

Proteomic, Transcriptomic, Mutational, and Functional Assays Reveal the Involvement of Both THF and PLP Sites at the GmSHMT08 in Resistance to Soybean Cyst Nematode

Naoufal Lakhssassi ¹, Dounya Knizia ¹, Abdelhalim El Baze ¹, Aicha Lakhssassi ², Jonas Meksem ³

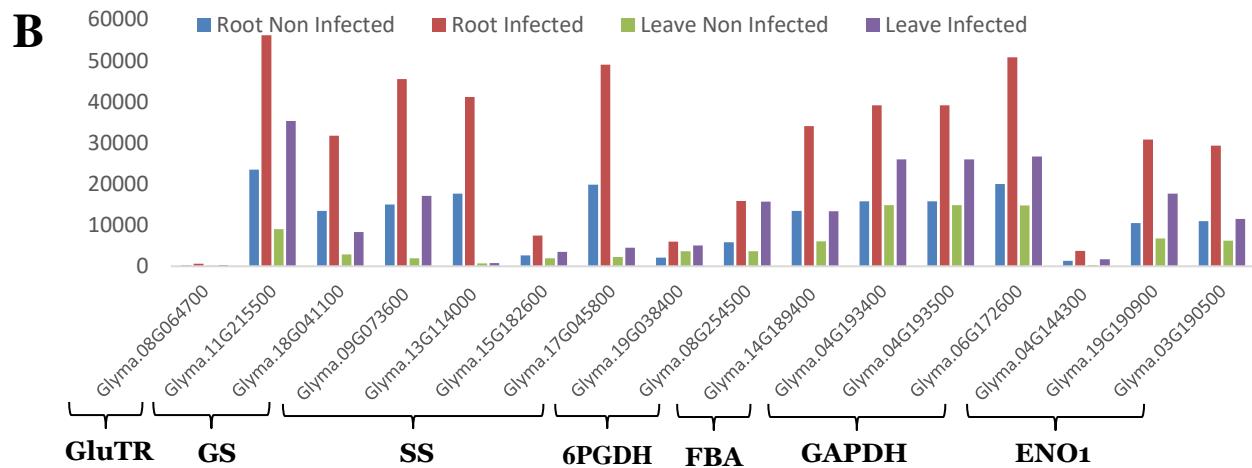
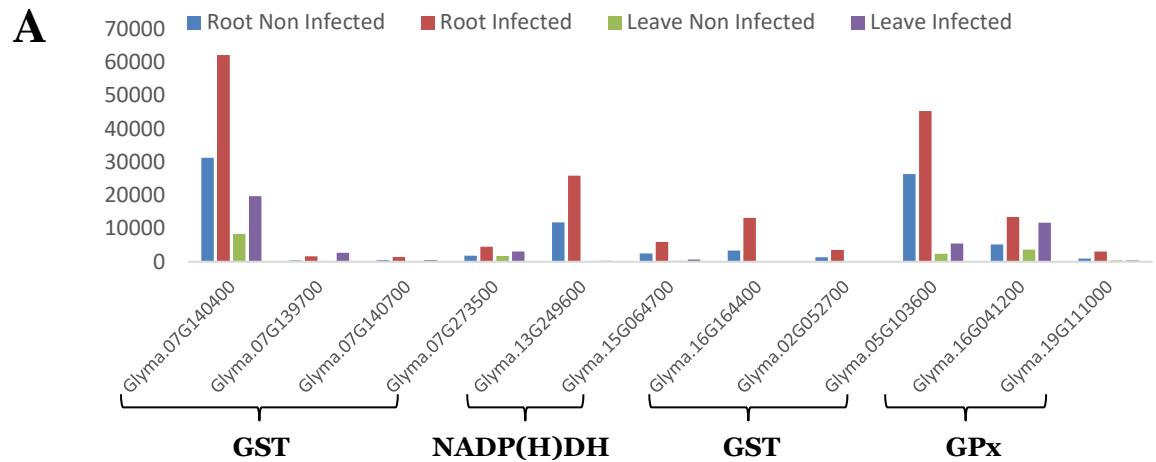
and Khalid Meksem ^{1,*}

¹ Department of Plant, Soil and Agricultural Systems, Southern Illinois University,
Carbondale, IL 62901, USA

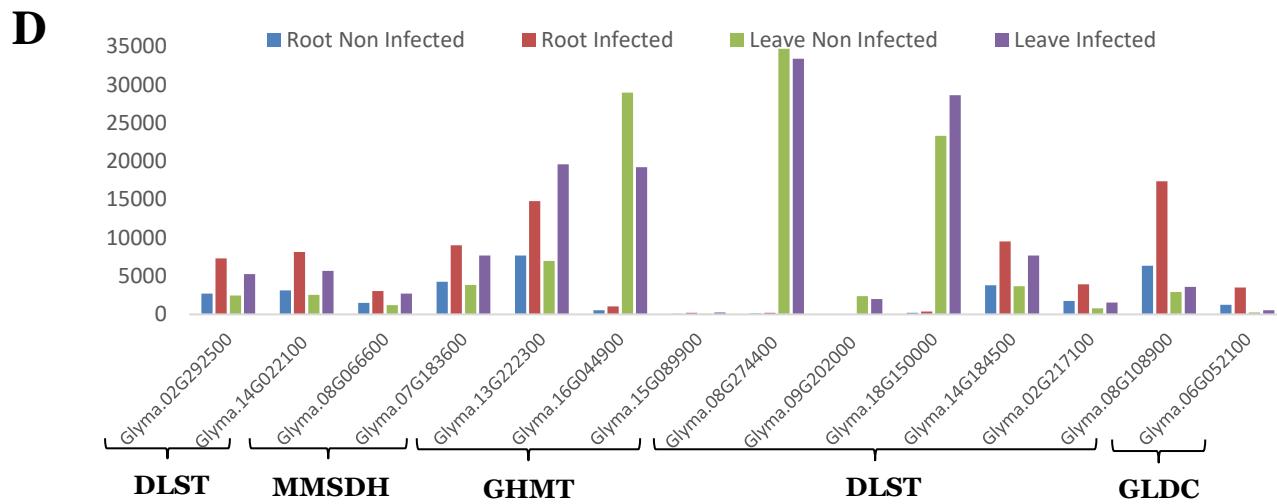
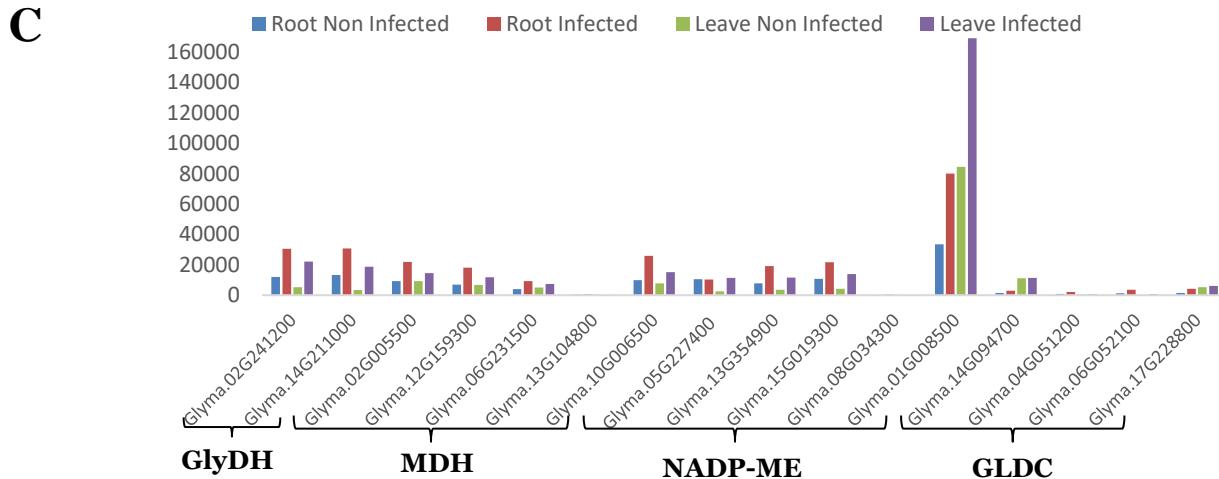
² Faculté des Sciences et Techniques, Université Abdelmalek Essaâdi, Tanger 90000, Morocco

³ Trinity College of Arts and Sciences, Duke University, Durham, NC 27708, USA; jonas.meksem@duke.edu
* Correspondence: meksem@siu.edu

