

## Supplementary Data 3

### **Influenza virus segment 5 (+)RNA - secondary structure and new targets for antiviral strategies**

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| Binding site <sup>a</sup> | Probe sequence <sup>b</sup> | $\Delta G^{\circ}_{37}$ of duplex for complementary binding site (kcal/mol) <sup>c</sup> |
|---------------------------|-----------------------------|--|
| 3                         | uUgCug                      | -7.92  |
| 4                         | uUuGcg                      | -7.76  |
| 5                         | uUuUgg                      | -5.72  |
| 8                         | uGcUug                      | -7.92  |
| 9                         | cUgCug                      | -9.41  |
| 10                        | CcUgC                       | -9.74  |
| 11                        | CCcUg                       | -9.22  |
| 12                        | AcCcUg                      | -12.12   |
| 13                        | UdCcCg                      | -9.85  |
| 14                        | CUdCcg                      | -9.12  |
| 15                        | uCuDcg                      | -8.39  |
| 22                        | GuGdUg                      | -8.80  |
| 23                        | dGuGdg                      | -10.06   |
| 24                        | GdGUgg                      | -9.59  |
| 25                        | UGdGug                      | -11.04   |
| 26                        | GuGdGg                      | -9.64  |
| 27                        | GgUgDg                      | -12.76   |
| 28                        | CgGuGg                      | -10.37   |
| 29                        | UcGgUg                      | -12.01   |
| 30                        | CuCgGg                      | -10.29   |
| 31                        | DcUcGg                      | -12.16   |
| 32                        | CdCuCg                      | -10.76   |
| 33                        | uCdCug                      | -7.53  |
| 34                        | GUcDcg                      | -8.89  |
| 35                        | uGuCdG                      | -8.95  |
| 36                        | dUgUcg                      | -9.25  |
| 37                        | GdUgUg                      | -9.10  |
| 38                        | uGdUgg                      | -9.04  |
| 41                        | uGuUgg                      | -7.96  |
| 43                        | GdUgUg                      | -9.10  |
| 46                        | CdUgDg                      | -9.18  |
| 47                        | CCdUgg                      | -9.22  |
| 49                        | CGcCa                       | -9.24  |
| 50                        | AcGcC                       | -9.31  |
| 51                        | GDCcGc                      | -9.09  |
| 52                        | dGdCg                       | -8.69  |
| 53                        | GdGdCg                      | -11.92   |
| 54                        | uGdGdg                      | -10.09   |
| 55                        | uUgDgg                      | -8.85  |
| 56                        | cUuGdg                      | -10.82   |
| 57                        | cCuUgg                      | -9.08  |
| 58                        | GCCuug                      | -11.61   |

| Binding site <sup>a</sup> | Probe sequence <sup>b</sup> | $\Delta G^{\circ}_{37}$ of duplex for complementary binding site (kcal/mol) <sup>c</sup> |
|---------------------------|-----------------------------|--|
| 788                       | CdGgAg                      | -10.05   |
| 789                       | CCdGg                       | -9.20  |
| 790                       | CCcDG                       | -8.17  |
| 791                       | uCcCa                       | -8.86  |
| 792                       | UUcCcg                      | -9.17  |
| 793                       | dUuCcg                      | -8.58  |
| 795                       | GCdUug                      | -7.03  |
| 796                       | DgCdUg                      | -9.82  |
| 797                       | CdGcAg                      | -9.97  |
| 798                       | UCdGcg                      | -9.63  |
| 799                       | uUcDgg                      | -8.36  |
| 804                       | uCdDug                      | -6.75  |
| 806                       | cUuCdg                      | -8.20  |
| 807                       | uCuUcg                      | -7.82  |
| 809                       | GdUcUg                      | -9.02  |
| 810                       | dGdUcg                      | -9.60  |
| 811                       | GdGdUg                      | -9.45  |
| 812                       | uGdGdg                      | -10.09   |
| 813                       | dUgDgg                      | -9.90  |
| 815                       | dDdUgg                      | -7.95  |
| 818                       | GdDdDg                      | -7.79  |
| 819                       | dGdDdg                      | -9.00  |
| 820                       | CdGdDg                      | -9.07  |
| 821                       | CCdGdg                      | -10.27   |
| 822                       | GCcDG                       | -8.34  |
| 823                       | uGcCa                       | -9.09  |
| 824                       | GUgCc                       | -9.41  |
| 825                       | CgUgCg                      | -10.80   |
| 826                       | CcGuGg                      | -10.33   |
| 827                       | DcCgUg                      | -12.20   |
| 828                       | GDCcG                       | -8.92  |
| 829                       | AgDcC                       | -8.40  |
| 830                       | CdGdCg                      | -9.41  |
| 831                       | GCdGdg                      | -10.44   |
| 832                       | UgCdGg                      | -10.04   |
| 833                       | GUgCDg                      | -10.88   |
| 834                       | DgUgCg                      | -10.74   |
| 835                       | GdGUgg                      | -9.59  |
| 836                       | UGdGug                      | -11.04   |
| 837                       | dUgDgg                      | -9.90  |
| 838                       | GdUGdg                      | -11.39   |
| 839                       | GGdUgg                      | -9.69  |

|     |        |        |
|-----|--------|--------|
| 59  | UGcCug | -9.26  |
| 60  | GUgCc  | -9.41  |
| 61  | gGuGc  | -9.68  |
| 62  | UgGuGg | -9.69  |
| 63  | uUgGug | -10.89 |
| 68  | dUcGug | -8.30  |
| 69  | GdUcGg | -9.48  |
| 70  | dGdUcg | -12.03 |
| 71  | DdGdUg | -8.53  |
| 72  | uDdGdg | -8.78  |
| 73  | dUdDgg | -8.35  |
| 74  | CdUdDg | -9.65  |
| 75  | uCdUdg | -8.16  |
| 77  | gUuCdg | -8.22  |
| 78  | uGuUcg | -7.90  |
| 79  | cUgUug | -7.39  |
| 80  | UcUgUg | -8.97  |
| 81  | dUcUgg | -9.23  |
| 82  | CdUcUg | -10.53 |
| 83  | CCdUcg | -9.16  |
| 84  | UcCdUg | -8.97  |
| 85  | uUcCdg | -8.88  |
| 86  | uUuCcg | -7.53  |
| 90  | CCdGug | -8.67  |
| 91  | DcCdGg | -10.04 |
| 92  | CdCcAg | -11.10 |
| 93  | CCdCc  | -8.71  |
| 94  | CCcDC  | -7.72  |
| 95  | CcCcA  | -9.88  |
| 96  | UCcCc  | -9.54  |
| 97  | UUcCcg | -9.17  |
| 98  | gUuCcg | -9.04  |
| 99  | cGuUcg | -8.58  |
| 100 | GcGuUg | -9.23  |
| 101 | GGcGUg | -9.86  |
| 102 | uGgCg  | -9.88  |
| 103 | CUgGc  | -9.43  |
| 104 | UcUgGg | -9.91  |
| 105 | uUcUgg | -11.11 |
| 108 | GCdUug | -7.03  |
| 109 | DgCdUg | -9.82  |
| 110 | UdGCdg | -9.30  |
| 111 | gUdGcg | -10.29 |
| 112 | DgUdGg | -9.42  |
| 113 | CdGuDg | -10.84 |
| 114 | uCdGug | -8.00  |

