Supporting Information for

DNA Sequence Design Based on Template Strategy

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In the following tables, we list the relatively optimized template and map sets for length
12, 16, 20, 24.

Table 4 Template and Map set for length 12 (total $8*22=176$, Ht =7.84, Hm=7.6)

Template	Map
101010010110	100100101110
101010101001	100101010011
101101001010	000010011111
110000011011	101000110101
110001100110	000111100101
010111011000	001001101011
111100110000	101011000110
001001111100	101110001001
	110001001101
	110010100011
	110110010100
	111000011010
	111101100000
	001101011100
	001110110010
	010001110110
	010100111001
	011011010001
	011100000111
	010111001010
	100011111000
	011010101100

Table 5 Template and Map set for length 16 (total $14 \cdot 30 + 2 \cdot 14 = 448$, $H_t = 5.86$, $H_m = 6.3$)

Template	Map
0000001111001111	1000000001111111
0000110000111111	1000011110000111
0001010111110001	1000101110111000
0010101011110010	1001110011001001
0011001100111100	1010110101010010
0011111100000011	1011000111100100
0101011010011010	1011011000011100
0101101010100101	1011101000100011
0110011001101001	1100111001100100
0110100110011001	1101001011010010
0111000001010111	1101010100101010
1010011010010101	1101100100010101
1011000010101011	1110001101001001
1100001100110011	1110010010110001
1001101001011001	1110100010001110
0110010110100110	0001011101110001
	0001101101001110
	0001110010110110
	0010011011101010
	0010101011010101
	0010110100101101
	0011000110011011
	0100010111011100
	0100100111100011
	0100111000011011
	0101001010101101
	0110001100110110
	0111010001000111
	0111100001111000
	0111111110000000

*The two bold strands belong to the palindrome set T_s .

Table 6 Template and Map set for length 20 (total $11 \times 38 = 418$, $H_t = 8.16$, $H_m = 7.8$)

Template	Map
00000000001111111111	10000000000111111111
00000111110000011111	10000011111000001111
00001011110111100001	10000101111011110000
00011100111001100110	10011010011100110001
00110001111110001010	10011011100111000010
00110111001010100101	10101100011101000110
00111010100011011100	10101101100100011001
10011001011000111001	10110110001010011010
01011010101100010011	10110110100001100101
10101100100110000111	10111001010010101100
01101101001001001011	11001110010011001001
	11001111000000110110
	11010100110100101010
	11010101001110000101
	11011000101001011100
	11100010110110010100
	11100011001101101000
	11101000101010100011
	11110001010001010011
	00001110101110101100
	00010111101010101100
	00011100110010010111
	00011101001001101011
	00100111010110100011
	00101010110001111010
	00101011001011010101
	00110000111111001001
	00110001101100110110
	01000110101101010011
	01001001011110011010
	01001001110101100101
	01010010011011100110
	01010011100010111001
	01100100011000111101
	01100101100011001110
	01111010000100001111
	01111100000111110000
	01111111111000000000

Table 7 Template and Map set for length 24 (total $14 \times 46 + 1 \times 14 = 658$, Ht =8.96, Hm=9.4)

Template	Map	
000000000000111111111111	100000000000011111111111	000101011110011011000011
000000111111000000111111	100000011111100000011111	000101111001001100101101
000001011111011111000001	100000101111101111100000	000110101011010101011010
000110100111100111000110	100011110001110001100011	000110110100101010111010
000111001011101010111000	100011110110010110001100	000111000110100101110101
000111111000011001100110	100111001001111010010100	001001100111011000110110
001011100110111000001011	101011011010001001111000	001001111000100111010110
001011111000100110010101	101100110010111100010001	001010011101010110110001
011001001101110010100110	101101001100110100101010	001010101100111001001101
011110001010010100101101	101101100101000011011001	001011000011101110001011
011110010100001010110011	101110010101001101000110	001100010011110011101100
100110101100010011011001	101110101010000010100111	010001010101111101011000
101101100001100001110011	110011101100001100010011	010001101010110010111001
111000101010001011000111	110100111100010001110100	010010011010111100100110
110100001101101100001011	110101010011000110110010	010010110011001011010101
	110101100010101001001110	010011001101000011101110
	110110000111011000101001	010100100101110110000111
	110110011000100111001001	011000110110000101101011
	111000111001011010001010	011100001001101001110011
	111001001011010101000101	011100001110001110011100
	111001010100101010100101	011111010000010000011111
	111010000110110011010010	011111100000011111100000
	111010100001100100111100	011111111111100000000000

*The bold strand belongs to the palindrome