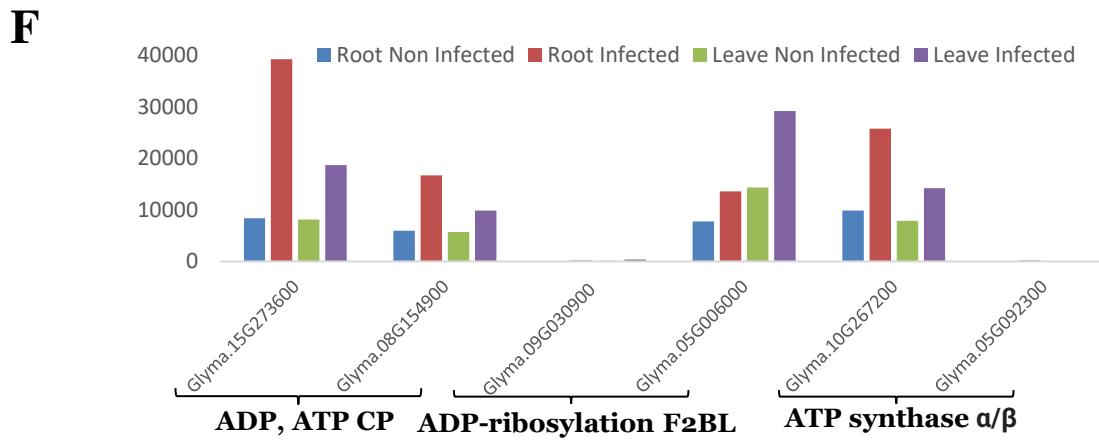
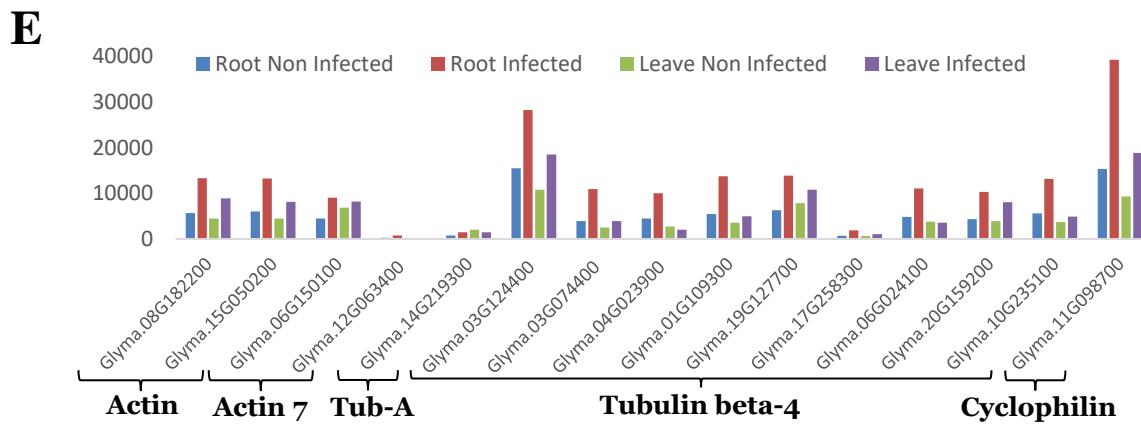
Supplemental material



Supplemental Figure S1. Expression analysis of SCN infected (3DAI) and non-infected soybean roots and leaves based on RNAseq data analysis of all the identified genes from mass spectrometry shown in Table S2, corresponding to key components related to redox hemeostasis (**A**), Glycolysis (**B**), Glyoxylate cycle (**C**), Succinyl-CoA and heme biosynthesis related enzymes (**D**), Cytoskeleton-related genes (**E**), and ATP mitochondrial related genes (**F**).

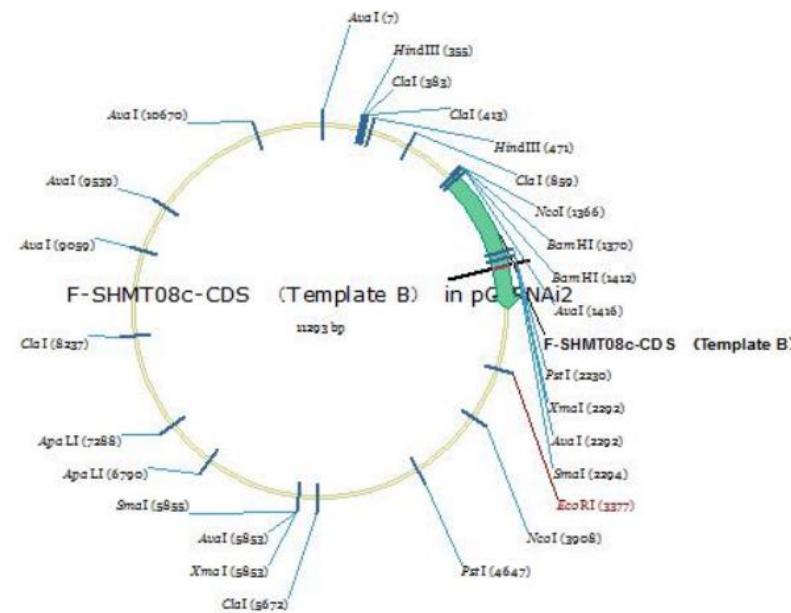
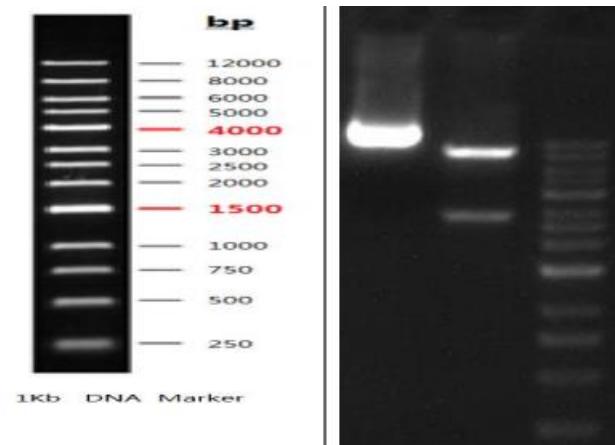


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Gene Name F-SHMT08c-CDS
Cloning Vector pg2RNAi2
Length (bp) 1430
Cloning Sites Ascl-AvrII



Supplemental Figure S2. F-SHMT08c-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

