

## Supplementary Material

Program	Option	50bp			100bp			200bp			500bp		
		2%	5%	10%	2%	5%	10%	2%	5%	10%	2%	5%	10%
GASSST fast	-w	14	14	14	18	18	18	18	18	18	20	20	20
	-p	94	90	82	96	91	85	96	92	86	97	93	87
	-g	2	3	5	3	5	7	4	7	12	7	14	23
	-s	0	0	0	0	0	0	0	0	0	0	0	0
GASSST accurate	-w	13	13	13	18	18	18	18	18	18	20	20	20
	-p	92	86	78	94	89	81	95	90	83	96	92	86
	-g	3	4	6	4	6	9	5	9	13	9	16	26
	-s	3	3	3	3	3	3	3	3	3	3	3	3
BWA	-n	def	5	5	def	7	7	def	def	def	-	-	-
	-o	def	2	2	def	4	4	def	def	def	-	-	-
PASS	max_seed_hits	20	20	20	20	20	20	20	20	20	-	-	-
	-pst	11	9	5	8	4	0	4	0	0	-	-	-
	-fid	94	90	82	96	91	85	96	92	86	-	-	-
	-g	2	3	5	3	5	7	4	7	12	-	-	-

Supplemental table S1. "def" means with default program options.

Parameters set for each program and dataset for experiments on simulated data corresponding to Table 4. BWA-SW and SSAHA2 were set with default options. Option -454 was set for SSAHA2 for 100 and 200 bp reads. BFAST was run with its ten recommended indexes, with options -K 8 and -M 1280 for all datasets. PASS was run with seed 11111101111111 and PST table W7M1m0G0X0.pst