000	0.38381	0.72355
	Analog 4	GGTAACGT	**Analog 4**	0.70005	0.51118	0.37547	0.30559	0.38381	1.00000	0.56293
	Analog 5	GGCTACGC	**Analog 5**	0.67281	0.50896	0.39219	0.11993	0.72355	0.56293	1.00000
11	**Origin**	ATCCCTGT	**Origin**	1.00000	0.14992	0.58778	0.53981	0.53120	0.30531	0.59474
	Represent	CTCGCCGG	**Represent**	0.14992	1.00000	0.16714	0.27583	0.19743	0.58083	0.14180
	Analog 1	ATTCCTGG	**Analog 1**	0.58778	0.16714	1.00000	0.24160	0.40048	0.06468	0.19837
	Analog 2	ATCCCCCT	**Analog 2**	0.53981	0.27583	0.24160	1.00000	0.28943	0.14577	0.25582
	Analog 3	ATCCGTGG	**Analog 3**	0.53120	0.19743	0.40048	0.28943	1.00000	0.11985	0.82414
	Analog 4	ATCGCAGT	**Analog 4**	0.30531	0.58083	0.06468	0.14577	0.11985	1.00000	0.17724
	Analog 5	CTCCGTGT	**Analog 5**	0.59474	0.14180	0.19837	0.25582	0.82414	0.17724	1.00000
12	**Origin**	GCGTAGAG	**Origin**	1.00000	0.56756	0.77963	0.58819	0.53958	0.33426	0.56698
	Represent	GCGCAGTG	**Represent**	0.56756	1.00000	0.45845	0.60051	0.36743	0.46587	0.44971
	Analog 1	GCGTTGAT	**Analog 1**	0.77963	0.45845	1.00000	0.58341	0.53750	0.12007	0.35349
	Analog 2	GCGTCGTG	**Analog 2**	0.58819	0.60051	0.58341	1.00000	0.47859	-0.00859	0.20137
	Analog 3	GCGTGGCG	**Analog 3**	0.53958	0.36743	0.53750	0.47859	1.00000	-0.01275	0.18123
	Analog 4	GAGCAGAG	**Analog 4**	0.33426	0.46587	0.12007	-0.00859	-0.01275	1.00000	0.44529
	Analog 5	GCACAGAG	**Analog 5**	0.56698	0.44971	0.35349	0.20137	0.18123	0.44529	1.00000
13	**Origin**	TGAATGGA	**Origin**	1.00000	0.33531	0.33219	0.58504	0.36472	0.41120	0.45581
	Represent	TAAATGCA	**Represent**	0.33531	1.00000	0.87100	0.18495	0.30198	0.42408	0.25584
	Analog 1	TTAATGCA	**Analog 1**	0.33219	0.87100	1.00000	0.18770	0.14327	0.57800	0.25822
	Analog 2	TGCATGGT	**Analog 2**	0.58504	0.18495	0.18770	1.00000	0.07672	0.23521	0.40322

	Analog 3	TAAATTGA	**Analog 3**	0.36472	0.30198	0.14327	0.07672	1.00000	0.20229	0.02979
	Analog 4	TTAATGTA	**Analog 4**	0.41120	0.42408	0.57800	0.23521	0.20229	1.00000	0.58281
	Analog 5	TGTATGTA	**Analog 5**	0.45581	0.25584	0.25822	0.40322	0.02979	0.58281	1.00000
14	**Origin**	GGCTTCTA	**Origin**	1.00000	0.80098	0.63811	0.59399	0.76193	0.51922	0.27126
	Represent	CGCTTCTA	**Represent**	0.80098	1.00000	0.83608	0.81062	0.57691	0.49388	0.25559
	Analog 1	CGCTTCAA	**Analog 1**	0.63811	0.83608	1.00000	0.73372	0.44303	0.32836	0.11086
	Analog 2	CGCTTTTA	**Analog 2**	0.59399	0.81062	0.73372	1.00000	0.36703	0.25225	0.02745
	Analog 3	GGCATCTT	**Analog 3**	0.76193	0.57691	0.44303	0.36703	1.00000	0.27353	0.44117
	Analog 4	ACCTTCTA	**Analog 4**	0.51922	0.49388	0.32836	0.25225	0.27353	1.00000	0.58299
	Analog 5	GCCATCTA	**Analog 5**	0.27126	0.25559	0.11086	0.02745	0.44117	0.58299	1.00000
15	**Origin**	TACGGAGC	**Origin**	1.00000	0.41688	0.72145	0.68853	0.68806	0.49378	0.65666
	Represent	TAGGGCGC	**Represent**	0.41688	1.00000	0.36559	0.16401	0.73426	0.52471	0.18049
	Analog 1	GACGGGGC	**Analog 1**	0.72145	0.36559	1.00000	0.51542	0.62726	0.23572	0.41761
	Analog 2	AACGGAAC	**Analog 2**	0.68853	0.16401	0.51542	1.00000	0.53270	0.35593	0.56589
	Analog 3	AACGGCGC	**Analog 3**	0.68806	0.73426	0.62726	0.53270	1.00000	0.22555	0.40183
	Analog 4	TAGGGAGA	**Analog 4**	0.49378	0.52471	0.23572	0.35593	0.22555	1.00000	0.52252
	Analog 5	TCCGGAGA	**Analog 5**	0.65666	0.18049	0.41761	0.56589	0.40183	0.52252	1.00000
16	**Origin**	ATCTGCGA	**Origin**	1.00000	0.78271	0.51974	0.42007	0.47262	0.64185	0.32496
	Represent	ATCAGCGA	**Represent**	0.78271	1.00000	0.39602	0.20037	0.43428	0.51873	0.58989
	Analog 1	AACTTCGA	**Analog 1**	0.51974	0.39602	1.00000	0.12976	0.42181	0.76470	0.10550
	Analog 2	ATCTGGGC	**Analog 2**	0.42007	0.20037	0.12976	1.00000	0.07504	0.25524	0.23288
	Analog 3	ATGTACGA	**Analog 3**	0.47262	0.43428	0.42181	0.07504	1.00000	0.46392	0.14419
	Analog 4	CTCTTCGA	**Analog 4**	0.64185	0.51873	0.76470	0.25524	0.46392	1.00000	0.25672
	Analog 5	ATCAGAGA	**Analog 5**	0.32496	0.58989	0.10550	0.23288	0.14419	0.25672	1.00000