Detailed Sequence of the Whole Construct:

```
1 TTGATCCCGA GGGGAACCT GTGGTTGGCA TGCACATACA AATGGACGAA CGGATAAACCC  
61 TTTTCACGCC CTTTTAAATA TCCGTTATTG TAATAAACGC TCTTTCTCT TAGGTTTACCC  
121 CGCCAATATA TCCTGTCAAA CACTGATAGT TTAAAAGTGAA GGCGGGAAAC GACAATCTGA  
181 TCCAAGCTCA AGCTCATTCG CCATTCAAGGC TGCGCAACTG TTGGGAAGGG CGATCGGTGC  
241 GGGCCTCTTC GCTATTACGC CAGCTGGCGA AAGGGGGATG TGCTGCAAGG CGATTAAGTT  
301 GGGTAACGCC AGGGTTTCC CAGTCACGAC GTTGTAAAAC GACGCCAGT GCCAAGCTTA  
361 TTACCCCTGTT ATCCCCTAGAT ATCGATTTG GCTACCTTAA GGTAGCCAAA ATCGATCACT  
421 AGTGCGGCCG CGGGGCCAAT ATAACAAACGA CGTCGTAACA GATAAAGCGA AGCTTGAAGG  
481 TGCATGTGAC TCCGTCAAGA TTACGAAACC GCCAACTACC ACGCAAATTG CAATTCTCAA  
541 TTTCTCTAGAA GGACTCTCCG AAAATGCATC CAATACCAAA TATTACCCGT GTCATAGGCA  
601 CCAAGTGACA CCATACATGA ACACCGGTCA CAATATGACT GGAGAAGGGT TCCACACCTT  
661 ATGCTATAAA ACGCCCCACA CCCCTCCTCC TTCCTTCGCA GTTCAATTCC AATATATTCC  
721 ATTCTCTCTG TGTATTTCCC TACCTCTCCC TTCAAGGTTA GTCGATTTCT TCTGTTTTT  
781 TTCTTCGTTTC TTTCCATGAA TTGTGTATGT TCTTTGATCA ATACGATGTT GATTTGATTG  
841 TGTTTGTGTT GGTTTCATCG ATCTTCAATT TTCTATAATCA GATTAGCTT TTATTATCTT  
901 TACAACAAACG TCCTTAATT GATGATTCTT TAATCGTAGA TTTGCTCTAA TTAGAGCTTT  
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1021 CTTTTTCAT TGATTACTTC AGATCCGTTA AACGTAACCA TAGATCAGGG CTTTTTCATG  
1081 AATTACTTC GATCCGTTAA ACAACAGCCT TATTTTTAT ACTTCTGTGG TTTTTCAAGA  
1141 AATTGTTCAAG ATCCGTTGAC AAAAAGCCTT ATTGTTGAT TCTATATCGT TTTTCGAGAG  
1201 ATATTGCTCA GATCTGTTAG CAACTGCCTT GTTGTGAT TCTATTGCCG TGGATTAGGG  
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1321 GATTTATCTG TGATTGTTGA CTCGACAGCG GCGGCACCGG CGCGCCATGG ATCCAGTAAG  
1381 CGTGTGGGT AACACGCCCT TGGCGACGGT GGATCCCGAG ATCCATGACC TCATCGAGAA  
1441 GGAGAAGCGC CGTCAATGCC GCGGAATCGA GCTCATGCC TCCGAGAACT TCACCTCCTT  
1501 CGCCGTCATC GAGGCCCTCG GCAGCGCTCT CACGAACAAA TACTCCGAGG GCATGCCGGG
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Supplemental Figure S2. F-SHMT08c-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

1561	CAACCGCTAC	TACGGCGGCA	ATGAATACAT	CGACCAAGATC	GAAAACCTCT	GCCGCTCACG
1621	CGCCCTCCAA	GCCTTCCACC	TCGACGCCA	ATCCTGGGGC	GTCAACGTCC	AGCCCTACTC
1681	CGGCTCCCCG	GCCAACTTCG	CCGCCCTACAC	CGCCGTCCTC	AACCCCCACG	ACCGCATCAT
1741	GGGGCTAGAT	CTCCGCTCCG	CGGGCCACCT	CACCCACGGC	TACTACACCT	CCGGCGGAAA
1801	GAAGATCTCC	GCCACCTCCA	TTTACTTCGA	GAGTCTCCCT	TACAAGTAA	ACTCCACCAC
1861	CGGCTACATC	GACTACGACC	GCTTGAAGA	AAAAGCCTA	GACTTCAGGC	AAAAACTCAT
1921	AATCTGCGGT	GGCAGCGCGT	ACCCCTCGCA	TTGGGACTAC	AAACGTTCA	GGGAAGTCGC
1981	TGATAAGTGC	GGAGCATTGC	TTCTCTGCGA	CATGGCCAC	ACTAGCGGCC	TTGTGGCCGC
2041	GCAGGAAGTG	AACAGCCCC	TCGAGTATTG	CGACATTGTG	ACCACCAAGA	CTCACAAGAG
2101	CTTGGGGGGC	CCACGTGCGG	GGATGATCTT	TTACCGGAAG	GGCCCCAAGC	CGCCGAAGAA
2161	GGGGCAGCGG	GAGAACGCGG	TTTATGATTG	CGAGGACAA	ATTAACCTCG	CGGTGTTCCC
2221	TTCGCTGCAG	GGTGGGCCCC	ACAACCACCA	GATCGGTGCT	CTCGCCGTGG	CCGTGAAGCA
2281	GGCCGCGTCG	CCCGGGTTTA	AGGCCTACGC	GAAGCAGGTT	AAGGCGAACG	CCGTTGCGCT
2341	TGGAAAATAC	TTGATGGGG	AAAGGTACAG	CCTTGTCACT	GGCGGAACCG	AGAACCATCT
2401	TGTTTGTGG	GATCTGAGAC	CTCTTGGATT	GAATGGGTAT	AAGTGGAGA	AACTCTGTGA
2461	TCTCTGTAAC	ATTACTGT	ACAACAAACG	TGTTTTGTG	GATAGCAGTG	CCCTGGGCCCC
2521	TGGTGGAGTG	CGAATTGGTG	CCCTCTCCAT	GACTTCTAGG	GGTTGGTTG	AAAAAGACTT
2581	TGAGCAGATT	GGTGAGTTCC	TTCACCGTC	TGTGACTCTC	ACACTGGAGA	TCCAGAAGGA
2641	GCATGGCAA	CTTCTCAAGG	ATTTCAACAA	GGGTCTCGC	AACAACAAGG	CTATTGAAGA
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2761	TGAAATGAAG	TACAAGGATT	AGCCTAGGTT	CGAGTATTAT	GGCATTGGGA	AAACTGTTT
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2881	ACTGTGAAAT	GGAAATGGAT	GGAGAAGAGT	TAATGAATGA	TATGTCCTT	TTGTTCATTC
2941	TCAAATTAA	ATTATTGTT	TTTCTCTTA	TTTGTGTTG	GTTGAATTG	AAATTATAAG
3001	AGATATGCAA	ACATTTGTT	TTGAGTAAA	ATGTTGCAA	TCGTTGCCTC	TAATGACCGA
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3121	AATATATT	CAGACCTAGA	AAAGCTCAA	ATGTTACTGA	ATACAAGTAT	TCCTCTTGT
3181	GTTTAGACA	TTTATGAACT	TTCCCTTATG	TAATTTCCA	GAATCCTTGT	CAGATTCTAA
3241	TCATTGCTT	ATAATTATAG	TTTACTCTAT	GGATTGTTAG	TTGAGTATGA	AAATATT
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3361	TCTTAAGAGA	GTCATGAA	CGAGCTTCCA	GAAGGTAAT	ATCCAAGATG	TAGCATCAAG
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3601	AAGAAATCTTG	AAGACGTAAG	CACTGACGAC	AACAATGAAA	AGAAGAAGAT	AGGTGCGGTG
3661	ATTGTGAAAG	AGACATAGAG	GACACATGTA	AGGTGGAAA	TGTAAGGGCG	GAAAGTAACC
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3841	TTGGTGTAA	CTATTTCTT	TGAGTACTG	AGGATACAAAC	TTCAGAGAAA	TTTGTAAAGTT
3901	TGTGATCCAT	GGTAGCAGA	GGCGGAGGAC	TGTTCACCGG	GGTGGTGCCTC	ATCCTGGTCG
3961	AGCTGGACGG	CGACGTAAC	GGCCACAAGT	TCAGCGTGT	CGGGCAGGGC	GAGGGCGATG