|     |        |        |
|-----|--------|--------|
| 840 | DgGdUg | -12.06 |
| 841 | CdGgAg | -10.05 |
| 842 | UCdGgg | -9.50  |
| 843 | CUcDgg | -12.25 |
| 844 | uCuCdg | -11.00 |
| 845 | CUcUcg | -9.08  |
| 846 | CcUcUg | -10.09 |
| 847 | uCcUcg | -9.99  |
| 848 | dUcCug | -8.74  |
| 849 | GDUcCg | -8.60  |
| 850 | uGdUcg | -8.98  |
| 851 | CuGdUg | -8.78  |
| 852 | DcUgDg | -9.71  |
| 853 | CdCuGg | -8.74  |
| 854 | CCdCug | -11.28 |
| 855 | GCcDC  | -7.89  |
| 856 | GGcCA  | -8.51  |
| 857 | GGGcc  | -9.41  |
| 858 | UGgGc  | -9.85  |
| 859 | AuGgGg | -9.25  |
| 860 | UdUgGg | -11.48 |
| 864 | GdCuUg | -7.90  |
| 865 | GgAcUg | -9.76  |
| 866 | DgGdC  | -9.01  |
| 867 | CdGgAg | -10.05 |
| 868 | GCdGg  | -9.37  |
| 869 | AgCdGg | -12.43 |
| 870 | dDgCdg | -12.42 |
| 871 | CDdGcg | -9.52  |
| 872 | GcDdGg | -9.87  |
| 873 | GgCdDg | -12.45 |
| 874 | AgGcAg | -10.26 |
| 875 | CdGgC  | -9.72  |
| 876 | GCdGg  | -9.37  |
| 877 | AgCdGg | -12.43 |
| 878 | dDgCdg | -12.42 |
| 879 | CDdGcg | -9.52  |
| 880 | DcDdGg | -8.73  |
| 881 | CdCdDg | -10.21 |
| 882 | dCdCDg | -7.72  |
| 883 | CdCdCg | -8.53  |
| 884 | dCdCDg | -7.72  |
| 885 | UdCdCg | -7.82  |
| 886 | gUdCdg | -8.85  |
| 887 | CgUdCg | -9.03  |
| 888 | CcGuDg | -9.94  |

|     |        |        |
|-----|--------|--------|
| 115 | CUcDgg | -9.32  |
| 116 | uCuCdG | -11.00 |
| 117 | dUcUcg | -9.17  |
| 118 | GdUcUg | -9.02  |
| 119 | uGdUcg | -8.98  |
| 120 | CuGdUg | -8.78  |
| 121 | CcUgDg | -10.68 |
| 122 | CCcUg  | -9.22  |
| 123 | GcCcU  | -10.34 |
| 124 | UGcCc  | -9.77  |
| 125 | AuGcCg | -9.34  |
| 126 | GdUGcg | -9.82  |
| 127 | dGdUgg | -9.66  |
| 128 | CdGdUg | -10.96 |
| 129 | dCdGdg | -9.83  |
| 130 | dDcDgg | -9.15  |
| 131 | cDdCdG | -10.74 |
| 132 | CcDdCg | -9.25  |
| 133 | UcCdDg | -9.02  |
| 134 | uUcCdG | -8.88  |
| 135 | cUuCcG | -9.02  |
| 136 | uCuUcg | -7.82  |
| 140 | cCdUug | -7.39  |
| 141 | DcCdUg | -9.20  |
| 142 | dDcCdG | -9.67  |
| 143 | uDdCcG | -8.72  |
| 144 | CuDdCg | -7.86  |
| 145 | DcUdDg | -8.16  |
| 146 | cDcUdg | -9.07  |
| 147 | CCdCug | -8.20  |
| 148 | GCcDC  | -7.89  |
| 149 | uGcCa  | -9.09  |
| 150 | AuGcCg | -9.34  |
| 151 | DdUgCg | -9.25  |
| 152 | cDdUgg | -8.44  |
| 153 | CcDdUg | -10.80 |
| 154 | CcCdA  | -8.23  |
| 155 | uCcCa  | -8.86  |
| 156 | CUcCc  | -9.16  |
| 157 | CcUcC  | -9.51  |
| 158 | dCcUcg | -10.22 |
| 159 | dDcCug | -8.48  |
| 160 | GdAcCg | -9.21  |
| 161 | DgDdCg | -9.16  |
| 162 | UdGdDg | -8.36  |
| 163 | gUdGdg | -9.73  |

|     |        |        |
|-----|--------|--------|
| 889 | uCcGug | -9.12  |
| 890 | gUcCg  | -9.25  |
| 891 | AgUcCg | -11.78 |
| 892 | dDgUcg | -9.38  |
| 893 | CDdGug | -7.36  |
| 894 | GcDdGg | -9.87  |
| 895 | uGcDdg | -11.80 |
| 896 | CuGcDg | -10.12 |
| 897 | DcUgCg | -10.27 |
| 898 | CdCuGg | -8.74  |
| 899 | CCdCug | -11.28 |
| 900 | GCcDC  | -7.89  |
| 901 | GGcCA  | -8.51  |
| 902 | UGgCc  | -9.81  |
| 903 | CUgGc  | -9.43  |
| 904 | DcUgGg | -10.14 |
| 905 | CdCuGg | -11.32 |
| 906 | CCdCug | -11.28 |
| 907 | UcCdCg | -9.36  |
| 908 | dUcCdG | -9.93  |
| 909 | UdUcCg | -8.80  |
| 910 | dUdUcg | -8.16  |
| 912 | uCdUdg | -8.16  |
| 913 | gUcDug | -7.94  |
| 914 | DgUcDg | -9.69  |
| 915 | dDgUcg | -9.38  |
| 916 | dDdGug | -7.40  |
| 917 | CdDdGg | -8.15  |
| 918 | uCdDdg | -10.02 |
| 919 | cUcDdg | -9.06  |
| 920 | uCuCdG | -8.87  |
| 921 | CUcUcg | -9.08  |
| 922 | uCuCug | -7.68  |
| 923 | CUcUcg | -9.08  |
| 924 | uCuCug | -7.68  |
| 925 | uUcUcg | -8.12  |
| 926 | cUuCug | -7.01  |
| 927 | cCuUcg | -9.02  |
| 928 | CcCuUg | -9.50  |
| 929 | AcCcUg | -10.18 |
| 930 | UdCcCg | -9.85  |
| 931 | GUdCcg | -9.14  |
| 932 | DgUdCg | -8.97  |
| 933 | GdGUdg | -9.20  |
| 934 | DgDgUg | -10.26 |
| 935 | GdGdGg | -10.29 |

|     |        |        |
|-----|--------|--------|
| 164 | UgUdGg | -8.80  |
| 167 | gUdUgg | -8.68  |
| 169 | cUgUdg | -9.36  |
| 170 | UcUgUg | -8.97  |
| 171 | dUcUgg | -9.23  |
| 172 | CdUcUg | -10.53 |
| 173 | dCdUcg | -8.72  |
| 174 | CdCdUg | -8.14  |
| 175 | GCdCDg | -8.33  |
| 176 | UgCdCg | -9.59  |
| 177 | GUgCDg | -8.86  |
| 178 | uGuGcg | -10.00 |
| 179 | cUgUgg | -9.75  |
| 180 | UcUgUg | -10.91 |
| 181 | uUcUgg | -8.18  |
| 183 | dGuUcg | -8.52  |
| 185 | UGdGug | -7.96  |
| 186 | uUgDgg | -8.85  |
| 191 | UGdGug | -7.96  |
| 192 | CuGdGg | -9.62  |
| 193 | DcUgDg | -11.73 |
| 194 | CdCuGg | -8.74  |
| 195 | uCdCug | -10.61 |
| 196 | GUcDcg | -8.89  |
| 197 | DgUcDg | -9.69  |
| 198 | UdGuCg | -8.44  |
| 200 | CdUdGg | -8.42  |
| 201 | uCdUdg | -10.29 |
| 203 | cUuCdg | -8.20  |
| 204 | cCuUcg | -9.02  |
| 205 | CcCuUg | -9.50  |
| 206 | UcCcUg | -10.47 |
| 207 | CUcCc  | -9.16  |
| 208 | CcUcC  | -9.51  |
| 209 | GCCcUc | -9.33  |
| 210 | AgCcUg | -10.51 |
| 211 | CdGcC  | -9.68  |
| 212 | UCdGcg | -9.63  |
| 213 | dUcDgg | -9.41  |
| 214 | GdUCdg | -10.90 |
| 215 | GGdUcg | -9.63  |
| 216 | UgGdUg | -9.50  |
| 217 | CUgGdg | -10.37 |
| 218 | UcUgGg | -9.91  |
| 219 | uUcUgg | -11.11 |
| 221 | uGuUcg | -7.90  |