17	**Origin**	CATAGAGT	**Origin**	1.00000	0.21552	0.48635	0.50266	0.53607	0.51804	0.52118
	Represent	CGCAGACT	**Represent**	0.21552	1.00000	0.49791	0.18023	0.32934	0.45263	0.19070
	Analog 1	GATAGACT	**Analog 1**	0.48635	0.49791	1.00000	0.32512	0.24706	0.23653	0.33119
	Analog 2	CCTAGAGG	**Analog 2**	0.50266	0.18023	0.32512	1.00000	0.60419	0.34211	0.46730
	Analog 3	CCCAGAGT	**Analog 3**	0.53607	0.32934	0.24706	0.60419	1.00000	0.41181	0.37550
	Analog 4	CGGAGAGT	**Analog 4**	0.51804	0.45263	0.23653	0.34211	0.41181	1.00000	0.36203
	Analog 5	CTTAGAGC	**Analog 5**	0.52118	0.19070	0.33119	0.46730	0.37550	0.36203	1.00000
18	**Origin**	CTCGGTCA	**Origin**	1.00000	0.62450	0.56625	0.73872	0.44279	0.64189	0.47586
	Represent	CCCGGTCG	**Represent**	0.62450	1.00000	0.81254	0.53397	0.40025	0.40138	0.29792
	Analog 1	CCCGGTAA	**Analog 1**	0.56625	0.81254	1.00000	0.69572	0.12211	0.39854	0.33905
	Analog 2	GTCGGTAA	**Analog 2**	0.73872	0.53397	0.69572	1.00000	0.25616	0.54181	0.41029
	Analog 3	CTCCGTCG	**Analog 3**	0.44279	0.40025	0.12211	0.25616	1.00000	0.14958	0.21761
	Analog 4	ATCGGGCA	**Analog 4**	0.64189	0.40138	0.39854	0.54181	0.14958	1.00000	0.19068
	Analog 5	CTAGGTGA	**Analog 5**	0.47586	0.29792	0.33905	0.41029	0.21761	0.19068	1.00000

19	**Origin**	AGTTTTTA	**Origin**	1.00000	-0.02111	0.34988	0.32100	0.56421	0.48464	0.30285
	Represent	ACTGGTCA	**Represent**	-0.02111	1.00000	0.56727	-0.08703	-0.02794	0.53745	0.28025
	Analog 1	ACTTTTCA	**Analog 1**	0.34988	0.56727	1.00000	0.19948	0.35627	-0.02001	0.47085
	Analog 2	AATTTGTA	**Analog 2**	0.32100	-0.08703	0.19948	1.00000	0.30128	-0.01130	0.06391
	Analog 3	ATTTTTTC	**Analog 3**	0.56421	-0.02794	0.35627	0.30128	1.00000	0.10971	0.28151
	Analog 4	AGTGGTTA	**Analog 4**	0.48464	0.53745	-0.02001	-0.01130	0.10971	1.00000	0.11937
	Analog 5	ACTCTTTA	**Analog 5**	0.30285	0.28025	0.47085	0.06391	0.28151	0.11937	1.00000
20	**Origin**	GCCATCTA	**Origin**	1.00000	0.63611	0.44015	0.55237	0.48212	0.46445	0.54852
	Represent	GCCAACAA	**Represent**	0.63611	1.00000	0.48537	0.38276	0.53243	0.47691	0.43000
	Analog 1	GCGAACTA	**Analog 1**	0.44015	0.48537	1.00000	0.06821	0.68445	0.65815	0.25647
	Analog 2	CCCATTTA	**Analog 2**	0.55237	0.38276	0.06821	1.00000	0.07094	0.09347	0.49455
	Analog 3	GCAAACTA	**Analog 3**	0.48212	0.53243	0.68445	0.07094	1.00000	0.31048	0.28281
	Analog 4	GCGATCAA	**Analog 4**	0.46445	0.47691	0.65815	0.09347	0.31048	1.00000	0.24132
	Analog 5	GCCCTTTA	**Analog 5**	0.54852	0.43000	0.25647	0.49455	0.28281	0.24132	1.00000
21	**Origin**	GATTTCAA	**Origin**	1.00000	0.37997	0.62283	0.60415	0.31086	0.55137	0.38115
	Represent	GTTTGCAA	**Represent**	0.37997	1.00000	0.46258	0.19317	0.52864	0.19361	0.48020
	Analog 1	GTATTCAA	**Analog 1**	0.62283	0.46258	1.00000	0.47825	-0.00148	0.26611	0.48874
	Analog 2	GAACTCAA	**Analog 2**	0.60415	0.19317	0.47825	1.00000	0.09067	0.13127	0.06473
	Analog 3	GATTGCCA	**Analog 3**	0.31086	0.52864	-0.00148	0.09067	1.00000	0.15598	0.04087
	Analog 4	AATTTTAA	**Analog 4**	0.55137	0.19361	0.26611	0.13127	0.15598	1.00000	0.44786
	Analog 5	GTTTTAAA	**Analog 5**	0.38115	0.48020	0.48874	0.06473	0.04087	0.44786	1.00000
22	**Origin**	ACGAACTG	**Origin**	1.00000	0.48302	0.64857	0.60687	0.38989	0.73153	0.48302
	Represent	ACCCACTG	**Represent**	0.48302	1.00000	0.13872	0.34782	0.51323	0.23923	1.00000
	Analog 1	TCGAAGTG	**Analog 1**	0.64857	0.13872	1.00000	0.38906	0.27000	0.46328	0.13872
	Analog 2	ACGCTCTG	**Analog 2**	0.60687	0.34782	0.38906	1.00000	0.20890	0.37173	0.34782
	Analog 3	ACCAATTG	**Analog 3**	0.38989	0.51323	0.27000	0.20890	1.00000	0.20594	0.51323
	Analog 4	ACGAACCT	**Analog 4**	0.73153	0.23923	0.46328	0.37173	0.20594	1.00000	0.23923
	Analog 5	ACCCACTG	**Analog 5**	0.48302	1.00000	0.13872	0.34782	0.51323	0.23923	1.00000
23	**Origin**	ATTCCACT	**Origin**	1.00000	0.31159	0.63972	0.33882	0.78137	0.52451	0.45195
	Represent	TGTGCACG	**Represent**	0.31159	1.00000	0.13446	0.56220	0.53287	0.53059	0.31767
	Analog 1	CTTCCAGT	**Analog 1**	0.63972	0.13446	1.00000	0.27887	0.49313	0.26322	0.21579