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4081	GGCCCACCC	CGTGACCA	TTCACCTACG	GGCGTCAGTG	CTTCAGCCGC	TACCCCGACC
4141	ACATGAAGCA	CGACGACTTC	TTCAAGTCCG	CCATGCCGA	AGGCTACGTC	CAGGAGCGCA
4201	CCATTTCTT	CAAGGACGAC	GGCAACTCA	AGACCCCGC	CGAGGTGAAG	TTCGAGGGCG
4261	ACACCCCTGGT	GAACCGCATC	GAGCTGAAGG	GCATCGACTT	CAAGGAGGAC	GGCAACATCC
4321	TGGGGCACAA	GCTGGAGTAC	AACTACAACA	GCCACAACG	CTATATCATG	CCCGACAAGC
4381	AGAAGAACGG	CATCAAGGTG	AACTTCAGA	TCCGCCACAA	CATCGAGGAC	GGCAGCGTGC
4441	AGCTGCCGA	CCACTTACCA	CAGAACACCC	CCATGGCGA	CGGCCCCGTG	CTGCTGCCG
4501	ACAACCACTA	CCTGAGCACC	CAGTCCGCC	TGAGCAAAGA	CCCCAACGAG	AAGCGCGATC
4561	ACATGGTCT	GCTGGAGTTC	GTGACCGCCG	CCGGGATCAC	TCACCGCATG	GACGAGCTGT
4621	ACAAGTAAAG	CGGCCGCCG	GCTGCAGATC	GTTCAAACAT	TTGGAATAA	AGTTTCTTAA
4681	GATTGAATC	TGTTGCCGT	CTTGTGATGA	TTATCATATA	ATTTCGTTG	AATTACGTTA
4741	AGCATGTAAT	ATTAACATG	TAATGCATG	CGTTATTAT	GAGATGGGTT	TTATGATTA

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4801	GAGTCCCGCA	ATTATAACATT	TAATACGCGA	TAGAAAACAA	AATATAGCGC	GCAAACCTAGG	8041	GCCCTGCCCG	CCTCCCTCCTT	CAAATCGTAC	TCCGGCAGGT	CATTGACCC	GATCAGCTTG
4861	ATAAAATTATC	GCGCGCGGTG	TCATCTATGT	TAATAGATCC	GATGATAAGC	TGTCAAACAT	8101	CGCACGGTGA	AACAGAACCTT	CTTGAACCTCT	CCGGCCTGTC	CACTGCCTC	GTAGATGCTC
4921	GAGAATTAAT	TCGTAATCAT	GTCATAGCTG	TTTCTGTGT	GAAATTGTTA	TCCGCTACA	8161	TTGAACAACC	ATCTGGCTTC	TGCCCTGCCT	GGGGCGCGC	GTGCCAGGG	GTAGAGAAAA
4981	ATTCCACACA	ACATACGAGC	CGGAAGCATA	AAGTGTAAAG	CCTGGGGTGC	CTAATGAGTG	8221	CGGGCGATGC	CGGGATCGAT	CAAAAGTAA	TCCGGGTGAA	CGTCAGCAC	GTCCGGGTTG
5041	AGCTAACCTA	CATTAATTGC	GTTGCGCTCA	CTGCCCGCTT	TCCAGTCGGG	AAACCTGTCG	8281	TTGCCCTCTG	TGATCTCGCG	TCAGTAGCT	CGATCTCGAT	TCACTCCGGC	
5101	TGCCAGCTGC	ATTAAATGAAT	CGGCCAACCGC	CGGGGGAGAG	CGGGTTGGC	TATTGGCTAG	8341	CGCCCGGTTT	CGCTCTTTCAC	GATCTTGTAG	CGGCTAACTA	AGGCTTACCC	CTCGGATACC
5161	AGCAATTGCG	CGTTAATTCA	GTACATTAAA	AAACGTCGC	ATGTGTATT	AAGTTGTCTA	8401	GTCACCAGGC	GGCGGTTCTT	GGCCTTCTTC	GTACGCTGCA	TGGCAACGTG	CGTGGTGT
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5581	TAGGCCGCGA	TTAAATTCCA	ACATGGATGC	TGATTATAT	GGGTATAAT	GGGCTCGCGA	8821	GGTTGCTCGT	CGGCCCTTGGG	CGGCCCTCTTA	ATCGACGGG	CACCGGCTGC	CGGGGTTGC
5641	TAATGCTGGG	CAATCAGGT	CGAACATCTA	TGCTGTTGAT	GGGAAGCCCG	ATGCCGCGAGA	8881	CGGGATTCTT	TGCGGATTTC	ATCAGCGGC	GCTTGGCAC	ATTACCGGG	CGGTGTTCT
5701	GTTGTTCTG	AAACATGGCA	AAGGTAGCGT	TGCCAATGAT	GTTACAGATG	AGATGGTCAG	8941	GCCTCGATGC	GTGCGCTG	GGCGGCTGC	GGGGCCTCA	ACTTCTCCAC	CAGGTATCATCA
5761	ACTAAACTGG	CTGACGGAAT	TTATGCCCTC	TCGGACATC	AAGCATTTC	TCCGTACTCC	9001	CCACAGCCCG	CGCCGATTTC	TACCGGGCCG	GATGGTTGC	GACCGTCACG	CGGATTCTC
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5881	AGAATATCCT	GATCAGGTG	AAAATATTGT	TGATGCGCTG	GCAGTGTTC	TGCGCCGGT	9121	CCAAACGCC	GTTCCTCCAC	ACATGGGCA	TTCCACGGG	TCGGGTCTGC	GTGTTCTT
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6001	GGCGCAATCA	CGAATGATA	ACGGTTGGT	TGATGCGAGT	GATTTTGATG	ACGAGCGTAA	9241	TTTACTCTGG	TAGCTGCGCG	ATGTTATTAG	ATAGCAGCTC	GGTAATGGTC	TTGCCCTTGC
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6181	AATAGTTGT	ATTGATGTTG	GACGAGTCGG	AATCGCAGAC	CGATACCAGG	ATCTTGCCT	9421	GACGCCGGC	ACTTAGCGT	TTTGTTGCTT	TGCTCATTT	CTCTTACCT	CATTAACTCA
6241	CCTATGGAAC	TGCTCCGGTG	AGTTTCTCC	TTCATTACAG	AAACGCTTT	TTCAAAAATA	9481	AATGAGTTT	GATTAATT	CAGCGGCCAG	GCGCTGGAC	TCGCGGGAG	CGTCGCCCTC
6301	TGGTATTGAT	AATCCTGATA	TGAAATAATT	GCAGTTTCA	TTGATGCTG	ATGAGTTTT	9541	GGGTTCTGAT	TCAAGAACGG	TTGTCGGCCG	GGCAGCAGTG	CACGCGCTG	
6361	CTAACGATTA	ATTCATGATC	CTGCATGACC	AAAATCCCTT	AACGTGAGTT	TTCGTTCCAC	9601	CGTATACGG	GACTCAAGAA	GGGGAGCTC	GTACCCGGG	AGGCCCTCGG	CAACCTCACC
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6541	CAAGAGCTAC	CAACTCTTT	TCCGAAGGTA	ACTGGCTCA	CGAGAGCGCA	GATAACCAAT	9781	AGGGCTTGGC	TGACCGGAA	TCAGCAGCAC	GTCGGCTGC	TTGATCGGG	ACACAGCCAA
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7261	CTGTCGGTA	TTTCACACCG	CATATGTCG	ACTCTCA	CAATCTGTC	TGATGCCCA	10501	CGGTGGCGT	CACTTCCTCG	CTGCGCTCAA	GTGCGCGTA	CAGGGTCGAG	CGATGCAACG
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7861	TTCCGGTTC	CAATGTACGG	CTTGGGGTTC	CCATGTACGG	TGCTATCCAC	AGGAAAGAGA	11101	GTCCTGGTT	CTAGTCGCA	GTATTGTTACT	TTATGCGACT	AAAACACGCC	ACAAGGAAAC
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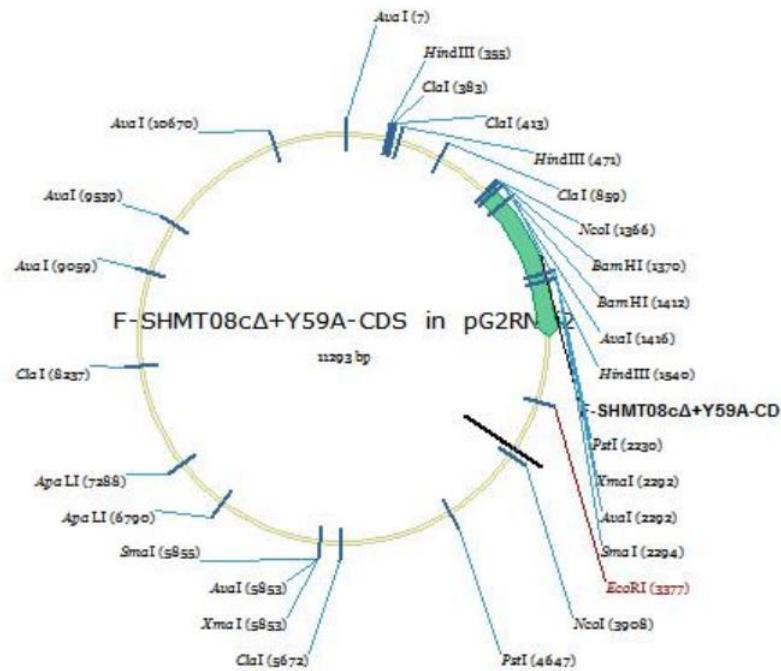
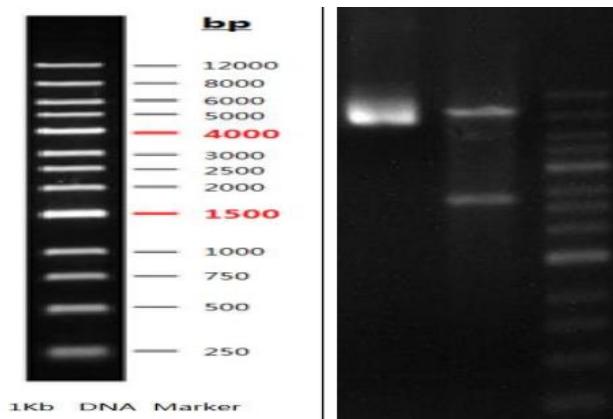
Supplemental Figure S2. F-SHMT08c-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

Gene Name F-SHMT08cΔ+Y59A-CDS

Cloning Vector pG2RNAi2

Length (bp) 1430

Cloning Sites Ascl-AvrlI



Supplemental Figure S3. F-SHMT08cΔ+Y59A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

Detailed Sequence of the Whole Construct:

```
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Supplemental Figure S3. F-SHMT08cΔ+Y59A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

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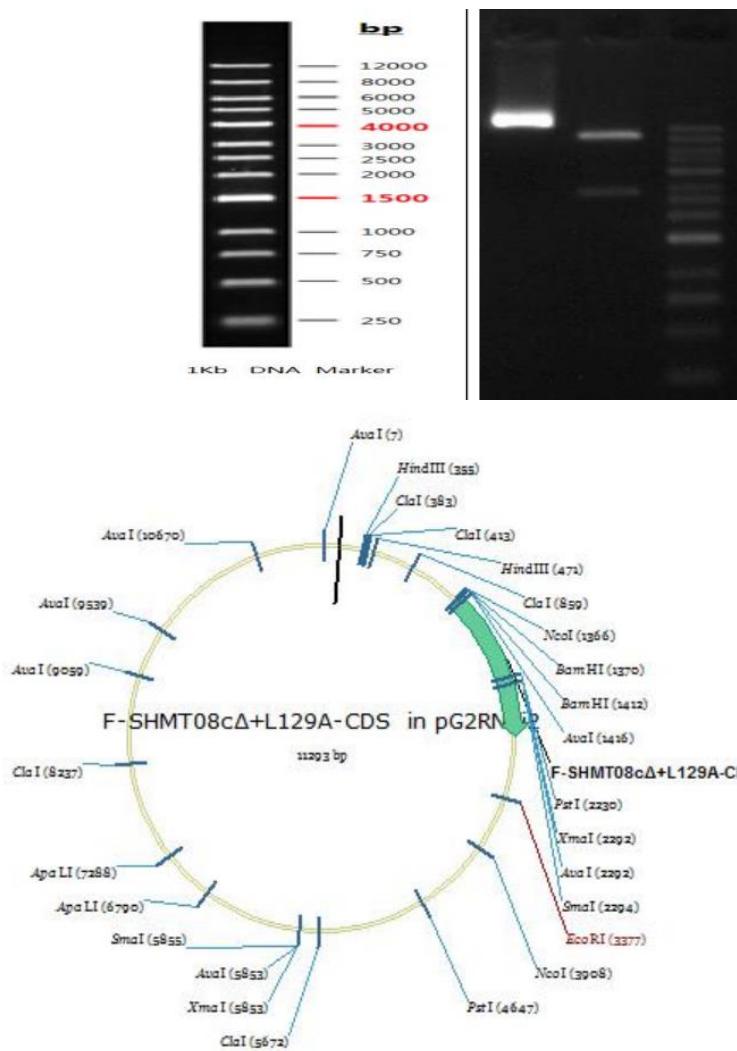
Supplemental Figure S3. F-SHMT08cΔ+Y59A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

Gene Name F-SHMT08cΔ+L129A-CDS

Cloning Vector pG2RNAi2

Length (bp) 1430

Cloning Sites Ascl-AvrlI



Supplemental Figure S4. F-SHMT08cΔ+L129A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

Detailed Sequence of the Whole Construct:

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181 TCCAAGCTCA AGCTCATTG TGCGCAACTG TTGGGAAGGG CGATCGGTGC
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301 GGGTAACGCC AGGGTTTCC CAGTCACGAC GTTGTAAAAC GACGGCCAGT GCCAAGCTTA
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421 AGTGCGGCCG CGGGCCCAAT ATAACAAACGA CGTCGTAACA GATAAAAGCGA AGCTTGAAGG
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661 ATGCTATAAA ACGCCCCACA CCCCTCCTCC TTCCCTCGCA GTTCAATTCC AATATATTCC
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1321 GATTTATCTG TGATTGTTGA CTCGACAGCG GCCGCACCGG CGCGCCATGG ATCCAGTAAG
1381 CGTGTGGGGT AACACGCCCT TGGCGACGGT GGATCCCGAG ATCCCATGACC TCATCGAGAA
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1501 CGCCGTCACT GAGGCCCTCG GCAGCGCTCT CACGAACAAA TACTCCGAGG GCATGCCGGG
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 1741 GGGGCTAGAT GCTCGCTCCG CGGCCACCT CACCCACGGC TACTACACCT CGGGCGGAAA
 1801 GAAGATCTCC GGCACCTCCA TTATCTCGA GAGTCTCCCT TACAAGGTAA ACTCCACAC
 1861 CGGCTACATC GACTACGACC GCTTGGAAAG AAAAGCCCTA GACTTCAGGC CAAAACATCAT
 1921 AATCTGCGGT GGCAGCGCGT ACCCTCGCGA TTGGGACTAC AAACGTTCA GGGAAAGTCGC
 1981 TGATAAGTGC GGAGCATTGC TTCTCTGCAG CATGGCGCAC ACTAGCGGCC TTGTGGCCGC
 2041 GCAGGAAGTG AACAGCCCCT TCGAGTATTG CGACATTGTG ACCACCAACGA CTCACAAGAG
 2101 CTTGCGGGGC CCACGTGCGG GGATGATCTT TTACCGGAAG GGGCCCAAGC CGGGCGAAGA
 2161 GGGGCAGCCG GAGAACGCGG TTATGATTT CGAGGACAAG ATTAACCTCG CGGTGTTCCC
 2221 TTGGCTGCCAG GGTGGGGCCC ACAAACACCA GATCGGTGCT CTCGGCGTGG CGCTGAAGCA
 2281 GGCGCGCTCG CCCGGGTTA AGGGCTACGC GAAGCAGGTT AAGGCAGACG CGGTTGCGCT
 2341 TGAAAATAC TTGATGGGA AAGGGTACAG CCTTGTCACT GGCGGAACGG AGAACCATCT
 2401 TGTTTTGTTG GATCTGAGAC CTCTGGATT GACTGGGTAT AAGGTGGAGA AACTCTGTGA
 2461 TCTCTGTAAC ATTACTGTTA ACAAGAACGC TGTTTTGGT GATAGCAGTG CCTTGGCCCC
 2521 TGTTGGAGTG CGAATTGGTG CCCCTGCCAT GACTTCTAGG GGTTGGTTG AAAAGAGCTT
 2581 TGAGCAGATT GGTGAGTTCC TTCACCGTGC TGTGACTCTC AACTGGAGA TCCAGAAGGA
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 2701 TCTCAAAGGT GATGTTGAGA AGTTCTCTG CTTGTTGAC ATGCTGGCT CTCCTGGTATC
 2761 TGAAATGAAG TACAAGGATT AGCTTAGTT CGAGTATTAT GGCATTGGGA AAACCTTTT
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 4021 CCACCTACGG CAAGCTGACC CTGAAGTTCA TCTGCACCC CCGCAAGCTG CCCGTGCCCT
 4081 GGCCCCACCC CGTGACACC TTCACCTACG CGCTGAGTG CTTCAGCCGC TACCCCGACC
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 4621 ACAAAGTAAG CGGGCGCCCG GCTGAGATC GTTCAACAT TTGGCAATAA AGTTCTTAA
 4681 GATTGAATTC TGTTGCCGGT CTTGCGATGA TTATCATATA ATTTCTGTT AATTACGTTA

Supplemental Figure S4. F-SHMT08cΔ+L129A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

4801 GAGTCCCGCA ATTATACATT TAATACGCGA TAGAAAACAA AATATAGCGC GCAAACCTAGG
 4861 ATAATTATC GCGCGCGGTG TCATCTATGT TACTAGATCC GATGATAAGC TGTCAAACAT
 4921 GAGAATTAAT TCGTAATCAT GTCATAGCTG TTTCTGTGT GAAATTGTTA TCCGCTACA
 4981 ATCCACACA ACATACGGAC CGGAAGCATA AAGTGTAAAG CCTGGGGTGC CTAATGAGTG
 5041 AGCTAACTA CATTAATTGC GTTGCCTCA CTGCCCGCTT TCCAGTCGGG AAACCTGTCG
 5101 TGCCAGCTGC ATTAATGAAAT CGGCCAACCGC CGGGGGAGAG CGGGTTGGC TATTGGCTAG
 5161 AGCAATTGG CGTTAATTCA GTACATTAAA AACGTCGCAGA ATGTGTTATT AAGTTGCTA
 5221 AGCGCTAATT TGTTCACACC ACAATATATC CTGCCACAGC CCAGCCAACA GCTCCCCGAC
 5281 CGGCAGCTGC GCACAAAATC ACCACTCGAT ACAGCGAGCG CATCAGTCGG GGACGGCTC
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 7081 GCGTTTGTG GGCGCTTGTG TACATGTTTCTC TTCTCTGCGT TATCTCTGTA TTCTGTG
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 8101 CGCACGGTGA AACAGAACCTT CTTGAACCTC CGCGCCTG CACTGCTC GTAGATGCTC
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 8221 CGGGCGATGC CGGGATCGAT CAAAAGTAA TCGGGGTGAA CGTCAGCAC GTCGGGGTTC
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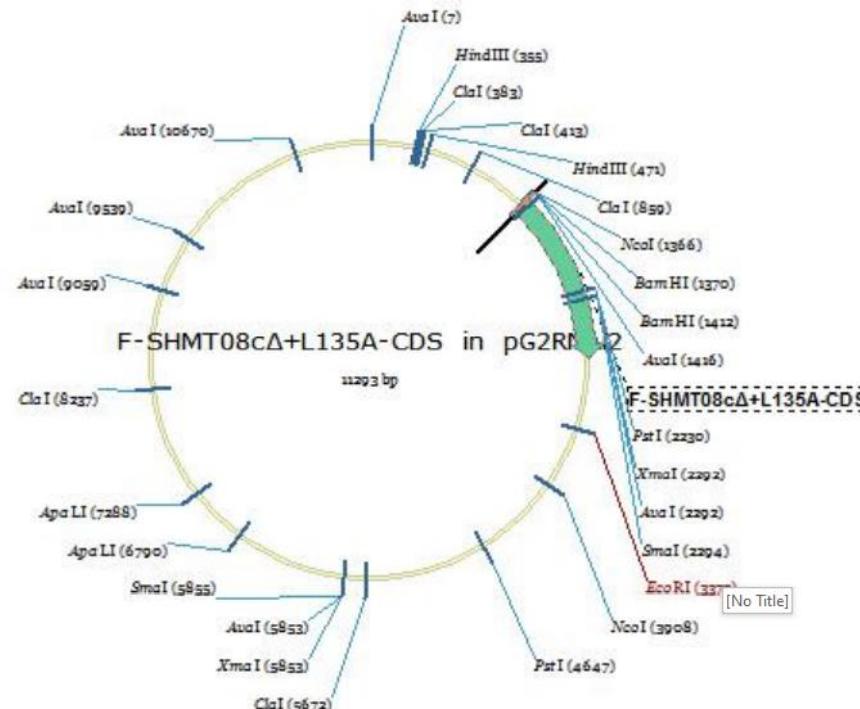
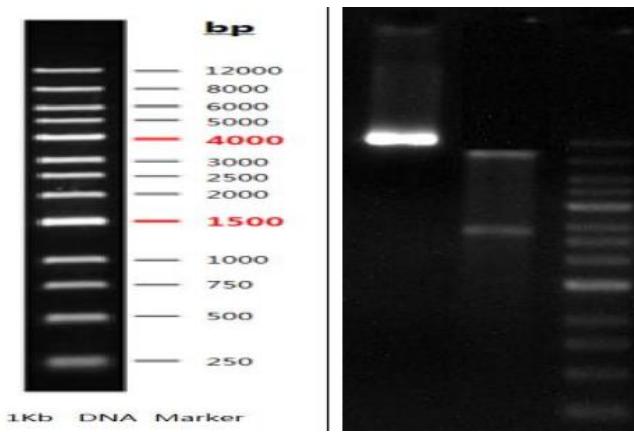
Supplemental Figure S4. F-SHMT08cΔ+L129A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