|     |        |        |
|-----|--------|--------|
| 936 | dGdGdg | -12.84 |
| 937 | CdGdGg | -9.86  |
| 938 | CCdGdg | -12.40 |
| 939 | DcCdGg | -10.04 |
| 940 | dDcCdg | -11.80 |
| 941 | CdAcCg | -8.78  |
| 942 | CcDdCg | -9.25  |
| 943 | UcCdDg | -9.02  |
| 944 | uUcCdg | -8.88  |
| 945 | dUuCcg | -8.58  |
| 950 | GdUcUg | -9.02  |
| 951 | GGdUcg | -9.63  |
| 952 | DgGdUg | -10.12 |
| 953 | dDgGdg | -10.59 |
| 954 | dDdGgg | -9.43  |
| 955 | GdDdGg | -11.16 |
| 956 | gGdDdg | -11.69 |
| 957 | CgGdAg | -9.74  |
| 958 | GcGgA  | -9.84  |
| 959 | GGcGG  | -9.30  |
| 960 | AgGcG  | -9.51  |
| 961 | CdGgC  | -9.72  |
| 962 | GCdGg  | -9.37  |
| 963 | AgCdGg | -12.43 |
| 964 | dDgCdg | -12.42 |
| 965 | GdAgCg | -9.54  |
| 966 | uGdDgg | -9.17  |
| 969 | uUuUgg | -5.72  |
| 972 | cUgUug | -7.39  |
| 973 | GcUgUg | -10.34 |
| 974 | GGcUg  | -9.43  |
| 975 | UgGcUg | -12.68 |
| 976 | CUgGc  | -9.43  |
| 977 | CcUgG  | -9.61  |
| 978 | dCcUgg | -13.21 |
| 979 | GDcCUg | -10.67 |
| 980 | AgDcC  | -8.40  |
| 981 | dDgDcg | -9.58  |
| 982 | dDdGag | -8.39  |
| 985 | DcUdDg | -8.16  |
| 986 | GdCUdg | -8.73  |
| 987 | dGdCug | -8.64  |
| 988 | GdGdCg | -9.84  |
| 989 | uGdGdg | -10.09 |
| 990 | dUgDgg | -9.90  |
| 992 | uDdUgg | -7.73  |

|     |        |        |
|-----|--------|--------|
| 222 | cUgUug | -7.39  |
| 223 | GcUgUg | -10.34 |
| 224 | uGcUgg | -10.28 |
| 225 | dUgCug | -12.05 |
| 226 | UdUgCg | -9.03  |
| 235 | cUcUdg | -9.28  |
| 236 | uCuCug | -7.68  |
| 237 | CUcUcg | -9.08  |
| 238 | uCuCug | -7.68  |
| 239 | uUcUcg | -8.12  |
| 242 | cCdUug | -7.39  |
| 243 | DcCdUg | -9.20  |
| 244 | uAcCdG | -8.78  |
| 245 | GUdCcg | -9.14  |
| 246 | DgUdCg | -8.97  |
| 247 | GdGUdg | -9.20  |
| 248 | DgDgUg | -10.26 |
| 249 | GdGdGg | -10.29 |
| 250 | dGdGdg | -12.84 |
| 251 | CdGdGg | -9.86  |
| 252 | GCdGdg | -12.57 |
| 253 | UgCdGg | -10.04 |
| 254 | dUgCdG | -12.29 |
| 255 | DdUgCg | -9.25  |
| 256 | dDdUgg | -7.95  |
| 257 | CdDdUg | -9.25  |
| 258 | uCdDdg | -7.89  |
| 259 | dUcDdg | -8.62  |
| 260 | CdUcDg | -8.69  |
| 261 | uCdUcg | -8.49  |
| 267 | cUuCug | -7.01  |
| 268 | cCuUcg | -9.02  |
| 269 | uCcUug | -7.69  |
| 270 | uUcCug | -7.69  |
| 271 | gUuCcg | -9.04  |
| 272 | uGuUcg | -7.90  |
| 273 | cUgUug | -7.39  |
| 274 | UcUgUg | -8.97  |
| 275 | dUcUgg | -9.23  |
| 277 | gUdUcg | -8.62  |
| 278 | GgUdUg | -9.14  |
| 279 | AgGuAg | -8.42  |
| 280 | CdGgUg | -10.15 |
| 281 | CCdGg  | -9.20  |
| 282 | UcCdGg | -12.39 |
| 283 | uUcCdG | -11.01 |

|      |        |        |
|------|--------|--------|
| 994  | uCuDdg | -8.05  |
| 995  | gUcUdG | -10.20 |
| 996  | GgUcUg | -10.15 |
| 997  | UgGuCg | -9.63  |
| 998  | uUgGug | -7.81  |
| 1003 | CUcDug | -7.39  |
| 1004 | uCuCdG | -8.87  |
| 1005 | uUcUcg | -8.12  |
| 1007 | GdUUcg | -7.72  |
| 1008 | gGdUug | -7.86  |
| 1009 | UgGdUg | -9.50  |
| 1010 | CUgGdg | -10.37 |
| 1011 | GcUgG  | -9.78  |
| 1012 | uGcUgg | -13.21 |
| 1013 | gUgCug | -12.51 |
| 1014 | uGuGcg | -10.00 |
| 1015 | dUgUgg | -9.31  |
| 1021 | DcUcUg | -9.12  |
| 1022 | GdCuCg | -9.11  |
| 1023 | uGdCug | -8.02  |
| 1024 | uUgDcg | -8.40  |
| 1029 | DcUdDg | -8.16  |
| 1030 | cDcUdg | -9.07  |
| 1031 | dCdCug | -7.76  |
| 1032 | CdCdCg | -8.53  |
| 1033 | CCdCDg | -8.16  |
| 1034 | UcCdCg | -9.36  |
| 1035 | dUcCdG | -9.93  |
| 1036 | CdUcCg | -9.51  |
| 1037 | CCdUcg | -9.16  |
| 1038 | GcCDUg | -9.00  |
| 1039 | uGcCa  | -9.09  |
| 1040 | AuGcCg | -9.34  |
| 1041 | CdUgCg | -9.74  |
| 1042 | GCdUgg | -9.39  |
| 1043 | GgCdUg | -12.32 |
| 1044 | uGgCa  | -9.13  |
| 1045 | GUgGc  | -9.45  |
| 1046 | DgUgGg | -10.61 |
| 1047 | GdGUgg | -12.52 |
| 1048 | DgDgUg | -12.20 |
| 1049 | CdGdGg | -9.86  |
| 1050 | GCdGdg | -12.57 |
| 1051 | UgCdGg | -10.04 |
| 1052 | CuGcDg | -12.14 |
| 1053 | GcUgCg | -11.41 |

|     |        |        |
|-----|--------|--------|
| 284 | cUuCcg | -9.02  |
| 285 | uCuUcg | -7.82  |
| 288 | uGuUcg | -7.90  |
| 290 | GgUgUg | -10.23 |
| 291 | GgGUGg | -9.59  |
| 292 | GgGgU  | -10.31 |
| 293 | UGgGg  | -9.72  |
| 294 | CUgGg  | -9.30  |
| 295 | DcUgGg | -12.72 |
| 296 | CdCuGg | -11.32 |
| 297 | GCdCug | -11.45 |
| 298 | CgCdCg | -10.27 |
| 299 | CcGcA  | -9.59  |
| 300 | CCcGC  | -9.22  |
| 301 | uCcCg  | -9.61  |
| 302 | UUcCcg | -11.60 |
| 303 | uUuCcg | -7.53  |
| 306 | uCcUug | -7.69  |
| 307 | GUcCug | -8.67  |
| 308 | gGuCc  | -9.45  |
| 309 | GgGuC  | -9.31  |
| 310 | CgGgU  | -9.81  |
| 311 | uCgGg  | -9.69  |
| 312 | uUcGgg | -12.21 |
| 313 | cUuCgg | -11.49 |
| 314 | uCuUcg | -10.25 |
| 316 | cUuCug | -7.01  |
| 317 | uCuUcg | -7.82  |
| 319 | DgUcUg | -9.59  |
| 320 | CdGuCg | -9.15  |
| 321 | CCdGug | -8.67  |
| 322 | UcCdGg | -9.81  |
| 323 | CUcCdg | -11.97 |
| 324 | CcUcC  | -9.51  |
| 325 | dCcUcg | -10.22 |
| 326 | GDcCUg | -8.73  |
| 327 | GGdCc  | -9.18  |
| 328 | UgGdCg | -9.89  |
| 329 | uUgGdg | -9.41  |
| 330 | dUuGgg | -8.68  |
| 335 | GdUdDg | -8.06  |
| 336 | cGdUdg | -9.33  |
| 337 | CcGdUg | -10.14 |
| 338 | UcCgDg | -10.54 |
| 339 | CuCcGg | -10.25 |
| 340 | CcUcC  | -9.51  |