	Analog 2	ATTGCATT	**Analog 2**	0.33882	0.56220	0.27887	1.00000	0.16977	0.32620	0.09578
	Analog 3	TGTCCACT	**Analog 3**	0.78137	0.53287	0.49313	0.16977	1.00000	0.34235	0.28946
	Analog 4	ATTTCACG	**Analog 4**	0.52451	0.53059	0.26322	0.32620	0.34235	1.00000	0.53275
	Analog 5	ATTCGACG	**Analog 5**	0.45195	0.31767	0.21579	0.09578	0.28946	0.53275	1.00000
24	**Origin**	GTGCATCT	**Origin**	1.00000	0.31749	0.65722	0.67627	0.68540	0.37725	0.76298
	Represent	TCGCCGCT	**Represent**	0.31749	1.00000	0.52167	0.48771	0.59524	0.23552	0.19784
	Analog 1	CTGCAGCT	**Analog 1**	0.65722	0.52167	1.00000	0.49511	0.48399	0.12008	0.51433

	Analog 2	TTGCCTCT	**Analog 2**	0.67627	0.48771	0.49511	1.00000	0.49734	0.55693	0.45145
	Analog 3	TCGCATCT	**Analog 3**	0.68540	0.59524	0.48399	0.49734	1.00000	0.19258	0.46675
	Analog 4	GTCCCTCT	**Analog 4**	0.37725	0.23552	0.12008	0.55693	0.19258	1.00000	0.14959
	Analog 5	GTGCATGA	**Analog 5**	0.76298	0.19784	0.51433	0.45145	0.46675	0.14959	1.00000
25	**Origin**	TGTCTATC	**Origin**	1.00000	0.03436	0.45316	0.36904	0.46415	0.41380	0.39477
	Represent	GGGCAACC	**Represent**	0.03436	1.00000	0.23274	0.34578	0.20225	0.40896	-0.01300
	Analog 1	TATCAATC	**Analog 1**	0.45316	0.23274	1.00000	0.32922	0.23677	0.10651	0.43135
	Analog 2	TATCTACC	**Analog 2**	0.36904	0.34578	0.32922	1.00000	0.16753	0.08015	0.17075
	Analog 3	GGACTATC	**Analog 3**	0.46415	0.20225	0.23677	0.16753	1.00000	0.28275	0.20307
	Analog 4	TGGCTGTC	**Analog 4**	0.41380	0.40896	0.10651	0.08015	0.28275	1.00000	0.08423
	Analog 5	TTTCCATC	**Analog 5**	0.39477	-0.01300	0.43135	0.17075	0.20307	0.08423	1.00000
26	**Origin**	CCGTATTT	**Origin**	1.00000	0.07869	0.27126	0.64045	0.69127	0.66067	0.57817
	Represent	CGGCACTT	**Represent**	0.07869	1.00000	0.54786	0.31882	-0.00053	0.03281	0.37187
	Analog 1	CGGTAATT	**Analog 1**	0.27126	0.54786	1.00000	0.27335	0.19694	0.04705	-0.00496
	Analog 2	TCGTACTT	**Analog 2**	0.64045	0.31882	0.27335	1.00000	0.69970	0.38026	0.33143
	Analog 3	TCGTATAT	**Analog 3**	0.69127	-0.00053	0.19694	0.69970	1.00000	0.35961	0.54314
	Analog 4	CCGGTTTT	**Analog 4**	0.66067	0.03281	0.04705	0.38026	0.35961	1.00000	0.44479
	Analog 5	CCGCATAT	**Analog 5**	0.57817	0.37187	-0.00496	0.33143	0.54314	0.44479	1.00000
27	**Origin**	TGGCGAAT	**Origin**	1.00000	1.00000	0.50082	0.54350	0.59922	0.49966	0.50434
	Represent	TGGCGAAT	**Represent**	1.00000	1.00000	0.50082	0.54350	0.59922	0.49966	0.50434
	Analog 1	TGACGACT	**Analog 1**	0.50082	0.50082	1.00000	0.13947	0.78866	0.52241	0.40376
	Analog 2	TGGCCAGT	**Analog 2**	0.54350	0.54350	0.13947	1.00000	0.14228	0.35445	-0.00235
	Analog 3	TGACGAAG	**Analog 3**	0.59922	0.59922	0.78866	0.14228	1.00000	0.53828	0.51016
	Analog 4	TGTCGAGT	**Analog 4**	0.49966	0.49966	0.52241	0.35445	0.53828	1.00000	0.39996
	Analog 5	TACCGAAT	**Analog 5**	0.50434	0.50434	0.40376	-0.00235	0.51016	0.39996	1.00000
28	**Origin**	ATCCCTTG	**Origin**	1.00000	0.40908	0.43728	0.68990	0.60816	0.68641	0.40205
	Represent	ATACCTCG	**Represent**	0.40908	1.00000	0.42070	0.28458	0.09092	0.36174	0.81225
	Analog 1	ATACCGTG	**Analog 1**	0.43728	0.42070	1.00000	0.32540	0.07863	0.23114	0.24808
	Analog 2	ATCCCATT	**Analog 2**	0.68990	0.28458	0.32540	1.00000	0.49902	0.57935	0.27926
	Analog 3	ATCCATTA	**Analog 3**	0.60816	0.09092	0.07863	0.49902	1.00000	0.44225	0.08858
	Analog 4	ATCCCTGC	**Analog 4**	0.68641	0.36174	0.23114	0.57935	0.44225	1.00000	0.35550
	Analog 5	ATTCCTCG	**Analog 5**	0.40205	0.81225	0.24808	0.27926	0.08858	0.35550	1.00000
29	**Origin**	TGATTATT	**Origin**	1.00000	0.63159	0.66777	0.57690	0.39074	0.47446	0.30126
	Represent	GGATTATG	**Represent**	0.63159	1.00000	0.79894	0.69502	0.18988	0.63679	0.26581
	Analog 1	AGATTATG	**Analog 1**	0.66777	0.79894	1.00000	0.46099	0.19593	0.68531	0.28882
	Analog 2	GGATAATT	**Analog 2**	0.57690	0.69502	0.46099	1.00000	0.04272	0.24801	0.09636
	Analog 3	TGTTTACT	**Analog 3**	0.39074	0.18988	0.19593	0.04272	1.00000	0.14622	0.55771
	Analog 4	TAATTATG	**Analog 4**	0.47446	0.63679	0.68531	0.24801	0.14622	1.00000	0.32771

