

Table S3. *BsLipA* variants and mutagenesis primer sequences

Mutation	Forward primer sequence	Reverse Primer sequence
G104I	GTCGTGACGCTTGGC atc GCGAACCGTTTGACG	CGTCAAACGGTTCGC gat GCCAAGCGTCACGAC
G104L	GTCGTGACGCTTGGC ctg GCGAACCGTTTGACG	CGTCAAACGGTTCGC cag GCCAAGCGTCACGAC
L55F	AACAATGGACCGGT Attc TCACGATTTGTGCAA	TTGCACAAATCGTG Agaa TACCGGTCCATTGTT
V59F	GTATTATCACGATTT ttc CAAAAAGGTTTTAGAT	ATCTAAAACCTTTT Ggaa AAATCGTGATAATAC
I122W	CAGATCCAAATCA Atgg ATTTTATACACATCC	GGATGTGTATAAAA Tcca TTGATTTGGATCTG
L160H	GGACACATCGGCCT Tcat TACAGCAGCCAAGTC	GACTTGGCTGCTGT Aatg AAGGCCGATGTGTCC
N51F	GGCACAAATTATA AAttc GGACCGGTATTATCA	TGATAATACCGGTCC gaa GTTATAATTTGTGCC
G52M	CACAAATTATA CAAA T atg CCGGTATTATCACGA	TCGTGATAATACCGG cat ATTGTTATAATTTGTG
V54H	TATAACAATGGACCG cat TTATCACGATTTGTG	CACAAATCGTGATA AAatg CGGTCCATTGTTATA
F58I	CCGGTATTATCACGA atc GTGCAAAAAGGTTTTA	TAAAACCTTTTGCAC gat TCGTGATAATACCGG
I87W	GAACACACTTTACT Actg AAAAATCTGGACGGC	GCCGTCCAGATTTT Tcca GTAGTAAAGTGTGTTT
V96S	GACGGCGGAAATA AAAgc GCAAACGTCGTGACG	CGTCACGACGTTTGC get TTTATTTCCGCCGTC