|      |        |        |
|------|--------|--------|
| 1054 | uGcUgg | -10.28 |
| 1055 | dUgCug | -12.05 |
| 1056 | DdUgCg | -9.25  |
| 1057 | dDdUgg | -7.95  |
| 1058 | CdDdUg | -9.25  |
| 1059 | uCdDdg | -7.89  |
| 1060 | cUcDdg | -9.06  |
| 1061 | CcUcDg | -10.19 |
| 1062 | uCcUcg | -9.99  |
| 1063 | GUcCug | -8.67  |
| 1064 | gGuCc  | -9.45  |
| 1065 | AgGuCg | -9.44  |
| 1066 | dDgGug | -8.99  |
| 1067 | uDdGgg | -9.21  |
| 1068 | CuDdGg | -10.89 |
| 1069 | uCuDdg | -10.18 |
| 1070 | cUcUdg | -9.28  |
| 1071 | DcUcUg | -9.12  |
| 1072 | GdCuCg | -9.11  |
| 1073 | dGdCug | -8.64  |
| 1074 | GdGdCg | -9.84  |
| 1075 | uGdGdg | -10.09 |
| 1076 | uUgDgg | -8.85  |
| 1077 | cUuGdg | -10.82 |
| 1079 | dDcUug | -9.69  |
| 1080 | dDdCug | -6.93  |
| 1081 | GdDdCg | -8.13  |
| 1082 | uGdDdg | -8.38  |
| 1083 | dUgDdg | -9.11  |
| 1084 | GdUGdg | -9.26  |
| 1085 | uGdUgg | -9.04  |
| 1086 | CuGdUg | -10.72 |
| 1087 | uCuGdg | -9.36  |
| 1088 | CUcUgg | -9.14  |
| 1089 | CcUcUg | -12.03 |
| 1090 | CcCuC  | -9.21  |
| 1091 | UcCcUg | -10.47 |
| 1092 | GUcCc  | -9.18  |
| 1093 | uGuCcg | -9.77  |
| 1094 | uUgUcg | -8.20  |
| 1098 | DcUcUg | -9.12  |
| 1099 | CdCuCg | -8.68  |
| 1100 | CCdCug | -8.20  |
| 1101 | DcCdCg | -9.59  |
| 1102 | GDcCAg | -8.44  |
| 1103 | GGdCc  | -9.18  |

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|-----|--------|--------|
| 341 | uCcUcg | -9.99  |
| 342 | CuCcUg | -9.79  |
| 343 | UcUcCg | -9.81  |
| 344 | CUcUcg | -9.08  |
| 345 | uCuCug | -7.68  |
| 346 | gUcUcG | -10.83 |
| 347 | CgUcUg | -9.65  |
| 348 | CcGuCg | -10.27 |
| 349 | cCcGU  | -8.68  |
| 350 | uCcCg  | -9.61  |
| 351 | UUcCcg | -11.60 |
| 352 | uUuCcg | -7.53  |
| 355 | cCdUug | -7.39  |
| 356 | CcCdUg | -10.17 |
| 357 | AcCcAg | -9.89  |
| 358 | CdCcC  | -9.06  |
| 359 | UcDcC  | -8.10  |
| 360 | CUcDcg | -8.87  |
| 361 | uCuCdg | -8.87  |
| 362 | CUcUcg | -9.08  |
| 363 | uCuCug | -7.68  |
| 364 | CUcUcg | -9.08  |
| 365 | GcUcUg | -10.26 |
| 366 | DGcUcg | -10.31 |
| 367 | UdGcUg | -9.55  |
| 368 | uUdGcg | -8.78  |
| 372 | DgDdUg | -8.77  |
| 373 | CdGdDg | -9.07  |
| 374 | dCdGdg | -9.83  |
| 375 | UdCdGg | -8.27  |
| 376 | gUdCdg | -10.98 |
| 377 | CgUdCg | -9.03  |
| 378 | uCgUdg | -9.22  |
| 379 | gUcGuG | -10.61 |
| 380 | uGuCgg | -9.31  |
| 381 | uUgUcg | -10.63 |
| 386 | CcUcUg | -10.09 |
| 387 | uCcUcg | -9.99  |
| 388 | CuCcUg | -9.79  |
| 389 | UcUcCg | -9.81  |
| 390 | dUcUcg | -9.17  |
| 391 | GdUcUg | -9.02  |
| 392 | uGdUcg | -8.98  |
| 393 | CuGdUg | -8.78  |
| 394 | CcUgDg | -10.68 |
| 395 | uCcUgg | -10.05 |

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|------|--------|--------|
| 1104 | GGgDc  | -9.46  |
| 1105 | UgGgAg | -10.53 |
| 1106 | UUgGgg | -9.31  |
| 1107 | cUuGgg | -12.05 |
| 1110 | CcUcUg | -10.09 |
| 1111 | uCcUcg | -9.99  |
| 1112 | GUcCug | -8.67  |
| 1113 | uGuCcg | -9.77  |
| 1114 | cUgUcg | -9.69  |
| 1115 | GcUgUg | -10.34 |
| 1116 | DGcUgg | -10.37 |
| 1117 | UdGcUg | -11.49 |
| 1118 | dUdGcg | -9.83  |
| 1119 | GdUdGg | -8.85  |
| 1120 | gGdUdg | -11.96 |
| 1121 | UgGdUg | -9.50  |
| 1122 | GUgGdg | -10.39 |
| 1123 | gGuGg  | -9.55  |
| 1124 | UgGuGg | -12.27 |
| 1125 | cUgGug | -12.38 |
| 1126 | UcUgGg | -9.91  |
| 1127 | CUcUgg | -12.07 |
| 1128 | CcUcUg | -12.03 |
| 1129 | CcCuC  | -9.21  |
| 1130 | CcCcU  | -10.17 |
| 1131 | AcCcC  | -9.60  |
| 1132 | dDcCc  | -8.99  |
| 1133 | GdAcCg | -9.21  |
| 1134 | uGdDcg | -8.72  |
| 1140 | GcDdUg | -9.03  |
| 1141 | DgCdDg | -9.87  |
| 1142 | dDgCdg | -10.29 |
| 1143 | GdAgCg | -9.54  |
| 1144 | uGdDgg | -9.17  |
| 1150 | CUcDug | -7.39  |
| 1151 | uCuCdg | -8.87  |
| 1152 | uUcUcg | -8.12  |
| 1154 | uGuUcg | -7.90  |
| 1156 | CdUgUg | -8.67  |
| 1157 | CCdUgg | -9.22  |
| 1158 | UcCdUg | -10.91 |
| 1159 | CUcCdg | -9.84  |
| 1160 | CcUcC  | -9.51  |
| 1161 | GCcUc  | -9.33  |
| 1162 | UGcCug | -9.26  |
| 1163 | uUgCcg | -9.93  |



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|-----|--------|--------|
| 396 | CuCcUg | -11.73 |
| 397 | CcUcC  | -9.51  |
| 398 | uCcUcg | -9.99  |
| 399 | dUcCug | -8.74  |
| 400 | DdUcCg | -9.02  |
| 401 | dDdUcg | -7.89  |
| 402 | CdDdUg | -7.31  |
| 403 | CcDdDg | -8.91  |
| 404 | GcCdAg | -9.90  |
| 405 | CGcCa  | -9.24  |
| 406 | AcGcC  | -9.31  |
| 407 | GDCcGc | -9.09  |
| 408 | UgDcGg | -9.63  |
| 409 | uUgDcg | -10.83 |
| 410 | cUuGdg | -8.69  |
| 411 | gCuUgg | -9.25  |
| 412 | cGcUug | -11.68 |
| 413 | UcGcUg | -10.18 |
| 414 | uUcGcg | -9.41  |
| 415 | gUuCgg | -8.58  |
| 416 | uGuUcg | -10.33 |
| 420 | cCdUug | -10.47 |
| 421 | UcCdUg | -8.97  |
| 422 | CUcCdg | -9.84  |
| 423 | UcUcCg | -9.81  |
| 424 | CUcUcg | -9.08  |
| 425 | CcUcUg | -10.09 |
| 426 | uCcUcg | -9.99  |
| 427 | GUcCug | -8.67  |
| 428 | CgUcCg | -10.57 |
| 429 | GcGuC  | -8.94  |
| 430 | uGcGug | -9.35  |
| 431 | uUgCgg | -9.47  |
| 432 | gUuGcg | -11.70 |
| 433 | dGuUgg | -8.58  |
| 435 | GCdGug | -8.84  |
| 436 | AgCdGg | -9.85  |
| 437 | CdGcAg | -11.72 |
| 438 | CCdGc  | -9.33  |
| 439 | DcCdGg | -10.04 |
| 440 | GDCcAg | -10.19 |
| 441 | AgDcC  | -8.40  |
| 442 | dDgDcg | -9.58  |
| 443 | uDdGdg | -8.78  |
| 444 | GuDdGg | -8.33  |
| 445 | GgUdDg | -11.21 |

