

Supplementary Table 1. P-values for entire zebrafish assay series.

Amino Acid	Student's T-test P-values for Zebrafish Assay
P64L	<0.0001
G119R	<0.0001
G125R	<0.0001
N151S	0.235
V152M	0.8447
R187Q	0.1122
T203I	0.2572
D249E	<0.0001
G261D	0.1722
G287R	0.5768
E290D	0.0055
E303K	<0.0001
E305X	0.0052
D310E	0.0106
R406H	0.584
K441R	0.5682
R448C	0.0077
R474X	<0.0001
M532V	0.9393
P553S	0.2683

Supplementary Table 2. Sequencing primers and conditions for Sanger confirmation of variants.

Variants	Forward primer/Reverse primer
P64L	CCCTGATTTGTTTAGTGATTACTCC/ CTTGAAGCCACCAGACAACA
G119R	ACAAGCGCTCACTGTTGAAA/CACAAGGAACCTCTAGGGGA
G125R, N151S, V152M	GTCAGCAGGGTTCCAAGTGT/ CACTGCCGCTGACACATAAT
R187Q, T203I	AAAGCCCAAACTTGACAGAA/ CCAGTGAGGTAGTTATATCCCTTTT
D249E	CCCTGTAATGCAGTCCACCT/ CCTCCATAAGCCAGGTTTGA
D261D	AGTTCTGCAAATGCCCACTC/ TCCAATGGATGACTTCTTTTCAG
G287R, E290D	TGTGCAGTGAGACCGTCTTT/ CAGATGAAAGCCTGTGATGG
E303K, E305*, D310E	TCCAGTTTTAAAAGCAATTCTCAA/ CTGGAAACTGTGACACCATGA
R406H, K441R, R448C, R474*	GCCATGGCTGGATGTTTACT/ TTCTGGGGAAATGAAAAAGG
M532V, P553S	TCCAGTGAGATTTGCTTCATTTT/ GCTGCATCTCTGCAACTCTG

PCR conditions: 25X (anneal 56C for 30secs, extension 72C for 1min/kb)

Sequencing conditions: 96C for 4 mins, 30X (96C for 20secs, 50C for 5secs, 60C for 4mins)