

		<u>start</u>	<u>len</u>	<u>tm</u>	<u>gc%</u>	<u>any_th</u>	<u>3'_th</u>	<u>hairpin</u>	<u>seq</u>
1	LEFT PRIMER	135	20	58.65	50.00	0.00	0.00	0.00	tctggtgagcatggacttga
	RIGHT PRIMER	299	20	58.74	55.00	0.00	0.00	0.00	tgagagcttcaccagacctc
	INTERNAL OLIGO	161	20	60.03	55.00	0.00	0.00	34.41	aggagtgtgaagttccctcgc
	PRODUCT SIZE: 165, PAIR ANY_TH COMPL: 22.36, PAIR 3'_TH COMPL: 5.30								
2	LEFT PRIMER	354	20	59.22	55.00	14.70	6.17	0.00	gtgctgttctcgtcgacttg
	RIGHT PRIMER	548	20	59.54	55.00	0.00	0.00	0.00	atccctctgcttctcttcgc
	INTERNAL OLIGO	411	20	59.95	50.00	5.67	0.00	0.00	ttggccagctattcagacca
	PRODUCT SIZE: 195, PAIR ANY_TH COMPL: 0.00, PAIR 3'_TH COMPL: 0.00								
3	LEFT PRIMER	411	20	59.01	50.00	5.11	0.00	0.00	ttggccagctattcagacca
	RIGHT PRIMER	609	19	59.10	57.89	0.00	0.00	0.00	ataccggcacctgtaccac
	INTERNAL OLIGO	539	20	60.03	55.00	9.94	0.00	33.99	gcagagggatgtgactgtct
	PRODUCT SIZE: 199, PAIR ANY_TH COMPL: 0.00, PAIR 3'_TH COMPL: 0.00								
4	LEFT PRIMER	358	20	60.04	55.00	14.70	10.79	0.00	tgttctcgtcgacttggagc
	RIGHT PRIMER	557	20	59.10	55.00	0.00	0.00	0.00	gacagtcacatccctctgct
	INTERNAL OLIGO	411	20	59.95	50.00	5.67	0.00	0.00	ttggccagctattcagacca
	PRODUCT SIZE: 200, PAIR ANY_TH COMPL: 0.00, PAIR 3'_TH COMPL: 0.00								
5	LEFT PRIMER	105	20	59.75	60.00	0.00	0.00	0.00	gctcacacccactctacagg
	RIGHT PRIMER	295	20	58.37	50.00	0.00	0.00	0.00	agcttcaccagacctcgtta
	INTERNAL OLIGO	161	20	60.03	55.00	0.00	0.00	34.41	aggagtgtgaagttccctcgc
	PRODUCT SIZE: 191, PAIR ANY_TH COMPL: 0.00, PAIR 3'_TH COMPL: 0.00								
6	LEFT PRIMER	188	21	58.52	47.62	0.00	0.00	0.00	ggtatccgcattcatcaacga
	RIGHT PRIMER	373	20	59.22	55.00	10.46	0.00	0.00	caagtcgacgagaacagcac
	INTERNAL OLIGO	280	20	59.66	55.00	0.00	0.00	38.66	gaggctctggtgaagctctca
	PRODUCT SIZE: 186, PAIR ANY_TH COMPL: 0.00, PAIR 3'_TH COMPL: 0.00								
7	LEFT PRIMER	393	21	58.93	52.38	4.00	0.00	0.00	ctgtacgagctgggtccttttg
	RIGHT PRIMER	554	20	58.05	50.00	0.00	0.00	0.00	agtcacatccctctgcttct
	INTERNAL OLIGO	455	20	60.24	55.00	5.43	4.11	44.34	ggagccggaataattgggc
	PRODUCT SIZE: 162, PAIR ANY_TH COMPL: 0.00, PAIR 3'_TH COMPL: 0.00								
8	LEFT PRIMER	470	20	58.02	50.00	0.00	0.00	0.00	tgggcaaaaggtcactacac
	RIGHT PRIMER	668	21	58.43	47.62	0.00	0.00	0.00	aggttgcatcattcgatcag
	INTERNAL OLIGO	539	20	60.03	55.00	9.94	0.00	33.99	gcagagggatgtgactgtct
	PRODUCT SIZE: 199, PAIR ANY_TH COMPL: 1.08, PAIR 3'_TH COMPL: 0.00								