Gene Name F-SHMT08cΔ+L135A-CDS

Cloning Vector pG2RNAi2

Length (bp) 1430

Cloning Sites Ascl-AvrlI



Supplemental Figure S5. F-SHMT08cΔ+L135A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

Detailed Sequence of the Whole Construct:

1 TTGATCCGA GGGAAACCT GTGGTTGGCA TGCACATACA AATGGACGAA CGGATAAAC
61 TTTTCACGCC CTTTAAATA TCCGTTATTG TAATAAACGC TCTTTCTCT TAGGTTTACC
121 CGCCAATATA TCCTGTAAA CACTGATAGT TTAAACTGAA GGCGGGAAAC GACAATCTGA
181 TCCAAGCTCA AGCTCATTG TGCGCAACTG TTGGGAAGGG CGATCGGTGC
241 GGGCCTCTTC GCTATTACGC CAGCTGGCGA AAGGGGGATG TGCTGCAAGG CGATTAAGTT
301 GGGTAACGCC AGGGTTTCC CAGTCACGAC GTTGTAAAAC GACGGCCAGT GCCAAGCTTA
361 TTACCTGTT ATCCCTAGAT ATCGATTTG GCTACCTAA GGTAGCCAAA ATCGATCACT
421 AGTGCGGCCG CGGGCCCAAT ATAACAACGA CGTCGTAACA GATAAAGCGA AGCTTGAGG
481 TGCATGTGAC TCCGTCAAGA TTACGAAACC GCCAACTACC ACGCAAATTG CAATTCTCAA
541 TTTCTCTAGAA GGACTCTCCG AAAATGCATC CAATACCAAA TATTACCGT GTCATAGGCA
601 CCAAGTGACA CCATACATGA ACACGGTCA CAATATGACT GGAGAAGGGT TCCACACCTT
661 ATGCTATAAA ACGCCCCACA CCCCTCCTCC TTCCCTCGCA GTTCAATTCC AATATATTCC
721 ATTCTCTCTG TGTATTTCCC TACCTCTCCC TTCAAGGTTA GTCGATTCT TCTGTTTTTC
781 TTCTCGTTC TTTCCATGAA TTGTGTATGT TCTTGATCA ATACGATGTT GATTTGATTG
841 TGTTTGTGTT GGTTTCATCG ATCTTCAATT TTCATAATCA GATTCAGCTT TTATTATCTT
901 TACAACAACG TCCTTAATTG GATGATTCTT TAATCGTAGA TTTGCTCTAA TTAGAGCTTT
961 TTCATGTCAG ATCCCTTAC AACAAAGCCTT AATTGTTGAT TCATTAATCG TAGATTAGGG
1021 CTTTTTCAT TGATTACTTC AGATCCGTT AACGTAACCA TAGATCAGGG CTTTTTCATG
1081 AATTACTTCA GATCCGTTAA ACAACAGCCT TATTTTTAT ACTTCTGTGG TTTTCAAGA
1141 AATTGTTCAAG ATCCGTTGAC AAAAACCTT ATTGTTGAT TCTATATCGT TTTTCGAGAG
1201 ATATTGCTCA GATCTGTTAG CAACTGCCCT GTTGTGAT TCTATTGCCG TGGATTAGGG
1261 TTTTTTCA CGAGATTGCT TCAGATCCGT ACTTAAGATT ACGTAATGGA TTTTGATTCT
1321 GATTTATCTG TGATTGTTGA CTCGACAGCG GCCGCACCGG CGCGCCATGG ATCCAGTAAG
1381 CGTGTGGGGT AACACGCCCT TGGCGACGGT GGATCCCGAG ATCCATGACC TCATCGAGAA
1441 GGAGAAGCGC CGTCAATGCC GCGGAATCGA GCTCATCGCC TCCGAGAACT TCACCTCCTT
1501 CGCCGTCATC GAGGCCCTCG GCAGCGCTCT CACGAACAAA TACTCCGAGG GCATGCCGGG