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|------|--------|--------|
| 1164 | dUuGcg | -8.81  |
| 1166 | cCdUug | -10.47 |
| 1167 | UcCdUg | -8.97  |
| 1168 | GUcCDg | -8.63  |
| 1169 | AgUcCg | -9.70  |
| 1170 | GdGUcg | -9.53  |
| 1171 | GgDgUg | -10.82 |
| 1172 | UgGdGg | -10.34 |
| 1173 | uUgGdg | -11.54 |
| 1174 | gUuGgg | -9.14  |
| 1175 | uGuUgg | -10.89 |
| 1177 | DgUgUg | -9.67  |
| 1178 | GdGUgg | -9.59  |
| 1179 | DgDgUg | -12.20 |
| 1180 | dDgDgg | -10.03 |
| 1181 | cDdGdg | -11.62 |
| 1182 | uCdDgg | -8.68  |
| 1184 | gUuCdg | -8.22  |
| 1185 | dGuUcg | -8.52  |
| 1187 | uCdGug | -8.00  |
| 1188 | CUcDgg | -9.32  |
| 1189 | uCuCdg | -11.00 |
| 1190 | uUcUcg | -8.12  |
| 1191 | cUuCug | -7.01  |
| 1192 | gCuUcg | -9.19  |
| 1193 | uGcUug | -7.92  |
| 1194 | cUgCug | -9.41  |
| 1195 | UcUgCg | -10.04 |
| 1196 | dUcUgg | -9.23  |
| 1198 | dUdUcg | -8.16  |
| 1200 | cDdUdg | -8.05  |
| 1201 | CcDdUg | -8.86  |
| 1202 | CcCdA  | -8.23  |
| 1203 | GCcCA  | -8.47  |
| 1204 | AgCcC  | -9.93  |
| 1205 | UdGcC  | -8.97  |
| 1206 | dUdGcg | -9.83  |
| 1213 | gGuUcg | -9.08  |
| 1214 | UgGuUg | -8.42  |
| 1215 | cUgGug | -9.30  |
| 1216 | UcUgGg | -9.91  |
| 1217 | uUcUgg | -11.11 |
| 1218 | cUuCug | -10.09 |
| 1219 | gCuUcg | -9.19  |
| 1220 | cGcUug | -8.60  |
| 1221 | CcGcU  | -9.88  |

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|-----|--------|--------|
| 446 | GgGuAg | -9.79  |
| 447 | UgGgUg | -10.63 |
| 448 | gUgGg  | -9.85  |
| 449 | gGuGg  | -9.55  |
| 450 | AgGuGg | -12.08 |
| 451 | CdGgUg | -12.09 |
| 452 | UCdGgg | -9.50  |
| 453 | dUcDgg | -12.34 |
| 454 | CdUcDg | -10.71 |
| 455 | uCdUcg | -8.49  |
| 457 | UdUcDg | -7.98  |
| 458 | dUdUcg | -8.16  |
| 460 | cCdUdg | -9.36  |
| 461 | GcCDUg | -9.00  |
| 462 | uGcCa  | -9.09  |
| 463 | AuGcCg | -9.34  |
| 464 | DdUgCg | -9.25  |
| 465 | GDdUgg | -8.34  |
| 466 | GgDdUg | -11.27 |
| 467 | uGgDdg | -9.97  |
| 468 | uUgGdg | -9.41  |
| 469 | dUuGgg | -8.68  |
| 470 | GdUUgg | -10.71 |
| 471 | dGdUug | -10.38 |
| 479 | CdUcDg | -8.69  |
| 480 | GCdUcg | -9.33  |
| 481 | GgCdUg | -10.38 |
| 482 | uGgCa  | -9.13  |
| 483 | GUgGc  | -9.45  |
| 484 | uGuGgg | -9.87  |
| 485 | dUgUgg | -12.24 |
| 487 | dUdUgg | -8.22  |
| 489 | uGdUdg | -8.65  |
| 490 | CuGdUg | -8.78  |
| 491 | uCuGdg | -9.36  |
| 492 | CUcUgg | -9.14  |
| 493 | uCuCug | -10.76 |
| 494 | uUcUcg | -8.12  |
| 496 | cGuUcg | -8.58  |
| 498 | CuCgUg | -9.35  |
| 499 | UcUcGg | -9.35  |
| 500 | CUcUcg | -11.51 |
| 501 | GcUcUg | -10.26 |
| 502 | DGcUcg | -10.31 |
| 503 | GdGcUg | -10.69 |
| 504 | dGdGCg | -10.04 |

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|------|---------|--------|
| 1222 | UcCgC   | -9.60  |
| 1223 | CuCcGg  | -10.25 |
| 1224 | CcUcC   | -9.51  |
| 1225 | uCcUcg  | -9.99  |
| 1226 | uUcCug  | -7.69  |
| 1227 | uUuCcgg | -7.53  |
| 1231 | GgUgUg  | -10.23 |
| 1232 | UgGuGg  | -9.69  |
| 1233 | uUgGug  | -10.89 |
| 1234 | gUuGgg  | -9.14  |
| 1235 | gGuUgg  | -12.07 |
| 1236 | UgGuUg  | -10.36 |
| 1237 | cUgGug  | -9.30  |
| 1238 | GcUgG   | -9.78  |
| 1239 | uGcUgg  | -13.21 |
| 1240 | cUgCug  | -12.49 |
| 1241 | UcUgCg  | -10.04 |
| 1242 | CUcUgg  | -9.14  |
| 1243 | CcUcUg  | -12.03 |
| 1244 | CcCuC   | -9.21  |
| 1245 | GcCcU   | -10.34 |
| 1246 | UGcCc   | -9.77  |
| 1247 | AuGcCg  | -9.34  |
| 1248 | GdUGcg  | -9.82  |
| 1249 | dGdUgg  | -9.66  |
| 1250 | CdGdUg  | -10.96 |
| 1251 | GCdGdg  | -10.44 |
| 1252 | UgCdGg  | -10.04 |
| 1253 | CuGcDg  | -12.14 |
| 1254 | CcUgC   | -9.74  |
| 1255 | uCcUgg  | -10.05 |
| 1256 | GUcCug  | -11.75 |
| 1257 | uGuCcg  | -9.77  |
| 1258 | cUgUcg  | -9.69  |
| 1259 | UcUgUg  | -8.97  |
| 1260 | dUcUgg  | -9.23  |
| 1261 | GdUcUg  | -10.96 |
| 1262 | uGdUcg  | -8.98  |
| 1263 | CuGdUg  | -8.78  |
| 1264 | GcUgDg  | -10.85 |
| 1265 | CgCuGg  | -10.48 |
| 1266 | DcGcUg  | -12.35 |
| 1267 | DdCGcg  | -9.43  |
| 1268 | GdDcGg  | -9.22  |
| 1269 | uGdDcg  | -11.15 |
| 1271 | GcUgDg  | -10.85 |

