

**Supplemental Table 1.** Primers used in this study. Recognition sequences for restriction enzymes are shown in bold and italics and homologous sequences to the *hDHFR* cassette used for generation of a *PbPI3K* knock out construct are underlined.

Primer	Sequence (5' - 3')
155	<b><i>AGATCT ATCGAT</i></b> ACGTTTTTCTTACTTATATATTTATACC
156	<b><i>CTGCAG</i></b> ATCGAAATTGAAGGAAAAAC
157	<b><i>AGATCT</i></b> GGTGGACCTGGTGGTTACCCTTACGATGTTCTG
158	<b><i>ATCGAT</i></b> TTTATCGTCCTCCTGGTTCATACAGCATCCTGGACAGCA GTTTAGGAAAGAACCTGCGACTCCAGCGTAATCTGG
159	<b><i>CCGCGG</i></b> CTTTAATTTTGCCAATAGATCC
160	<b><i>AGATCT</i></b> TCCACCAGGTCCACC TTTCCAGTTTAAAGCCCATTCC
161	AAGAGATAAAAAATGAGAAAATCG
162	<u>GCTGGGCTGCAGAGGCCTGTTAAC</u> CTATTATCTTAAATCGATTGTATGG
164	<u>ATTTTTATCTTATCCCAAATTAAGC</u>
168	<u>CGATGGGTACCCTCGAGGCTAGCGA</u> TTTTTGTA CTGCAATTTACAATCC
175	GGTTCGCTAAACTGCATCG
176	GAGAACACCTGGGTATTCTGG
181	<b><i>CTCGAG</i></b> CTTTAATTTTGCCAATAGATCC
182	<b><i>GCTAGC</i></b> TTTCCAGTTTAAAGCCCATTCC
185	TACAACCTAATGATGGCTTTGG
200	ACATATGGGGATTGTAAATGC
202	ATGAACAAATACATAAGAGCGCC
207	GCCCTCCCAACATAACCAG
211	ATGCATGCCAAGCCTTTGTCTCAAG
242	TGGGGTGATGATAAAAATGAAAG
244	ATT <b><i>CCTAGG</i></b> ATGGTGAGCAAGGGCGAGG
245	TAT <b><i>CTTAAG</i></b> TTATGCCTTCTTGTTTCAGCTGC
251	TGAGTACTTGTACAGCTCGTCC
272	<b><i>AAGCTT CTCGAG</i></b> CCGGAATTCGAAAGTG
273	GGATC <b><i>CTTAAG</i></b> CTCGACTCGACTTATGC
274	<b><i>AGATCT</i></b> TTTATTTCCAGTTTAAAGCCCATTCC
DHter	CATTTTTACAGTTATAAATAACAATCAATTG