9	LEFT PRIMER	274	21	58.24	47.62	0.00	0.00	0.00	tttaacgaggtctgggtgaagc
	RIGHT PRIMER	433	20	58.05	55.00	0.00	0.00	0.00	gtctggtctgaatagctggc
	INTERNAL OLIGO	354	20	60.10	55.00	15.15	6.64	0.00	gtgctgttctcgtcgacttg
	PRODUCT SIZE: 160,	PAIR	ANY_TH	COMPL: 0.00,	PAIR	3'_TH	COMPL: 0.00		
10	LEFT PRIMER	414	20	58.05	55.00	0.00	0.00	0.00	gccagctattcagaccagac
	RIGHT PRIMER	612	19	59.85	63.16	0.00	0.00	0.00	cccataccggcacctgtac
	INTERNAL OLIGO	539	20	60.03	55.00	9.94	0.00	33.99	gcagagggatgtgactgtct
	PRODUCT SIZE: 199,	PAIR	ANY_TH	COMPL: 0.00,	PAIR	3'_TH	COMPL: 0.00		
11	LEFT PRIMER	459	22	58.47	45.45	0.00	0.00	0.00	ccggaataattgggcaaaagg
	RIGHT PRIMER	620	20	58.59	50.00	0.00	0.00	0.00	ataacgtacccataccggca
	INTERNAL OLIGO	539	20	60.03	55.00	9.94	0.00	33.99	gcagagggatgtgactgtct
	PRODUCT SIZE: 162,	PAIR	ANY_TH	COMPL: 0.65,	PAIR	3'_TH	COMPL: 7.88		
12	LEFT PRIMER	345	20	57.91	50.00	0.00	0.00	0.00	atgttcctcgtgctgttctc
	RIGHT PRIMER	541	21	58.12	47.62	0.00	0.00	0.00	tgcttctcttcgcactacatc
	INTERNAL OLIGO	411	20	59.95	50.00	5.67	0.00	0.00	ttggccagctattcagacca
	PRODUCT SIZE: 197,	PAIR	ANY_TH	COMPL: 0.00,	PAIR	3'_TH	COMPL: 1.30		
13	LEFT PRIMER	520	21	57.84	47.62	0.00	0.00	0.00	agatgtagtgcaagagaagc
	RIGHT PRIMER	683	20	59.82	50.00	0.00	0.00	0.00	acggcacaactgagaagggt
	INTERNAL OLIGO	580	20	59.58	55.00	0.00	0.00	42.52	ttctcttgggggtggtacag
	PRODUCT SIZE: 164,	PAIR	ANY_TH	COMPL: 0.00,	PAIR	3'_TH	COMPL: 0.00		
14	LEFT PRIMER	249	21	57.25	42.86	0.00	0.00	0.00	acaacttgagaggatgaacgt
	RIGHT PRIMER	422	20	59.30	50.00	7.01	0.00	0.00	atagctggccaaaaggacca
	INTERNAL OLIGO	354	20	60.10	55.00	15.15	6.64	0.00	gtgctgttctcgtcgacttg
	PRODUCT SIZE: 174,	PAIR	ANY_TH	COMPL: 0.00,	PAIR	3'_TH	COMPL: 0.00		
15	LEFT PRIMER	102	20	59.83	60.00	0.00	0.00	0.00	ctcgtcacacccactctac
	RIGHT PRIMER	294	22	59.26	50.00	0.00	0.00	0.00	gcttcaccagacctcgttaag
	INTERNAL OLIGO	161	20	60.03	55.00	0.00	0.00	34.41	aggagtgttaagttccctcgc
	PRODUCT SIZE: 193,	PAIR	ANY_TH	COMPL: 0.00,	PAIR	3'_TH	COMPL: 0.00		
16	LEFT PRIMER	363	18	59.04	61.11	14.70	0.00	0.00	tcgtcgacttggagccag
	RIGHT PRIMER	552	21	58.46	47.62	0.00	0.00	0.00	tcacatccctctgcttctctt
	INTERNAL OLIGO	411	20	59.95	50.00	5.67	0.00	0.00	ttggccagctattcagacca
	PRODUCT SIZE: 190,	PAIR	ANY_TH	COMPL: 0.00,	PAIR	3'_TH	COMPL: 0.00		
17	LEFT PRIMER	162	20	59.39	55.00	0.00	0.00	0.00	ggagtgttaagttccctcgca
	RIGHT PRIMER	361	22	57.31	40.91	0.00	0.00	0.00	aacagcacgaggaacatatttg
	INTERNAL OLIGO	280	20	59.66	55.00	0.00	0.00	38.66	gaggctctggtgaagctctca
	PRODUCT SIZE: 200,	PAIR	ANY_TH	COMPL: 8.11,	PAIR	3'_TH	COMPL: 0.00		
18	LEFT PRIMER	529	20	59.54	55.00	0.00	0.00	0.00	gcgaagagaagcagagggat
	RIGHT PRIMER	688	18	60.85	61.11	0.00	0.00	0.00	aggggacggcacaaactga
	INTERNAL OLIGO	645	20	59.81	50.00	0.00	0.00	34.80	tccttgatcgaatgatggca
	PRODUCT SIZE: 160,	PAIR	ANY_TH	COMPL: 0.00,	PAIR	3'_TH	COMPL: 0.00		
19	LEFT PRIMER	100	19	59.63	57.89	0.00	0.00	0.00	aactcgctcacacccactc
	RIGHT PRIMER	269	21	57.25	42.86	2.11	0.00	0.00	acgttcatcctctcaagttgt