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|-----|--------|--------|
| 505 | GdGdGg | -10.29 |
| 506 | CGdGdg | -12.37 |
| 507 | DcGdGg | -10.01 |
| 508 | CdCgDg | -11.73 |
| 509 | GCdCg  | -8.42  |
| 510 | CgCdCg | -12.35 |
| 511 | dCgCdg | -10.69 |
| 512 | UdCgCg | -9.56  |
| 513 | GUdCgg | -8.68  |
| 514 | DgUdCg | -11.05 |
| 515 | CdGuDg | -8.82  |
| 516 | CCdGug | -8.67  |
| 517 | UcCdGg | -9.81  |
| 518 | uUcCdg | -11.01 |
| 519 | dUuCc  | -8.58  |
| 521 | cCdUug | -7.39  |
| 522 | UcCdUg | -8.97  |
| 523 | GUcCDg | -8.63  |
| 524 | gGuCc  | -9.45  |
| 525 | GgGuC  | -9.31  |
| 526 | UgGgUg | -10.63 |
| 527 | UUgGgg | -9.31  |
| 528 | cUuGgg | -12.05 |
| 529 | cCuUgg | -12.01 |
| 530 | uCcUug | -10.77 |
| 531 | dUcCug | -8.74  |
| 532 | CdUcCg | -9.51  |
| 533 | dCdUcg | -8.72  |
| 534 | CdCdUg | -8.14  |
| 535 | GCdCDg | -8.33  |
| 536 | AgCdCg | -9.40  |
| 537 | GdGCdg | -10.44 |
| 538 | dGdGCg | -10.04 |
| 539 | GdGdGg | -10.29 |
| 540 | dGdGdg | -12.84 |
| 541 | CdGdGg | -9.86  |
| 542 | uCdGdg | -11.73 |
| 543 | dUcDgg | -9.41  |
| 544 | CdUcDg | -10.71 |
| 545 | GCdUcg | -9.33  |
| 546 | UgCdUg | -9.20  |
| 547 | uUgCdg | -9.11  |
| 548 | cUuGcg | -9.25  |
| 549 | cCuUgg | -9.08  |
| 550 | CcCuUg | -11.44 |
| 551 | AcCcUg | -10.18 |

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|------|--------|--------|
| 1272 | GGcUg  | -9.43  |
| 1273 | GgGcU  | -10.42 |
| 1274 | UGgGc  | -9.85  |
| 1275 | gUgGg  | -9.85  |
| 1276 | DgUgGg | -13.19 |
| 1277 | dDgUgg | -12.37 |
| 1278 | dDdGug | -10.48 |
| 1279 | GdDdGg | -8.58  |
| 1280 | dGdDdg | -11.13 |
| 1281 | GdGdDg | -9.50  |
| 1282 | CGdGdg | -10.24 |
| 1283 | CcGdG  | -9.48  |
| 1284 | ACcGdg | -12.03 |
| 1285 | GDcCg  | -8.92  |
| 1286 | GGdCc  | -9.18  |
| 1287 | UgGdCg | -9.89  |
| 1288 | CUgGdg | -10.37 |
| 1289 | UcUgGg | -9.91  |
| 1290 | CUcUgg | -12.07 |
| 1291 | uCuCug | -10.76 |
| 1292 | uUcUcg | -8.12  |
| 1296 | dGgUug | -8.43  |
| 1297 | dDgGug | -8.99  |
| 1298 | GdAgGg | -9.41  |
| 1299 | GgDdGg | -12.75 |
| 1300 | GgGdAg | -11.99 |
| 1301 | AgGgAg | -10.34 |
| 1302 | dDgGg  | -9.52  |
| 1303 | GdAgGg | -11.99 |
| 1304 | CGdDgg | -12.25 |
| 1305 | UcGdAg | -10.25 |
| 1306 | uUcGdg | -8.85  |
| 1311 | GcUcUg | -10.26 |
| 1312 | CgCuCg | -10.42 |
| 1313 | UcGcUg | -10.18 |
| 1314 | gUcGc  | -9.42  |
| 1315 | GgUcGg | -10.61 |
| 1316 | UgGuCg | -11.71 |
| 1317 | dUgGug | -8.86  |
| 1318 | DdUgGg | -9.12  |
| 1319 | uDdUgg | -10.66 |
| 1321 | CdUdDg | -7.63  |
| 1322 | cCdUdg | -9.36  |
| 1323 | GcCDUg | -9.00  |
| 1324 | uGcCa  | -9.09  |
| 1325 | CUGcCg | -9.66  |

|     |        |        |
|-----|--------|--------|
| 552 | GAcCc  | -8.79  |
| 553 | UgAcCg | -9.50  |
| 554 | uUgDcg | -8.40  |
| 555 | gUuGdg | -8.71  |
| 556 | dGuUgg | -8.58  |
| 558 | DgDgUg | -10.26 |
| 559 | GdGdGg | -10.29 |
| 560 | GgDgAg | -12.47 |
| 561 | GGgDg  | -9.91  |
| 562 | CgGgA  | -9.71  |
| 563 | uCgGg  | -9.69  |
| 564 | CuCgGg | -12.87 |
| 565 | CcUcGg | -13.13 |
| 566 | uCcUcg | -12.42 |
| 567 | CuCcUg | -9.79  |
| 568 | UcUcCg | -9.81  |
| 569 | dUcUcg | -9.17  |
| 570 | GdUcUg | -9.02  |
| 571 | dGdUcg | -9.60  |
| 572 | CdGdUg | -9.02  |
| 573 | CCdGdg | -10.27 |
| 574 | UcCdGg | -9.81  |
| 575 | CUcCdg | -11.97 |
| 576 | gCuCc  | -9.56  |
| 577 | DGcUcg | -10.31 |
| 578 | CdGcUg | -10.26 |
| 579 | GCdGc  | -9.50  |
| 580 | GGCdGg | -9.64  |
| 581 | CgGcA  | -9.63  |
| 582 | CCgGC  | -9.26  |
| 583 | ACcGg  | -8.83  |
| 584 | cDcCg  | -9.02  |
| 585 | GCdCc  | -8.88  |
| 586 | UgCdCg | -9.59  |
| 587 | CuGcDg | -10.12 |
| 588 | GcUgCg | -11.41 |
| 589 | uGcUgg | -10.28 |
| 590 | cUgCug | -12.49 |
| 591 | DcUgCg | -10.27 |
| 592 | UdCUgg | -7.98  |
| 597 | CcCuUg | -9.50  |
| 598 | CcCcU  | -10.17 |
| 599 | CCCcC  | -9.51  |
| 600 | AcCcC  | -9.60  |
| 601 | UdCcCg | -9.85  |
| 602 | CUdCcg | -9.12  |

|      |        |        |
|------|--------|--------|
| 1326 | GcUgCg | -11.41 |
| 1327 | uGcUgg | -10.28 |
| 1328 | dUgCug | -12.05 |
| 1329 | DdUgCg | -9.25  |
| 1330 | dDdUgg | -7.95  |
| 1332 | gUdDdg | -8.02  |
| 1334 | cUgUdg | -9.36  |
| 1335 | CcUgUg | -10.17 |
| 1336 | uCcUgg | -10.05 |
| 1337 | uUcCug | -10.77 |
| 1338 | uUuCc  | -7.53  |
| 1342 | DgUdUg | -8.58  |
| 1343 | CdGuDg | -8.82  |
| 1344 | uCdGug | -8.00  |
| 1345 | CUcDgg | -9.32  |
| 1346 | CcUcDg | -12.21 |
| 1347 | CcCuC  | -9.21  |
| 1348 | GcCcU  | -10.34 |
| 1349 | UGcCc  | -9.77  |
| 1350 | CUGcCg | -9.66  |
| 1351 | UcUgCg | -10.04 |
| 1352 | uUcUgg | -8.18  |
| 1354 | cGuUcg | -8.58  |
| 1355 | dCgUug | -7.48  |
| 1356 | GdCgUg | -9.63  |
| 1357 | dGdCg  | -8.69  |
| 1358 | CdGdCg | -11.49 |
| 1359 | uCdGdg | -9.60  |
| 1360 | GUcDgg | -9.34  |
| 1361 | uGuCdg | -11.08 |
| 1362 | dUgUcg | -9.25  |
| 1363 | CdUgUg | -8.67  |
| 1364 | uCdUgg | -8.55  |
| 1365 | CUcDug | -10.47 |
| 1366 | CcUcDg | -10.19 |
| 1367 | uCcUcg | -9.99  |
| 1368 | GUcCug | -8.67  |
| 1369 | AgUcCg | -9.70  |
| 1370 | CdGuCg | -9.15  |
| 1371 | uCdGug | -8.00  |
| 1372 | uUcDgg | -8.36  |
| 1378 | UdUgDg | -8.47  |
| 1387 | CdUcDg | -8.69  |
| 1388 | CCdUcg | -9.16  |
| 1389 | UcCdUg | -8.97  |
| 1390 | uUcCdg | -8.88  |