	Analog 5	TTATTACT	**Analog 5**	0.30126	0.26581	0.28882	0.09636	0.55771	0.32771	1.00000
30	**Origin**	AATCGGGC	**Origin**	1.00000	0.48080	0.77166	0.62596	0.47166	0.26031	0.65910
	Represent	AACCGGAC	**Represent**	0.48080	1.00000	0.44585	0.48877	0.48837	0.36421	0.75930
	Analog 1	GATCGGGG	**Analog 1**	0.77166	0.44585	1.00000	0.64463	0.43756	0.20774	0.62287
	Analog 2	TATCGGTC	**Analog 2**	0.62596	0.48877	0.64463	1.00000	0.71095	0.22914	0.47409
	Analog 3	AAGCGGTC	**Analog 3**	0.47166	0.48837	0.43756	0.71095	1.00000	0.09639	0.47333
	Analog 4	AATCAGAC	**Analog 4**	0.26031	0.36421	0.20774	0.22914	0.09639	1.00000	0.09353
	Analog 5	AACCGGGT	**Analog 5**	0.65910	0.75930	0.62287	0.47409	0.47333	0.09353	1.00000

Mismatch-4		**Sequence**	**Pearson's correlation coefficient**	**Origin**	**Origin**	**Represent**	**Analog 1**	**Analog 2**	**Analog 3**	**Analog 4**
1	**Origin**	CTATAAGC	**Origin**	1.00000	-0.02287	0.06836	0.10165	0.10044	0.11527	0.00838
	Represent	AAATCGCG	**Represent**	-0.02287	1.00000	0.15242	0.28245	0.08464	0.31083	-0.08313
	Analog 1	ACATCATC	**Analog 1**	0.06836	0.15242	1.00000	-0.03350	-0.02942	-0.08772	0.24992
	Analog 2	CATTAACG	**Analog 2**	0.10165	0.28245	-0.03350	1.00000	0.10337	0.01472	0.10409
	Analog 3	AAAAAAAC	**Analog 3**	0.10044	0.08464	-0.02942	0.10337	1.00000	-0.04137	-0.08809
	Analog 4	CTAGAGCA	**Analog 4**	0.11527	0.31083	-0.08772	0.01472	-0.04137	1.00000	-0.08753
	Analog 5	ATTTTATC	**Analog 5**	0.00838	-0.08313	0.24992	0.10409	-0.08809	-0.08753	1.00000
2	**Origin**	CCCCACTC	**Origin**	1.00000	0.12412	0.12384	0.28981	0.33523	0.11451	0.30723
	Represent	GCAGACGC	**Represent**	0.12412	1.00000	0.10190	0.20529	0.23218	0.05615	0.54418
	Analog 1	ACTGAGTC	**Analog 1**	0.12384	0.10190	1.00000	-0.06808	0.22746	0.33465	0.03981
	Analog 2	CCCAGAGC	**Analog 2**	0.28981	0.20529	-0.06808	1.00000	0.13722	-0.01446	-0.03735
	Analog 3	ACCGACCT	**Analog 3**	0.33523	0.23218	0.22746	0.13722	1.00000	0.00980	0.16595
	Analog 4	ACACGGTC	**Analog 4**	0.11451	0.05615	0.33465	-0.01446	0.00980	1.00000	0.14828
	Analog 5	GCATACTA	**Analog 5**	0.30723	0.54418	0.03981	-0.03735	0.16595	0.14828	1.00000
3	**Origin**	TTCGGTGT	**Origin**	1.00000	0.28003	0.44157	0.40304	0.15853	0.08692	0.04161
	Represent	TCAGGCGT	**Represent**	0.28003	1.00000	0.25844	0.16638	0.35697	0.32539	-0.06505
	Analog 1	TCCGGATC	**Analog 1**	0.44157	0.25844	1.00000	0.21967	0.08963	-0.06343	-0.01348
	Analog 2	GTTGGTTA	**Analog 2**	0.40304	0.16638	0.21967	1.00000	-0.01328	-0.06315	0.25999
	Analog 3	TCAGATGG	**Analog 3**	0.15853	0.35697	0.08963	-0.01328	1.00000	-0.00573	-0.01889
	Analog 4	TGGGTCGT	**Analog 4**	0.08692	0.32539	-0.06343	-0.06315	-0.00573	1.00000	0.14749
	Analog 5	GTGGCTTT	**Analog 5**	0.04161	-0.06505	-0.01348	0.25999	-0.01889	0.14749	1.00000
4	**Origin**	CTATCGGC	**Origin**	1.00000	0.44042	0.34357	0.10935	0.07397	0.37574	0.33245
	Represent	CCACCGGG	**Represent**	0.44042	1.00000	0.22431	0.28105	0.46700	0.19447	0.37183
	Analog 1	GAATAGGA	**Analog 1**	0.34357	0.22431	1.00000	-0.09110	0.09155	-0.00757	-0.04872
	Analog 2	CTACCCTG	**Analog 2**	0.10935	0.28105	-0.09110	1.00000	-0.07829	-0.02637	0.29388
	Analog 3	CCATTAGG	**Analog 3**	0.07397	0.46700	0.09155	-0.07829	1.00000	-0.08671	-0.12182
	Analog 4	TTGTCGCA	**Analog 4**	0.37574	0.19447	-0.00757	-0.02637	-0.08671	1.00000	0.38953
	Analog 5	CTGCCGAT	**Analog 5**	0.33245	0.37183	-0.04872	0.29388	-0.12182	0.38953	1.00000

5	**Origin**	CTGGGGGT	**Origin**	1.00000	0.63423	0.20298	0.48807	0.19202	0.32762	0.00189
	Represent	CCGGGGGG	**Represent**	0.63423	1.00000	0.13868	0.43494	0.36095	0.60042	-0.01035
	Analog 1	ATTGGTCT	**Analog 1**	0.20298	0.13868	1.00000	0.20636	0.18167	-0.06703	-0.05395
	Analog 2	AGGGGGCA	**Analog 2**	0.48807	0.43494	0.20636	1.00000	0.12489	0.15503	0.00173
	Analog 3	CCAGGAGA	**Analog 3**	0.19202	0.36095	0.18167	0.12489	1.00000	0.03294	-0.06122
	Analog 4	ACGGCGGG	**Analog 4**	0.32762	0.60042	-0.06703	0.15503	0.03294	1.00000	0.38343
