

Oligo Coupling Efficiency and Expected Yield

Chemical DNA synthesis comprises of multiple reactions to complete a cycle of the appropriate base coupling. Thus the use of reagents of exacting specifications, state of the art instrument and optimized software driven protocols are necessary to maintain the highest possible coupling efficiency. This clearly becomes enormously important when synthesizing a long oligo. Gene Link specializes in long oligos. Our description of long oligos is 180mer to 250mer. You are invited to compare.

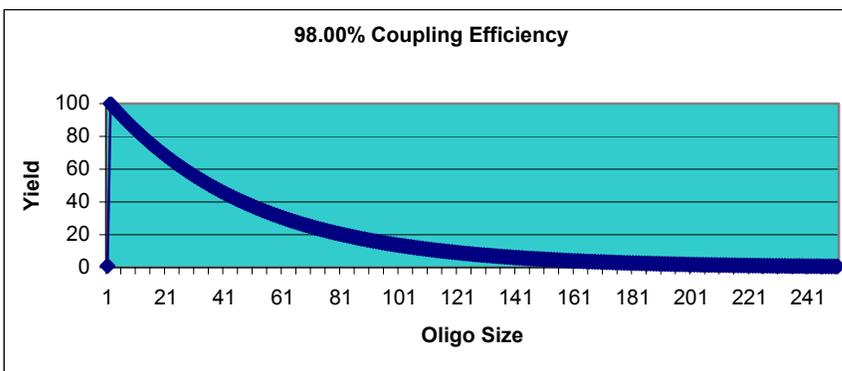
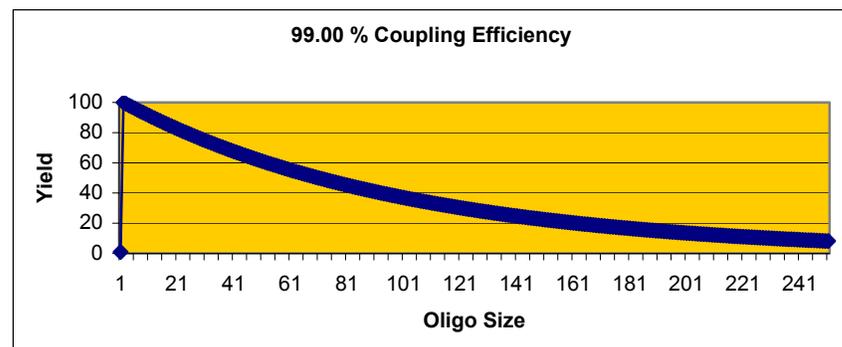
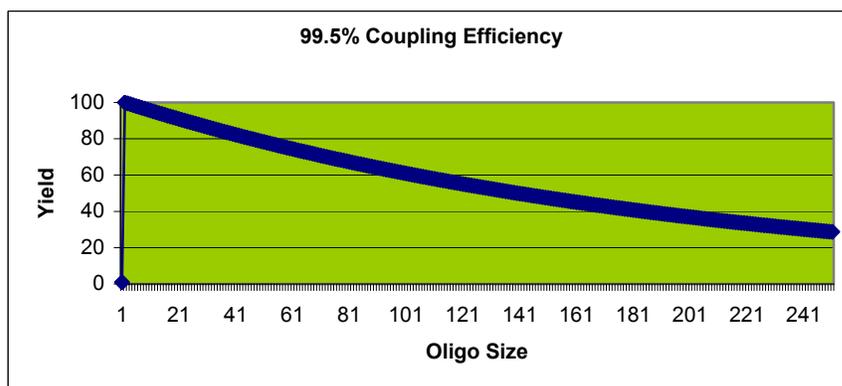
PCR and sequencing reactions are very robust and can tolerate up to 50% failure/truncated sequence oligos. Coupling efficiency of 99.5% and 98% seems very good but on closer examination the yield is almost half for a 40 mer!

You are clearly taking a chance by using oligos synthesized at anything below 99.5% coupling efficiency. Yes, the oligos will work most of the time. Would you not want the confidence of it working all the time?.

Long oligos just cannot be synthesized at anything below 99.5% coupling efficiency. Please see the detailed coupling efficiency table and graph given below.

Coupling Efficiency and Full Length Oligo Yield

Oligo Size	99.50%	99.00%	98.00%
20	90.916	82.617	68.123
25	88.665	78.568	61.578
30	86.471	74.717	55.662
35	84.331	71.055	50.314
40	82.243	67.573	45.48
45	80.208	64.261	41.11
50	78.222	61.112	37.16
55	76.286	58.117	33.59
60	74.398	55.268	30.363
65	72.557	52.56	27.445
70	70.761	49.984	24.808
75	69.009	47.534	22.425
80	67.301	45.204	20.27
85	65.635	42.989	18.323
90	64.011	40.882	16.562
95	62.427	38.878	14.971
100	60.881	36.973	13.533
110	57.905	33.438	11.057
115	56.472	31.799	9.995
120	55.074	30.24	9.034
130	52.381	27.349	7.382
140	49.821	24.734	6.031
150	47.385	22.369	4.928
160	45.068	20.23	4.027
170	42.865	18.296	3.29
180	40.769	16.546	2.688
190	38.776	14.964	2.196
200	36.88	13.533	1.795
210	35.08	12.24	1.47
220	33.36	11.07	1.19
230	31.73	10.01	0.98
240	30.18	9.05	0.8
250	28.7	8.19	0.65



Gene Link™

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