|     |        |        |
|-----|--------|--------|
| 603 | CcUdCg | -9.47  |
| 604 | CcCuAg | -9.69  |
| 605 | UcCcUg | -10.47 |
| 606 | GUcCc  | -9.18  |
| 607 | uGuCcg | -9.77  |
| 608 | uUgUcg | -8.20  |
| 611 | cCdUug | -10.47 |
| 612 | DcCdUg | -9.20  |
| 613 | CdCcAg | -9.35  |
| 614 | UcDcC  | -8.10  |
| 615 | dUcDcg | -8.96  |
| 616 | CdUcDg | -8.69  |
| 617 | CCdUcg | -9.16  |
| 618 | UcCdUg | -8.97  |
| 619 | CUcCdg | -9.84  |
| 620 | gCuCc  | -9.56  |
| 621 | DGcUcg | -10.31 |
| 622 | CdGcUg | -10.26 |
| 623 | UCdGcg | -9.63  |
| 624 | dUcDgg | -9.41  |
| 625 | DdUcDg | -10.22 |
| 626 | GDdUcg | -8.28  |
| 627 | cGdDug | -7.92  |
| 628 | CcGdAg | -9.70  |
| 629 | UcCgDg | -10.54 |
| 630 | AuCcGg | -8.65  |
| 631 | CdUcCg | -11.59 |
| 632 | uCdUcg | -8.49  |
| 634 | UdUcDg | -7.98  |
| 641 | CuCgUg | -9.35  |
| 642 | CcUcGg | -10.55 |
| 643 | CcCuC  | -9.21  |
| 644 | UcCcUg | -10.47 |
| 645 | AuCcCg | -9.11  |
| 646 | GDUcCg | -8.60  |
| 647 | uGdUcg | -8.98  |
| 649 | gUuGdg | -8.71  |
| 650 | cGuUgg | -8.64  |
| 652 | gUcGuG | -10.61 |
| 653 | GgUcGg | -10.61 |
| 654 | CgGuC  | -8.81  |
| 655 | CcGgU  | -9.77  |
| 656 | UCcGg  | -9.12  |
| 657 | uUcCgg | -12.17 |
| 658 | dUuCcg | -11.01 |
| 662 | dGdDdg | -9.00  |

|      |        |        |
|------|--------|--------|
| 1391 | uUuCcg | -7.53  |
| 1395 | GCdCug | -8.37  |
| 1396 | GGCdCg | -9.19  |
| 1397 | uGgCa  | -9.13  |
| 1398 | CUgGc  | -9.43  |
| 1399 | UcUgGg | -9.91  |
| 1400 | gUcUgg | -12.62 |
| 1401 | GgUcUg | -12.09 |
| 1402 | UgGuCg | -9.63  |
| 1403 | cUgGug | -9.30  |
| 1404 | UcUgGg | -9.91  |
| 1405 | uUcUgg | -11.11 |
| 1406 | cUuCug | -10.09 |
| 1407 | uCuUcg | -7.82  |
| 1409 | CdUcUg | -8.59  |
| 1410 | dCdUcg | -8.72  |
| 1411 | CdCdUg | -8.14  |
| 1412 | dCdCDg | -7.72  |
| 1413 | GdCdCg | -8.96  |
| 1414 | uGdCdg | -9.21  |
| 1415 | dUgDcg | -9.45  |
| 1417 | GDdUgg | -8.34  |
| 1418 | GgDdUg | -11.27 |
| 1419 | uGgDdg | -9.97  |
| 1420 | CUgGdg | -10.37 |
| 1421 | CcUgG  | -9.61  |
| 1422 | CCcUg  | -9.22  |
| 1423 | CcCcU  | -10.17 |
| 1424 | GCCCCc | -9.33  |
| 1425 | CGcCC  | -9.22  |
| 1426 | CcGCC  | -9.22  |
| 1427 | CCcGC  | -9.22  |
| 1428 | CCcCG  | -9.05  |
| 1429 | UCcCc  | -9.54  |
| 1430 | CUcCc  | -9.16  |
| 1431 | DcUcCg | -10.04 |
| 1432 | GdCuCg | -9.11  |
| 1433 | dGdCug | -8.64  |
| 1434 | dDgDcg | -9.58  |
| 1435 | GdDgDg | -9.74  |
| 1436 | CGdDgg | -9.32  |
| 1437 | UcGdAg | -10.25 |
| 1438 | CuCgDg | -9.86  |
| 1439 | gCuCg  | -9.10  |
| 1440 | DGcUcg | -12.74 |
| 1441 | GdGcUg | -10.69 |

|     |        |        |
|-----|--------|--------|
| 663 | CdGdDg | -9.07  |
| 664 | CCdGdg | -10.27 |
| 665 | UcCdGg | -9.81  |
| 666 | CUcCdg | -11.97 |
| 667 | UcUcCg | -9.81  |
| 668 | CUcUcg | -9.08  |
| 669 | CcUcUg | -10.09 |
| 670 | GcCuc  | -9.33  |
| 671 | cGcCU  | -8.83  |
| 672 | UcGcC  | -9.60  |
| 673 | uUcGcg | -9.41  |
| 678 | cCdUug | -7.39  |
| 679 | UcCdUg | -8.97  |
| 680 | uUcCdg | -8.88  |
| 681 | cUuCcg | -9.02  |
| 682 | uCuUcg | -7.82  |
| 684 | cUuCug | -7.01  |
| 685 | uCuUcg | -7.82  |
| 688 | uGuUcg | -7.90  |
| 691 | cCuUgg | -9.08  |
| 692 | uCcUug | -10.77 |
| 693 | dUcCug | -8.74  |
| 694 | DdUcCg | -9.02  |
| 695 | cDdUcg | -8.38  |
| 696 | GcDdUg | -9.03  |
| 697 | uGcDdg | -9.67  |
| 698 | dUgCdg | -10.16 |
| 699 | UdUgCg | -9.03  |
| 700 | dUdUgg | -8.22  |
| 702 | uCdUdg | -8.16  |
| 703 | CUcDug | -7.39  |
| 704 | uCuCdg | -8.87  |
| 705 | CUcUcg | -9.08  |
| 706 | uCuCug | -7.68  |
| 707 | uUcUcg | -8.12  |
| 711 | CdCdUg | -8.14  |
| 712 | GCdCDg | -8.33  |
| 713 | UgCdCg | -9.59  |
| 714 | uUgCdg | -9.11  |
| 715 | gUuGcg | -9.27  |
| 716 | uGuUgg | -7.96  |
| 718 | GdUgUg | -9.10  |
| 719 | GGdUgg | -9.69  |
| 720 | DgGdUg | -12.06 |
| 721 | GDgGa  | -8.87  |
| 722 | UGdGgg | -9.99  |

|      |        |        |
|------|--------|--------|
| 1442 | dGdGCg | -10.04 |
| 1443 | GdGdGg | -10.29 |
| 1444 | CGdGdg | -12.37 |
| 1445 | CcGdG  | -9.48  |
| 1446 | UcCgDg | -12.56 |
| 1447 | gUcCg  | -9.25  |
| 1448 | CgUcCg | -12.65 |
| 1449 | uCgUcg | -9.55  |
| 1450 | uUcGug | -7.25  |
| 1455 | GcCug  | -8.53  |
| 1456 | UGcCug | -9.26  |
| 1457 | uUgCcg | -9.93  |
| 1458 | gUuGcg | -9.27  |
| 1459 | cGuUgg | -8.64  |
| 1461 | uUcGug | -7.25  |
| 1462 | gUuCgg | -8.58  |
| 1463 | gGuUcg | -11.51 |
| 1464 | GgGuUg | -9.60  |
| 1465 | CgGgU  | -9.81  |
| 1466 | uCgGg  | -9.69  |
| 1467 | DuCgGg | -12.43 |
| 1468 | GdUcGg | -12.06 |
| 1469 | cGdUcg | -12.09 |
| 1470 | DcGdUg | -9.17  |
| 1471 | CdCgDg | -9.71  |
| 1472 | GCdCg  | -8.42  |
| 1473 | GGCdCg | -11.27 |
| 1474 | AgGcAg | -10.26 |
| 1475 | dDgGc  | -9.65  |
| 1476 | GdAgGg | -9.41  |
| 1477 | GgDdGg | -12.75 |
| 1478 | DgGdDg | -12.19 |
| 1479 | dDgGdg | -10.59 |
| 1480 | dDdGgg | -9.43  |
| 1481 | CdDdGg | -10.73 |
| 1482 | uCdDdg | -10.02 |
| 1483 | gUcDdg | -9.08  |
| 1484 | uGuCdg | -8.95  |
| 1485 | dUgUcg | -9.25  |
| 1486 | CdUgUg | -8.67  |
| 1487 | uCdUgg | -8.55  |
| 1496 | cUuCdG | -8.20  |
| 1497 | cCuUcg | -9.02  |
| 1498 | uCcUug | -7.69  |
| 1499 | dUcCug | -8.74  |
| 1500 | GDUcCg | -8.60  |