	Analog 5	CACGCGTT	**Analog 5**	0.00189	-0.01035	-0.05395	0.00173	-0.06122	0.38343	1.00000
6	**Origin**	CATTTAAT	**Origin**	1.00000	0.04548	0.23073	0.11512	-0.03743	0.04485	0.15927
	Represent	GACTGTAC	**Represent**	0.04548	1.00000	0.35460	0.38113	-0.12791	0.20893	0.30361
	Analog 1	AACTTATC	**Analog 1**	0.23073	0.35460	1.00000	-0.06905	0.04451	0.23878	-0.02476
	Analog 2	CCTTGTAA	**Analog 2**	0.11512	0.38113	-0.06905	1.00000	0.13938	0.15684	0.02537
	Analog 3	CCGCTATT	**Analog 3**	-0.03743	-0.12791	0.04451	0.13938	1.00000	0.13677	-0.08909
	Analog 4	AAGTGATT	**Analog 4**	0.04485	0.20893	0.23878	0.15684	0.13677	1.00000	-0.08114
	Analog 5	GATGTTAC	**Analog 5**	0.15927	0.30361	-0.02476	0.02537	-0.08909	-0.08114	1.00000
7	**Origin**	ATCGTGCT	**Origin**	1.00000	0.08897	0.26531	0.18342	0.24696	0.00114	0.44000
	Represent	GCTTTGGT	**Represent**	0.08897	1.00000	0.29648	0.23055	0.39872	0.23272	0.18803
	Analog 1	ACTGTGTC	**Analog 1**	0.26531	0.29648	1.00000	0.32031	0.48816	-0.07945	0.11170
	Analog 2	TACTTGTT	**Analog 2**	0.18342	0.23055	0.32031	1.00000	0.36497	0.00277	0.24113
	Analog 3	GCAGTGTT	**Analog 3**	0.24696	0.39872	0.48816	0.36497	1.00000	-0.07979	0.13364
	Analog 4	AGCCAGGT	**Analog 4**	0.00114	0.23272	-0.07945	0.00277	-0.07979	1.00000	-0.05952
	Analog 5	GTATTGCG	**Analog 5**	0.44000	0.18803	0.11170	0.24113	0.13364	-0.05952	1.00000
8	**Origin**	ACGCGGCG	**Origin**	1.00000	0.31044	0.38035	0.09430	0.22288	0.25412	0.24794
	Represent	AGCCGCCG	**Represent**	0.31044	1.00000	0.53242	0.28846	-0.06404	0.30835	0.37037
	Analog 1	GGGCGCCT	**Analog 1**	0.38035	0.53242	1.00000	-0.00915	-0.02201	0.12351	0.20524
	Analog 2	AGCTGGAG	**Analog 2**	0.09430	0.28846	-0.00915	1.00000	-0.06590	-0.12739	-0.00359
	Analog 3	AAGGTGCC	**Analog 3**	0.22288	-0.06404	-0.02201	-0.06590	1.00000	0.00176	-0.07277
	Analog 4	ACAATCCG	**Analog 4**	0.25412	0.30835	0.12351	-0.12739	0.00176	1.00000	-0.00486
	Analog 5	CCCCGTCA	**Analog 5**	0.24794	0.37037	0.20524	-0.00359	-0.07277	-0.00486	1.00000
9	**Origin**	CGACTCGC	**Origin**	1.00000	0.21664	0.06995	0.24368	0.30873	0.41397	0.06845
	Represent	CGGGTGGG	**Represent**	0.21664	1.00000	-0.12923	0.27186	0.42644	0.14338	-0.12999
	Analog 1	CAACGAAC	**Analog 1**	0.06995	-0.12923	1.00000	-0.08106	-0.13038	0.10529	0.34811
	Analog 2	ACAATGGC	**Analog 2**	0.24368	0.27186	-0.08106	1.00000	-0.00154	-0.07654	-0.08172
	Analog 3	CTGGTCGG	**Analog 3**	0.30873	0.42644	-0.13038	-0.00154	1.00000	-0.12767	-0.13122
	Analog 4	CGACCTTT	**Analog 4**	0.41397	0.14338	0.10529	-0.07654	-0.12767	1.00000	0.14835
	Analog 5	CAACATCC	**Analog 5**	0.06845	-0.12999	0.34811	-0.08172	-0.13122	0.14835	1.00000
10	**Origin**	GCGAAGCG	**Origin**	1.00000	0.52125	0.28005	0.18944	0.33240	0.24452	0.03821
	Represent	GCGAGGAG	**Represent**	0.52125	1.00000	0.23010	0.34851	0.29791	-0.05398	0.58307
	Analog 1	GCAAATGT	**Analog 1**	0.28005	0.23010	1.00000	0.31573	-0.00930	0.23348	-0.01903

	Analog 2	GCTAGAGG	**Analog 2**	0.18944	0.34851	0.31573	1.00000	-0.01675	-0.05608	0.29239
	Analog 3	CCGACCCC	**Analog 3**	0.33240	0.29791	-0.00930	-0.01675	1.00000	0.00191	-0.03215
	Analog 4	ACACATCG	**Analog 4**	0.24452	-0.05398	0.23348	-0.05608	0.00191	1.00000	-0.07043
	Analog 5	TCTAGGAG	**Analog 5**	0.03821	0.58307	-0.01903	0.29239	-0.03215	-0.07043	1.00000
11	**Origin**	TACGTGGC	**Origin**	1.00000	0.37762	0.28060	0.26961	0.34498	0.14773	0.33425
	Represent	GGCGTTGG	**Represent**	0.37762	1.00000	0.26603	-0.05054	0.72555	0.27339	0.32302
	Analog 1	TCCGAAGT	**Analog 1**	0.28060	0.26603	1.00000	-0.00826	0.26847	0.00067	0.51130
	Analog 2	TATAAGGA	**Analog 2**	0.26961	-0.05054	-0.00826	1.00000	-0.11504	0.01137	-0.12754
	Analog 3	GGCGTAAC	**Analog 3**	0.34498	0.72555	0.26847	-0.11504	1.00000	-0.04458	0.35227
	Analog 4	TACCCTGG	**Analog 4**	0.14773	0.27339	0.00067	0.01137	-0.04458	1.00000	-0.06119
	Analog 5	TCCGTCCT	**Analog 5**	0.33425	0.32302	0.51130	-0.12754	0.35227	-0.06119	1.00000
12	**Origin**	TGGCGTAT	**Origin**	1.00000	0.00302	0.15162	0.22200	0.31546	0.03633	0.49888