1561	CAACCGCTAC	TACGGCGGCA	ATGAATACAT	CGACCCAGATC	GAAAACCTCT	GCGGCTCACG
1621	CGCCCTCCAA	GCCTTCCCACC	TCGACGCCCA	ATCCTGGGGC	GTCAACGTCC	AGCCCCACTC
1681	CGGCTCCCCG	GCCAACTTCG	CCGCCTACAC	CGCCGTCTC	AACCCCCACG	ACCGCATCAT
1741	GGGGCTAGAT	CTCCGCTCCG	CGGGCCACGC	TACCCACGGC	TACTACACCT	CCGGCGGAAA
1801	GAAGATCTCC	GCCACCTCCA	TTTACTTCGA	GAGTCTCCCT	TACAAGGTAA	ACTCCACAC
1861	CGGCTACATC	GACTACGACC	GCTTGBAAGA	AAAAGCCCTA	GACTTCAGGC	AAAAACTCAT
1921	AATCTGCGGT	GGCAGCGCGT	ACCCCTCGCA	TTGGGACTAC	AAACGTTCA	GGGAAGTCGC
1981	TGATAAGTGC	GGAGCATTGC	TTCTCTGCBA	CATGGCGCAC	ACTAGCGGCC	TTGTGGCCGC
2041	GCAGGAAGTG	AACAGCCCC	TCGAGTATTG	CGACATTGTG	ACCACCAACGA	CTCACAAAGAG
2101	CTTGCGGGGC	CCACGTGCGG	GGATGATCTT	TTACCGGAAG	GGCCCCAAGC	CGCCGAAGAA
2161	GGGCAGCGC	GAGAACGCGG	TTTATGATT	CGAGGAAACAG	ATTAACCTCG	CGGTGTTCCC
2221	TTCGCTGCAG	GGTGGGGCCC	ACAACCCCA	GATCGGTGCT	CTCGCCGTGG	CGCTGAAGCA
2281	GGCCGCGTCG	CCCCGGTTA	AGGCCAACGC	GAAGCAGGTT	ARAGCCGAACG	CCGTTGCGCT
2341	TGAAAATAC	TTGATGGGA	AAAGGTACAG	CCCTGTCACT	GGCGGAACGG	AGAACCATCT
2401	TGTTTTGTGG	GATCTGAGAC	CTCTTGGATT	GACTGGGTAT	AAAGTGGAGA	AACTCTGTGA
2461	TCTCTGTAAAC	ATTACTGTTA	ACAAGAACGC	TGTTTTGGT	GATAGCAGTG	CTTGCCCCC
2521	TGGTGGAGTC	CGAATTGGT	CCCCCTGCCAT	GACTTCTAGG	GGTTGGTTG	AAAAAGACTT
2581	TGAGCAGATT	GGTGAGTTCC	TTCACCGTGC	TGTGACTCTC	ACACTGGAGA	TCCAGAAGGA
2641	GCATGGCAA	CTTCTCAAGG	ATTTCAACAA	GGGTCTCGTC	AACAACAAGG	CTATTGAAGA
2701	TCTCAAAGCT	GATGTTGAGA	AGTTCTCTGC	CTTGTGTTGAC	ATGCCCTGGCT	TCCTGGTATC
2761	TGAAATGAAG	TACAAGGATT	AGCCTAGGTT	CGAGTATTAT	GGCATTTGGGA	AAACTGTTT
2821	TCTTGTACCA	TTTGTGTC	TTGTAATTTA	CTGTGTTTT	TATTCGGTT	TCGCTATCGA
2881	ACTGTGAAT	GGAAATGGAT	GGAGAAGAGT	TAATGAATGA	TAATGGCTTT	TTGTTCATTC
2941	TCAAATTAAAT	ATTATTTGTT	TTTCTCTTA	TTTGTGTTG	GTTGAATTG	AAATTATAAG
3001	AGATATGCAA	ACATTTGTT	TTGAGTAAA	ATGTGTCAA	TCGTGGCTC	TAATGACCGA
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3121	AATATATTTT	CAGACCTAGA	AAAGCTGCAA	ATGTTACTGA	ATACAAGTAT	GTCCTCTTGT
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3301	TAATGCATT	TATGACTTGC	CAATTGATTG	ACAACATGCA	TCAATCCCG	GTTATGACTC
3361	TCTTAAGAGA	GTCATGAATT	CGAGCTTCCA	GAAGGTAATT	ATCCAAGATG	TAGCATCAAG
3421	AATCCAATGT	TTACGGAAA	AACTATGGAA	GTATTATGT	AGCTCAGCAA	GAAGCAGATC
3481	AATATGCGC	ACATATGCAA	CCTATGTTCA	AAAATGAAGA	ATGTACAGAT	ACAAGATCCT
3541	ATACTGCCAG	AATAACGAGA	AGAATACGTA	GAATTGAAA	AGAAGAAC	AGGCGAAGAA
3601	AAGAATCTT	AAGACGTAAG	CACTGACGAC	AACAAATGAAA	AGAAGAACGAT	AAGGTCGGTG
3661	ATTGTGAAAG	AGACATAGAG	GACACATGTA	AGGTGGAAA	TGTAAGGGCG	AAAAGTAACC
3721	TTATCACAAA	GGAATCTTAT	CCCCCACTAC	TTATCCTTTT	ATATTTTCC	GTGTCATTT
3781	TGCCCTTGAG	TTTCCTATA	TAAGGAACCA	AGTTCCGGCAT	TTGTGAAAAC	AAGAAAAAAAT
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3901	TGTGATCCAT	GGTGAGCAAG	GGCGAGGAGC	TGTTCACCGG	GGTGGTGC	ATCCTGGTGC
3961	AGCTGGACGG	CGACGTTAAC	GGCCACAAGT	TCAGCGTGC	CGGCGAGGGC	GAGGGCGATG
4021	CCACCTACGG	CAAGCTGACC	CTGAAGTTCA	TCTGCACCCAC	CGGCAAGCTG	CCCGTGCCT
4081	GGCCCACCC	CGTGACCAACC	TTCACCTAGC	GGGTGCAGTG	CTTCAGCCGC	TACCCCGACC
4141	ACATGAAGCA	GCACGACTTC	TTCAAGTCCG	CCATGCCGA	AGGCTACGTC	CAGGAGCGCA
4201	CCATCTTCTT	CAAGGACGAC	GGCAACTACA	AGACCCCGCG	CGAGGTGAAG	TTCGAGGGCG
4261	ACACCCCTGGT	GAACCGCATC	GAGCTGAAGG	GCATCGACTT	CAAGGAGGAC	GGCAACATCC
4321	TGGGGCACAA	GCTGGAGTAC	AACTACAACA	GCCACAACTG	CTATATCATG	GCCGACAAGC
4381	AGAAGAACGG	CATCAAGGTG	AACTTCAAGA	TCCGCCACAA	CATCGAGGAC	GGCAGCGTGC
4441	AGCTCGCGA	CCACTTACCG	CAGAACACCC	CCATCGCGGA	CGGGCCCCGTG	CTGCTGCCCG
4501	ACAACCACTA	CCTGAGCACC	CAGTCGGCCC	TGAGCAAAGA	CCCCAACGAG	AAGCGCGATC
4561	ACATGGTCT	GCTGGAGT	GTGACCGCCG	CGGGGATCAC	TCACGGCATG	GACGAGCTGT
4621	ACAAGTAAAG	CGGGCGCCCG	GCTGCAGATC	GTTCAAACAT	TGGAATATAA	AGTTCTTAA
4681	GATTGAATCC	TGTTGCCGGT	CTTGCAGATG	TTATCATATA	ATTTCTGTG	AATTACGT
4741	AGCATGTAAAT	AATTAACATG	TAATGCATGA	CGTTATTAT	GAGATGGGTT	TTTATGATTA

Supplemental Figure S5. F-SHMT08cΔ+L135A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