|     |        |        |      |        |        |
|-----|--------|--------|------|--------|--------|
| 723 | uUgDgg | -11.78 | 1501 | dGdUcg | -9.60  |
| 727 | CcCuUg | -9.50  | 1502 | DdGdUg | -8.53  |
| 728 | UcCcUg | -10.47 | 1503 | uDdGdg | -8.78  |
| 729 | UUcCcg | -9.17  | 1504 | dUdDgg | -8.35  |
| 730 | uUuCcg | -7.53  | 1508 | dGdDdg | -9.00  |
| 734 | GgDdUg | -9.33  | 1509 | dDgDdg | -9.24  |
| 735 | uGgDdg | -9.97  | 1510 | GdDgDg | -9.74  |
| 736 | uUgGdg | -9.41  | 1511 | CGdDgg | -9.32  |
| 740 | cUgUug | -7.39  | 1512 | CcGdAg | -11.45 |
| 741 | GcUgUg | -10.34 | 1513 | UcCgDg | -10.54 |
| 742 | uGcUgg | -10.28 | 1514 | CuCcGg | -10.25 |
| 743 | cUgCug | -12.49 | 1515 | UcUcCg | -11.89 |
| 744 | GcUgCg | -11.41 | 1516 | gUcUcG | -10.83 |
| 745 | uGcUgg | -10.28 | 1517 | uGuCug | -7.76  |
| 746 | gUgCug | -12.51 | 1518 | uUgUcg | -8.20  |
| 747 | uGuGcg | -10.00 | 1521 | GCdUug | -10.11 |
| 748 | uUgUgg | -8.26  | 1522 | UgCdUg | -9.20  |
| 753 | GcUcUg | -10.26 | 1523 | CuGcDg | -10.12 |
| 754 | uGcUcg | -10.22 | 1524 | UcUgCg | -10.04 |
| 755 | uUgCug | -7.92  | 1525 | CUcUgg | -9.14  |
| 756 | dUuGcg | -8.81  | 1526 | CcUcUg | -12.03 |
| 760 | CdUcDg | -8.69  | 1527 | uCcUcg | -9.99  |
| 761 | CCdUcg | -9.16  | 1528 | CuCcUg | -9.79  |
| 762 | UcCdUg | -8.97  | 1529 | DcUcCg | -10.04 |
| 763 | dUcCdg | -9.93  | 1530 | UdCUcg | -7.92  |
| 764 | GDUcCg | -8.60  | 1532 | CdUdCg | -7.97  |
| 765 | uGdUcg | -8.98  | 1533 | uCdUdg | -8.16  |
| 767 | cUuGdg | -8.69  | 1534 | gUcDug | -7.94  |
| 770 | GCdCug | -8.37  | 1535 | uGuCdg | -8.95  |
| 771 | CgCdCg | -10.27 | 1536 | uUgUcg | -8.20  |
| 772 | UcGCdg | -9.93  | 1551 | GgUdUg | -9.14  |
| 773 | CuCgCg | -10.42 | 1552 | GgGuAg | -9.79  |
| 774 | UcUcGg | -9.35  | 1553 | AgGgUg | -10.44 |
| 775 | CUcUcg | -11.51 | 1554 | dDgGg  | -9.52  |
| 776 | uCuCug | -7.68  | 1555 | CDdGgg | -12.32 |
| 777 | CUcUcg | -9.08  | 1556 | DcDdGg | -11.31 |
| 778 | GcUcUg | -10.26 | 1557 | dDcDdg | -10.49 |
| 779 | uGcUcg | -10.22 | 1558 | dDdcDg | -8.47  |
| 780 | cUgCug | -9.41  | 1559 | GdDdCg | -8.13  |
| 781 | UcUgCg | -10.04 | 1560 | dGdDdg | -9.00  |
| 782 | uUcUgg | -8.18  | 1561 | UdGdDg | -8.36  |
| 786 | gGdUug | -7.86  | 1562 | gUdGdg | -9.73  |
| 787 | DgGdUg | -10.12 | 1563 | DgUdGg | -9.42  |

List of used probes (pentamers and hexamers) for isoenergetic microarrays with their binding sites in (+)RNA5; a - binding sites of probes, sites are denoted by the middle nucleotide of the complementary RNA region (or two nucleotides for probes with an even number of nucleotides); b - nucleotides in capital letter (A, C, G, U, D) are 2'-O-methyl-RNA nucleotides, in small letter (a, c, g, u, d) are LNA

nucleotides, D and d are 2,6 –diaminopurine (2'-O-methyl type or LNA, respectively); d -  $\Delta G^{\circ}_{37}$  calculated as modified probe/RNA duplex <sup>1,2</sup>.

| Binding sites <sup>a</sup> | Sequence 5'→3' <sup>b</sup> | $\Delta G^{\circ}_{37}$ of duplex for complementary binding site (kcal/mol) <sup>c</sup> |
|----------------------------|-----------------------------|--|
| 19                         | UGaUuAuCU                   | -11.78   |
| 229                        | AUuGuUaUG                   | -10.99   |
| 232                        | UCuAuUgUU                   | -12.29   |
| 264                        | UcUuUcA                     | -10.26   |
| 474                        | CAuUuAgAU                   | -10.93   |
| 476                        | AUcAuUuAG                   | -10.73   |
| 637                        | CGuUuUaUC                   | -11.72   |
| 1018                       | CUcUuAuGU                   | -13.78   |
| 1137                       | CAaUuUgAA                   | -10.36   |
| 1147                       | CaUuUgA                     | -9.16  |
| 1209                       | UUcUuAuAG                   | -11.32   |
| 1375                       | UgAuUuC                     | -9.17  |
| 1381                       | AUuCuUaUG                   | -10.91   |
| 1384                       | UcAuUcU                     | -10.15   |
| 1489                       | UUaUuCaUG                   | -10.62   |
| 1492                       | UCaUuAuUC                   | -10.56   |
| 1540                       | CUuUaAuUG                   | -10.01   |
| 1543                       | UUuCuUuAA                   | -9.52  |
| 1547                       | UAuUuUuCU                   | -9.75  |

List of used additional, longer probes for isoenergetic microarrays with their binding sites in (+)RNA5; a - binding sites of probes. sites are denoted by the middle nucleotide of the complementary RNA region (or two nucleotides for probes with an even number of nucleotides); b – nucleotides in capital letter (A, C, G, U, D) are 2'-O-methyl-RNA nucleotides, in small letter (a, c, g, u, d) are LNA nucleotides; c -  $\Delta G^{\circ}_{37}$  calculated as modified probe/RNA duplex <sup>1,2</sup>.

## References

- 1 Kierzek, E., Ciesielska, A., Pasternak, K., Mathews, D. H., Turner, D. H., Kierzek, R. The influence of locked nucleic acid residues on the thermodynamic properties of 2'-O-methyl RNA/RNA heteroduplexes. *Nucleic Acids Res.* **33**, 5082-5093 (2005).
- 2 Pasternak, A., Kierzek, E., Pasternak, K., Fraczak, A., Turner, D. H., Kierzek, R. The thermodynamics of 3'-terminal pyrene and guanosine for the design of isoenergetic 2'-O-methyl-RNA-LNA chimeric oligonucleotide probes of RNA structure. *Biochemistry* **47**, 1249-1258 (2008).