	Represent	CAGGCTAG	**Represent**	0.00302	1.00000	0.00801	0.26018	-0.10325	0.43795	0.15401
	Analog 1	TGTAGGAG	**Analog 1**	0.15162	0.00801	1.00000	0.12797	0.21255	0.14099	-0.05801
	Analog 2	AGGGGCAG	**Analog 2**	0.22200	0.26018	0.12797	1.00000	0.03847	0.02672	0.00049
	Analog 3	CGTCGAAA	**Analog 3**	0.31546	-0.10325	0.21255	0.03847	1.00000	0.12225	0.33732
	Analog 4	GGTGCTAT	**Analog 4**	0.03633	0.43795	0.14099	0.02672	0.12225	1.00000	-0.13146
	Analog 5	CAGCGAGT	**Analog 5**	0.49888	0.15401	-0.05801	0.00049	0.33732	-0.13146	1.00000
13	**Origin**	GAGACACA	**Origin**	1.00000	-0.02062	0.03451	0.13717	-0.02988	0.15028	0.08963
	Represent	GGGGCCGA	**Represent**	-0.02062	1.00000	0.76212	0.17311	0.21735	0.34909	-0.07375
	Analog 1	GGGGCCCT	**Analog 1**	0.03451	0.76212	1.00000	0.17520	0.08769	0.53570	-0.02809
	Analog 2	GTAACCTA	**Analog 2**	0.13717	0.17311	0.17520	1.00000	-0.08634	0.19629	-0.01842
	Analog 3	GGTAGAGA	**Analog 3**	-0.02988	0.21735	0.08769	-0.08634	1.00000	-0.06289	-0.12897
	Analog 4	AGGTCCCA	**Analog 4**	0.15028	0.34909	0.53570	0.19629	-0.06289	1.00000	0.07603
	Analog 5	GCACCTCA	**Analog 5**	0.08963	-0.07375	-0.02809	-0.01842	-0.12897	0.07603	1.00000
14	**Origin**	CACGTCGT	**Origin**	1.00000	0.61098	0.40092	0.46525	0.34005	0.36409	0.10323
	Represent	CGCGTCGG	**Represent**	0.61098	1.00000	0.47449	0.40931	0.22261	0.32181	0.50160
	Analog 1	ACCGTAGG	**Analog 1**	0.40092	0.47449	1.00000	0.36267	0.57219	0.33953	-0.02071
	Analog 2	ATCGTCCC	**Analog 2**	0.46525	0.40931	0.36267	1.00000	0.20649	0.11616	0.31252
	Analog 3	ACCGAGGT	**Analog 3**	0.34005	0.22261	0.57219	0.20649	1.00000	0.28356	-0.05726
	Analog 4	ACCCTCGA	**Analog 4**	0.36409	0.32181	0.33953	0.11616	0.28356	1.00000	0.10267
	Analog 5	CGCTTCCA	**Analog 5**	0.10323	0.50160	-0.02071	0.31252	-0.05726	0.10267	1.00000
15	**Origin**	GCCTCATT	**Origin**	1.00000	-0.00149	0.14758	0.22011	-0.00003	0.41719	0.32902
	Represent	CACGCCAT	**Represent**	-0.00149	1.00000	0.06781	-0.02291	0.92027	0.19955	-0.12595
	Analog 1	CATTAATT	**Analog 1**	0.14758	0.06781	1.00000	-0.01968	-0.07268	-0.09166	0.10674
	Analog 2	CCCCGCTT	**Analog 2**	0.22011	-0.02291	-0.01968	1.00000	-0.02198	0.14883	-0.02239
	Analog 3	GACGCCAT	**Analog 3**	-0.00003	0.92027	-0.07268	-0.02198	1.00000	0.20255	-0.12548
	Analog 4	GCCGTGTA	**Analog 4**	0.41719	0.19955	-0.09166	0.14883	0.20255	1.00000	0.31049

	Analog 5	GCTTTTTA	**Analog 5**	0.32902	-0.12595	0.10674	-0.02239	-0.12548	0.31049	1.00000
16	**Origin**	CGCCACAC	**Origin**	1.00000	0.29908	0.18603	0.23431	0.36395	0.26829	0.38340
	Represent	CGGCATGG	**Represent**	0.29908	1.00000	0.57437	0.05150	0.16018	0.29270	0.22017
	Analog 1	CGGCCATC	**Analog 1**	0.18603	0.57437	1.00000	-0.06139	-0.05230	-0.05621	0.21013
	Analog 2	CTCCAGCG	**Analog 2**	0.23431	0.05150	-0.06139	1.00000	-0.03748	0.26034	-0.07829
	Analog 3	GGCAACGG	**Analog 3**	0.36395	0.16018	-0.05230	-0.03748	1.00000	0.05001	0.25507
	Analog 4	AACCATGC	**Analog 4**	0.26829	0.29270	-0.05621	0.26034	0.05001	1.00000	-0.07814
	Analog 5	CGAAACTA	**Analog 5**	0.38340	0.22017	0.21013	-0.07829	0.25507	-0.07814	1.00000
17	**Origin**	GCGCGGAC	**Origin**	1.00000	0.57091	-0.01201	0.25948	-0.00763	0.43080	0.43303
	Represent	GCGCTACC	**Represent**	0.57091	1.00000	0.05561	0.36680	-0.05313	0.87106	0.47406
	Analog 1	GTACTGTC	**Analog 1**	-0.01201	0.05561	1.00000	0.29145	0.02241	0.06542	0.26465
	Analog 2	GTGCTTAT	**Analog 2**	0.25948	0.36680	0.29145	1.00000	-0.01774	0.40042	0.00083
	Analog 3	GGGTGTTC	**Analog 3**	-0.00763	-0.05313	0.02241	-0.01774	1.00000	-0.04833	-0.02859
	Analog 4	TCGCTACC	**Analog 4**	0.43080	0.87106	0.06542	0.40042	-0.04833	1.00000	0.28258
	Analog 5	GCGATGTA	**Analog 5**	0.43303	0.47406	0.26465	0.00083	-0.02859	0.28258	1.00000
18	**Origin**	TCGCCACA	**Origin**	1.00000	0.16170	0.44922	0.21657	0.64101	0.27899	0.20331
	Represent	CCCCCGGA	**Represent**	0.16170	1.00000	0.19004	0.24596	0.17887	0.21091	0.13406
	Analog 1	TCGCGGGG	**Analog 1**	0.44922	0.19004	1.00000	0.42061	0.41900	0.25550	-0.06622