INTERNAL OLIGO		161	20	60.03	55.00	0.00	0.00	34.41	aggagtgtgaagttccctcgc
PRODUCT SIZE: 170,		PAIR ANY_TH COMPL: 0.00,		PAIR 3'_TH COMPL: 0.00					
20	LEFT PRIMER	485	18	59.43	61.11	8.83	0.00	0.00	tacactgaaggcgcgag
	RIGHT PRIMER	676	20	57.04	45.00	0.00	0.00	0.00	aactgagaaggttgccatca
	INTERNAL OLIGO	539	20	60.03	55.00	9.94	0.00	33.99	gcagagggatgtgactgtct
PRODUCT SIZE: 192,		PAIR ANY_TH COMPL: 0.00,		PAIR 3'_TH COMPL: 0.00					
21	LEFT PRIMER	421	21	57.25	42.86	0.00	0.00	0.00	attcagaccagacaacttcgt
	RIGHT PRIMER	615	19	59.85	63.16	0.00	0.00	0.00	gtacccataccggcacctg
	INTERNAL OLIGO	539	20	60.03	55.00	9.94	0.00	33.99	gcagagggatgtgactgtct
PRODUCT SIZE: 195,		PAIR ANY_TH COMPL: 0.00,		PAIR 3'_TH COMPL: 0.00					
22	LEFT PRIMER	281	19	57.54	52.63	0.00	0.00	0.00	aggctctggtgaagctctca
	RIGHT PRIMER	480	22	58.47	45.45	0.00	0.00	0.00	ccttttgcccaattatttccgg
	INTERNAL OLIGO	411	20	59.95	50.00	5.67	0.00	0.00	ttggccagctattcagacca
PRODUCT SIZE: 200,		PAIR ANY_TH COMPL: 0.00,		PAIR 3'_TH COMPL: 0.00					
23	LEFT PRIMER	138	20	58.61	55.00	0.00	0.00	0.00	ggtgagcatggacttgatgg
	RIGHT PRIMER	322	23	57.32	39.13	21.66	0.00	0.00	agggttagcgataacttctcttt
	INTERNAL OLIGO	161	20	60.03	55.00	0.00	0.00	34.41	aggagtgtgaagttccctcgc
PRODUCT SIZE: 185,		PAIR ANY_TH COMPL: 0.00,		PAIR 3'_TH COMPL: 0.00					
24	LEFT PRIMER	353	18	58.56	61.11	5.18	5.18	0.00	cgtgctgttctcgtcgac
	RIGHT PRIMER	540	23	58.71	47.83	0.00	0.00	0.00	gcttctcttcgcactacatctag
	INTERNAL OLIGO	411	20	59.95	50.00	5.67	0.00	0.00	ttggccagctattcagacca
PRODUCT SIZE: 188,		PAIR ANY_TH COMPL: 0.00,		PAIR 3'_TH COMPL: 0.00					
25	LEFT PRIMER	340	22	57.31	40.91	0.00	0.00	0.00	caaatatgttcctcgtgctgtt
	RIGHT PRIMER	499	19	60.08	57.89	0.00	0.00	0.00	cgcgcccttcagtgtagtga
	INTERNAL OLIGO	411	20	59.95	50.00	5.67	0.00	0.00	ttggccagctattcagacca
PRODUCT SIZE: 160,		PAIR ANY_TH COMPL: 0.00,		PAIR 3'_TH COMPL: 0.00					
26	LEFT PRIMER	113	20	57.73	50.00	0.00	0.00	0.00	ccactctacagggcaaacia
	RIGHT PRIMER	292	23	57.27	39.13	0.00	0.00	0.00	ttcaccagacctcgtaaagtat
	INTERNAL OLIGO	161	20	60.03	55.00	0.00	0.00	34.41	aggagtgtgaagttccctcgc
PRODUCT SIZE: 180,		PAIR ANY_TH COMPL: 0.00,		PAIR 3'_TH COMPL: 0.00					
27	LEFT PRIMER	407	21	58.27	47.62	5.11	0.00	0.00	ccttttggccagctattcaga
	RIGHT PRIMER	579	23	57.22	39.13	0.00	0.00	0.00	tgtgttatttgaaacccctgaag
	INTERNAL OLIGO	455	20	60.24	55.00	5.43	4.11	44.34	ggagccggaataattgggc
PRODUCT SIZE: 173,		PAIR ANY_TH COMPL: 0.00,		PAIR 3'_TH COMPL: 0.00					

Statistics

	con	too	in	in	not		no	tm	tm	high	high	high		high	
	sid	many	tar	excl	ok	bad	GC	too	too	any_th	3'_th	hair-	poly	end	
	ered	Ns	get	reg	reg	GC%	clamp	low	high	compl	compl	pin	X	stab	ok
Left	2599	130	0	0	0	102	0	1295	317	0	0	259	0	0	496
Right	2476	130	0	0	0	110	0	1172	292	0	0	176	31	0	565
Intl	5540	150	0	0	0	19	0	1780	1538	0	0	103	0	0	1950

Pair Stats:

considered 91287, unacceptable product size 91257, primer in pair overlaps a primer in a better pair 81231, ok 30

libprimer3 release 2.4.0

(primer3_results.cgi release 4.1.0)