	Analog 2	TTGCTGGA	**Analog 2**	0.21657	0.24596	0.42061	1.00000	0.23792	0.10102	0.04880
	Analog 3	ACGCCTTT	**Analog 3**	0.64101	0.17887	0.41900	0.23792	1.00000	0.26271	-0.06370
	Analog 4	CCGTAAGA	**Analog 4**	0.27899	0.21091	0.25550	0.10102	0.26271	1.00000	-0.09789
	Analog 5	AGCCTACA	**Analog 5**	0.20331	0.13406	-0.06622	0.04880	-0.06370	-0.09789	1.00000
19	**Origin**	TCATGAAT	**Origin**	1.00000	-0.00949	0.15826	0.23116	0.28224	0.36852	0.35182
	Represent	CAACGTGA	**Represent**	-0.00949	1.00000	0.46362	0.43065	0.16868	-0.07139	0.12788
	Analog 1	CTACGAGT	**Analog 1**	0.15826	0.46362	1.00000	0.03935	0.13492	-0.02120	0.11912
	Analog 2	TGATGTGA	**Analog 2**	0.23116	0.43065	0.03935	1.00000	-0.02862	0.03024	0.14160
	Analog 3	TCACATTT	**Analog 3**	0.28224	0.16868	0.13492	-0.02862	1.00000	0.28767	-0.00540
	Analog 4	ACATAATA	**Analog 4**	0.36852	-0.07139	-0.02120	0.03024	0.28767	1.00000	0.08360
	Analog 5	CATTGATT	**Analog 5**	0.35182	0.12788	0.11912	0.14160	-0.00540	0.08360	1.00000
20	**Origin**	ATCTGACC	**Origin**	1.00000	0.26964	0.30275	0.31792	-0.02161	0.32335	0.15209
	Represent	TGCCGACG	**Represent**	0.26964	1.00000	0.66261	0.19913	0.30973	0.12199	-0.00794
	Analog 1	TGCTTACG	**Analog 1**	0.30275	0.66261	1.00000	0.09222	-0.06380	0.15335	-0.04537
	Analog 2	GTTGGACT	**Analog 2**	0.31792	0.19913	0.09222	1.00000	-0.06929	0.15617	0.20825
	Analog 3	ACCCGGGC	**Analog 3**	-0.02161	0.30973	-0.06380	-0.06929	1.00000	-0.06889	0.10440
	Analog 4	CACGAACC	**Analog 4**	0.32335	0.12199	0.15335	0.15617	-0.06889	1.00000	0.17734
	Analog 5	AAGGGGCC	**Analog 5**	0.15209	-0.00794	-0.04537	0.20825	0.10440	0.17734	1.00000
21	**Origin**	ACCCGGTC	**Origin**	1.00000	0.33075	0.16127	0.20256	0.33173	-0.01255	0.10015
	Represent	GCCAGGGC	**Represent**	0.33075	1.00000	0.53582	0.39679	0.21022	0.35789	0.09944

	Analog 1	GCCGGAGC	**Analog 1**	0.16127	0.53582	1.00000	-0.01535	0.21414	0.17919	-0.01314
	Analog 2	TTCAGGAC	**Analog 2**	0.20256	0.39679	-0.01535	1.00000	0.03681	-0.00730	0.07655
	Analog 3	ACCTGTAT	**Analog 3**	0.33173	0.21022	0.21414	0.03681	1.00000	0.07166	0.32476
	Analog 4	AGCTTGGC	**Analog 4**	-0.01255	0.35789	0.17919	-0.00730	0.07166	1.00000	-0.12852
	Analog 5	ACTAGTCC	**Analog 5**	0.10015	0.09944	-0.01314	0.07655	0.32476	-0.12852	1.00000
22	**Origin**	ACAGCAGG	**Origin**	1.00000	0.47608	0.03917	0.54410	0.23557	0.17567	0.08931
	Represent	CCAGCGGC	**Represent**	0.47608	1.00000	-0.00500	0.47007	0.20716	0.48907	-0.05747
	Analog 1	GCCGGATG	**Analog 1**	0.03917	-0.00500	1.00000	0.04519	0.33333	-0.05592	-0.02680
	Analog 2	TCAGCTTT	**Analog 2**	0.54410	0.47007	0.04519	1.00000	-0.00631	0.00243	-0.05999
	Analog 3	GCCCCAGC	**Analog 3**	0.23557	0.20716	0.33333	-0.00631	1.00000	0.04722	0.46922
	Analog 4	CCGACGGG	**Analog 4**	0.17567	0.48907	-0.05592	0.00243	0.04722	1.00000	-0.06671
	Analog 5	AACCCAAG	**Analog 5**	0.08931	-0.05747	-0.02680	-0.05999	0.46922	-0.06671	1.00000
23	**Origin**	AGTTCGGG	**Origin**	1.00000	0.19543	-0.02009	0.44400	0.32394	0.55187	0.25505
	Represent	CCGACGTG	**Represent**	0.19543	1.00000	0.28223	0.47115	0.39046	0.43228	0.38670
	Analog 1	ATTACATG	**Analog 1**	-0.02009	0.28223	1.00000	0.22382	-0.12426	0.15805	0.12479
	Analog 2	ATGACGGA	**Analog 2**	0.44400	0.47115	0.22382	1.00000	0.20956	0.82471	0.21343
	Analog 3	CCGTAGGG	**Analog 3**	0.32394	0.39046	-0.12426	0.20956	1.00000	0.32964	-0.06698
	Analog 4	GTGACGGG	**Analog 4**	0.55187	0.43228	0.15805	0.82471	0.32964	1.00000	0.19179
	Analog 5	CGACCGTG	**Analog 5**	0.25505	0.38670	0.12479	0.21343	-0.06698	0.19179	1.00000
24	**Origin**	AGTTGTCT	**Origin**	1.00000	0.47914	0.23596	0.15301	-0.02788	0.20952	0.03895
	Represent	AGTGGTAT	**Represent**	0.47914	1.00000	-0.01428	0.15548	0.08936	0.34260	0.32121
	Analog 1	GCTTGGCA	**Analog 1**	0.23596	-0.01428	1.00000	-0.08417	0.08666	-0.02626	0.54016
	Analog 2	AGCTATAA	**Analog 2**	0.15301	0.15548	-0.08417	1.00000	-0.03620	-0.01600	-0.12064
	Analog 3	ACTCTTAT	**Analog 3**	-0.02788	0.08936	0.08666	-0.03620	1.00000	0.11128	0.19604
	Analog 4	CTTAGTAT	**Analog 4**	0.20952	0.34260	-0.02626	-0.01600	0.11128	1.00000	-0.01669
	Analog 5	ACTGGGCC	**Analog 5**	0.03895	0.32121	0.54016	-0.12064	0.19604	-0.01669	1.00000
25	**Origin**	ATGCACAT	**Origin**	1.00000	0.00479	0.21621	0.16952	0.31481	0.14309	0.23113
	Represent	GCGATCCA	**Represent**	0.00479	1.00000	0.06653	0.15373	-0.03656	0.54967	0.33392
	Analog 1	TTTCTCAC	**Analog 1**	0.21621	0.06653	1.00000	0.33687	0.18084	-0.06590	-0.01595
	Analog 2	AGAATCAT	**Analog 2**	0.16952	0.15373	0.33687	1.00000	0.18212	-0.03075	-0.00068
	Analog 3	GTCAACAG	**Analog 3**	0.31481	-0.03656	0.18084	0.18212	1.00000	0.16587	0.18624
	Analog 4	GCGAACGT	**Analog 4**	0.14309	0.54967	-0.06590	-0.03075	0.16587	1.00000	0.10858
	Analog 5	ATATACCA	**Analog 5**	0.23113	0.33392	-0.01595	-0.00068	0.18624	0.10858	1.00000
26	**Origin**	GTTTGGCG	**Origin**	1.00000	-0.02238	-0.02282	0.20800	0.31072	0.07872	0.11250
	Represent	TTGGTGTG	**Represent**	-0.02238	1.00000	0.47516	-0.03047	0.30487	0.11304	-0.08915
	Analog 1	GATATGTG	**Analog 1**	-0.02282	0.47516	1.00000	-0.03758	-0.05246	0.18928	-0.13021
	Analog 2	GTTCTTCT	**Analog 2**	0.20800	-0.03047	-0.03758	1.00000	0.07495	-0.02907	-0.02616
	Analog 3	GTGGCGCC	**Analog 3**	0.31072	0.30487	-0.05246	0.07495	1.00000	-0.06257	-0.09357

	Analog 4	ACTTTGAG	**Analog 4**	0.07872	0.11304	0.18928	-0.02907	-0.06257	1.00000	-0.08724
	Analog 5	CTCTGTGG	**Analog 5**	0.11250	-0.08915	-0.13021	-0.02616	-0.09357	-0.08724	1.00000
27	**Origin**	CTTTGTTG	**Origin**	1.00000	0.11236	0.18947	0.16954	-0.03439	0.21282	0.31688
	Represent	CACTATTT	**Represent**	0.11236	1.00000	0.19537	-0.08770	0.76537	0.13649	-0.01024
	Analog 1	CTCGTTTT	**Analog 1**	0.18947	0.19537	1.00000	0.03124	-0.01133	0.25858	0.26882
	Analog 2	CTTCAAAG	**Analog 2**	0.16954	-0.08770	0.03124	1.00000	0.09638	0.10037	0.08606
	Analog 3	CACTATAG	**Analog 3**	-0.03439	0.76537	-0.01133	0.09638	1.00000	0.00758	0.05329
	Analog 4	CTGGATTA	**Analog 4**	0.21282	0.13649	0.25858	0.10037	0.00758	1.00000	0.09226
	Analog 5	CTCAGTAT	**Analog 5**	0.31688	-0.01024	0.26882	0.08606	0.05329	0.09226	1.00000
28	**Origin**	GGAGGCTA	**Origin**	1.00000	0.10857	0.07013	0.37011	0.41986	0.11086	0.36267
	Represent	GCGGGGGC	**Represent**	0.10857	1.00000	0.13855	0.48153	0.34296	-0.07096	0.18274
	Analog 1	AGTAGGTA	**Analog 1**	0.07013	0.13855	1.00000	-0.06490	0.09421	-0.09398	0.16924
	Analog 2	CCGGGCGA	**Analog 2**	0.37011	0.48153	-0.06490	1.00000	0.17008	-0.01187	0.25898
	Analog 3	AGAGGAGC	**Analog 3**	0.41986	0.34296	0.09421	0.17008	1.00000	-0.06003	-0.05626
	Analog 4	GTCGACTT	**Analog 4**	0.11086	-0.07096	-0.09398	-0.01187	-0.06003	1.00000	0.06231
	Analog 5	GCTAGCTG	**Analog 5**	0.36267	0.18274	0.16924	0.25898	-0.05626	0.06231	1.00000
29	**Origin**	CGCATGTC	**Origin**	1.00000	0.57800	0.36864	0.24316	0.21531	0.14047	0.12375
	Represent	CGCGCGTC	**Represent**	0.57800	1.00000	0.07340	0.23250	0.39006	0.34517	0.21041
	Analog 1	GAAATGTA	**Analog 1**	0.36864	0.07340	1.00000	-0.09334	0.15945	0.17167	0.16539
	Analog 2	CGGGGCTC	**Analog 2**	0.24316	0.23250	-0.09334	1.00000	0.03329	-0.02774	-0.07036
	Analog 3	GGACCGTC	**Analog 3**	0.21531	0.39006	0.15945	0.03329	1.00000	0.06881	-0.07014
	Analog 4	CACGAGTG	**Analog 4**	0.14047	0.34517	0.17167	-0.02774	0.06881	1.00000	0.49229
	Analog 5	CACGTGGG	**Analog 5**	0.12375	0.21041	0.16539	-0.07036	-0.07014	0.49229	1.00000
30	**Origin**	ACTTGCCA	**Origin**	1.00000	0.21308	0.28402	0.23530	-0.02326	0.20339	0.09508
	Represent	GGGTGGCA	**Represent**	0.21308	1.00000	0.07028	0.69208	0.22750	0.09521	-0.01765
	Analog 1	TGTCCCCA	**Analog 1**	0.28402	0.07028	1.00000	0.08293	0.07897	0.15954	-0.01966
	Analog 2	GGGTGACA	**Analog 2**	0.23530	0.69208	0.08293	1.00000	-0.00105	0.10758	-0.01780
	Analog 3	AGTAGGAA	**Analog 3**	-0.02326	0.22750	0.07897	-0.00105	1.00000	-0.09332	-0.08751
	Analog 4	GATTCTCA	**Analog 4**	0.20339	0.09521	0.15954	0.10758	-0.09332	1.00000	0.33291
	Analog 5	ATTTTTCT	**Analog 5**	0.09508	-0.01765	-0.01966	-0.01780	-0.08751	0.33291	1.00000