4801 GAGTCCCGCA ATTATACATT TAATACGCGA TAGAAAACAA AATATAGCGC GCAAACCTGG
 4861 ATAATTATC GCGCGCGGTG TCATCTATGT TACTAGATCC GATGATAAGC TGTCAAACAT
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 4981 ATCCACACA ACATACGAGC CGGAAGCATA AAGTGTAAAG CCTGGGGTGC CTAATGAGTG
 5041 AGCTAACCTA CATTAATTGC GTTGCCTCA CTGCCCGCTT TCCAGTCGGG AAACCTGTCG
 5101 TGCCAGCTGC ATTAATGAAAT CGGCCAACCGC CGGGGGAGAG CGGGTTGGC TATTGGCTAG
 5161 AGCAATTGG CGTTAATTCA GTACATTAAA AACGTCGCAGA ATGTGTTATT AAGTTGCTA
 5221 AGCGCTAATT TGTTCACACC ACAATATATC CTGCCACAGC CCAGCAACA GCTCCCCGAC
 5281 CGGCAGCTGC GCACAAAATC ACCACTCGAT ACAGCGAGCG CATCAGTCGG GGACGGCTC
 5341 AGCGGGAGAG CGGTGTAAG GCGGAGACT TTGCTCATGT TACCGATGTC ATTGCGAAGA
 5401 AGCGCAACTA AGCTGCCGGG TTGAAACAC GGATGATCTC GCGGGAGGTA GATGTTGAT
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 5581 TAGGCCGCGA TTAAATTCCA ACATGGATGC TGATTATATG GGGTATAAT GGCTCGCGA
 5641 TAATGCTGGG CAATCAGGT CGAACATCTA TCGATTGTTA GGGAAAGCCC ATGCCGCGA
 5701 GTTGTTCG AAACATGGCA AAGGTAGCGT TGCCAATGAT GTTACAGATG AGATGGTC
 5761 ACTAAACTGG CTGACGGAAT TTATGCCCTC TCCGACATC AAGCATTTC TCCGACTCC
 5821 TGATGATCGA TGGTACTCA CCACTGCGAT CCCGGGAAA ACAGCATTCC AGGTATTAGA
 5881 AGAATATCCT GATTCAAGTG AAAATATTGT TGATGCGTC GCACTGTTT TGCGCCGGT
 5941 GCATTGATT CCGTGTGTA ATTGCTCTT TAACCGCAT CGCGTATTTC GTCTCGCTC
 6001 GGCGCAATCA CGAACATATA ACGGTTGGT TGATGCGAGT GATTTGATG ACGAGCGTAA
 6061 TGGCTGGCT GTGAACAAG TCTGGAAAGA ATGCATAAA CTTTTGCCAT TCTCACCGA
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 6181 AATAGTTGTG ATTGATGTTG GACGAGTCG AATCGCAGAC CGATACCGG ATCTTGC
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 6421 TGAGCGTAG ACCCGTAGA AAAGATCAA GGATCTCTT GAGATCCTT TTTCTGCGC
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 6661 ACATACCTCG CTCTGTAAT CTGTTACCA GTGCTGTC CGAGTGGCA TAAGTCTGT
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 6961 TATCTTATA GTCTGTCGG GTTCTGCCAC CTCTGACTT AGCCTGATT TTGATGATC
 7021 TCGTCAGGGG GGGGGAGCTT ATGGAAAAC GCGAGCAACG CGGGCTTCTG ACGGTTCTG
 7081 GCGTTTGTG GGCGCTTGTG TACATGTTT TTTCTGTGTT TATCTGCGT
 7141 AACCGTATTA CGCCCTTGTG GTGAGCTGAT ACCGTCGCC CGAGCGAAC GACCGAGCGC
 7201 AGCGAGTCAG TGAGCGAGGA AGCGGAAGAG CGCTGTATGC GGTATTCTCT CTTACCG
 7261 CTGTCGGTGA TTTCACACCG CATATGTTGCA ACTCTCTAGA CAATCTGCCA
 7321 TAGTTAAGCC AGTATACACT CGCTATCGC TACGTGACTG GGTCTAGGT CGCCGCC
 7381 ACCCCCCAAC ACCCGTGCAC CGCCCTGTGAC GGGCTGTCT GCTCCCGCA TCCGCTTACA
 7441 GACAAGCTGT GACCGTCTCC GGGAGCTGCA TGTGTCAGAG GTTTCACCG TCATCACC
 7501 AACCGCGGAG CGACGGTGC TTGATGTGGG CGCGCGCGGT CGAGTGGCA CGGCGCG
 7561 TGTCCCGGCC CTGTTAGATT CCTGGGGCTT AGGCCAGCCA TTTTGGAGCG CGACCG
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 7861 TTCCGGTCC CAATGTACCG CTTGGGGTTC CCAATGTACCG AGGAAAGAGA
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 7981 GAACCGCGG ATGCTTCGCC CTCGATCAGG TTGCGGTAGC GCATGACTAG GATCGGG
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 8101 CGCACGGTGA AACAGAACCTT CTTGAACCTC CGCGCCTG CACTGCTC GTAGATC
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 8221 CGGGCGATGC CGGGATCGAT CAAAAGTAA TCGGGGTGAA CGTCAGCAC GTCGGGG
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 8581 TCCCGGTATC GGGTATGGA TTGCGGTAGA TGGGAAACCGG CGATCAGTAC
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 8881 CGGGATTCTT TGCGGATTTCG ATCAGCGGC
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 9001 CCCACGCCCG CGCCGATTTC TACCGGGCCG GATGGTTGC GACCGTCA
 9061 GGGCTTGGGG TGTCGACTGC CATTGCGAGG CGCGCAGACA
 9121 CCAACGCCCG GTTCTCCCA ACATGGGCA
 9181 ATTTCCATG CGGCCCTT TAGCGCTAA
 9241 TTTACTCTGG TAGCTGCGCG ATGTTAC
 9301 GTACCGCTG CACTTCAGC TTGTTGTGAT
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 9421 GACGCCGGC ACTTAGCGTG
 9481 AATGAGTTT GATTAATT
 9541 GGGTCTGAT TCAAGAACGG
 9601 CGTATACGG GACTCAAGA
 9661 GCGATGCGC GTGCTTGTG
 9721 CGTACCTCA ATGCGCTG
 9781 AGGGCTTGGC TGACCGGAA
 9841 GTCCGCCCGC TGCGCTG
 9901 GTCCGGTCA ATCGTGGG
 9961 GGGCGCCAA TCGCGGCCAC
 10021 GGGAGTTGC AGGGCGCG
 10081 CTGTTAAAGT ACAGCGATAA
 10141 CGCATCATAT ACCGAGCGAC
 10201 TTTAGACGGC GGGCTCG
 10261 GCATCAGACA AACCGCCAG
 10321 TCGAACACGT ACCCGCCGC
 10381 TCGCTCTGG CGTGTG
 10441 CGGCCAGGGC GTCACTGCG
 10501 CGGTGGCGT CACTCTCG
 10561 CAACGAGTCG AGCCGCTCT
 10621 GCGGATCTG TGCGGGGGTG
 10681 CGGCCCTCGGG CGCCGCTCG
 10741 CGCGAACAC GGTCAACACC
 10801 CCAGCTACG CAGGCCCGCG
 10861 GGGTCTGCG CGGCCAGCG
 10921 GGTCAAGCAT CTCGGCG
 10981 ACAGCTGGT GCACGGCG
 11041 CGGTGCTGAC CGGGCGATAG
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 11281 GGATCAAAGT ACT

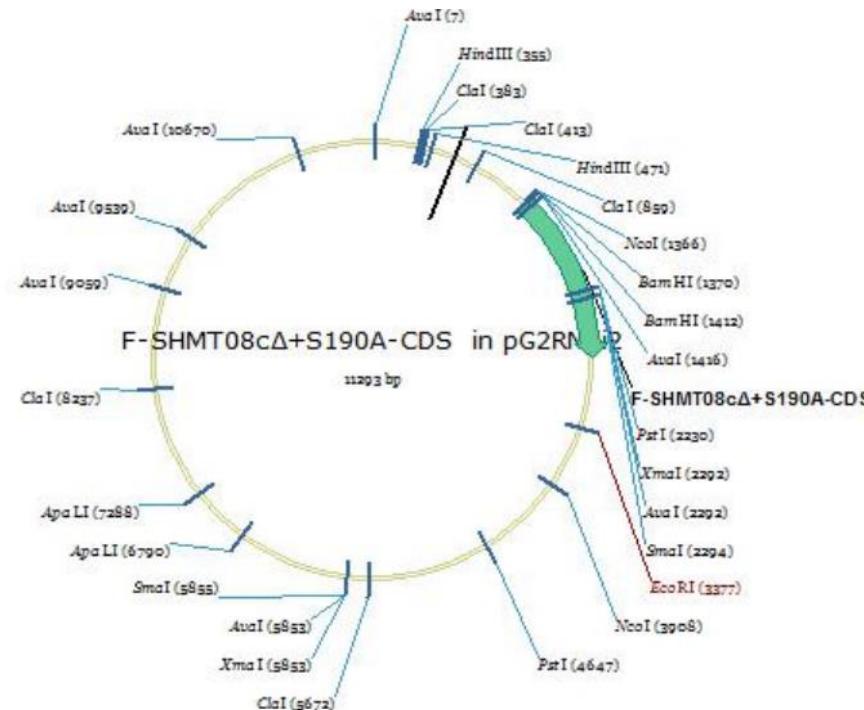
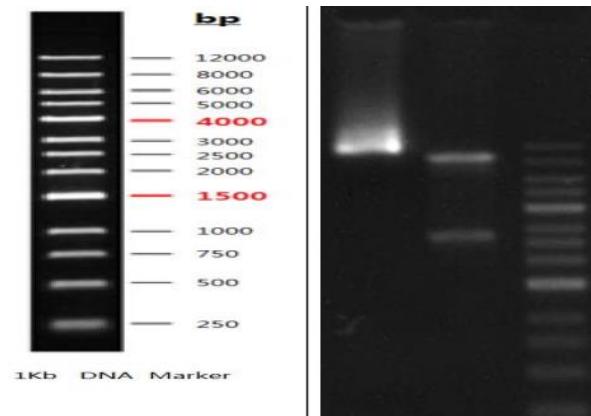
Supplemental Figure S5. F-SHMT08cΔ+L135A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

Gene Name F-SHMT08cΔ+S190A-CDS

Cloning Vector pG2RNAi2

Length (bp) 1430

Cloning Sites Ascl-AvrlI



Supplemental Figure S6. F-SHMT08cΔ+S190A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

Detailed Sequence of the Whole Construct:

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1 TTGATCCGA GGGGAACCCT GTGGTTGGCA TGCACATACA AATGGACGAA CGGATAAACCC  
61 TTTTCACGCC CTTTTAAATA TCCGTTATTG TAATAAACGC TCTTTCTCT TAGGTTTACCC  
121 CGCCAATATA TCCTGTCAAA CACTGATAGT TTAAACTGAA GGCGGGAAAC GACAATCTGA  
181 TCCAAGCTCA AGCTCATTG CCAATTGAGGC TGCGCAACTG TTGGGAAGGG CGATCGGTGC  
241 GGGCCTCTTC GCTATTACGC CAGCTGGCGA AAGGGGGATG TGCTGCAAGG CGATTAAGTT  
301 GGGTAACGCC AGGGTTTCC CAGTCACGAC GTTGTAAAAC GACGGCCAGT GCCAAGCTTA  
361 TTACCCCTGTT ATCCCTAGAT ATCGATTTG GCTACCTTAA GGTAGCCAAA ATCGATCACT  
421 AGTGCGGCCG CGGGCCCAAT ATAACAAACGA CGTCGTAACA GATAAAGCGA AGCTTGAGG  
481 TGCATGTGAC TCCGTCAAGA TTACGAAACC GCCAACTACC ACGCAAATTG CAATTCTCAA  
541 TTTCCTAGAA GGACTCTCCG AAAATGCATC CAATACCAAA TATTACCCGT GTCATAGGCA  
601 CCAAGTGACA CCATACATGA ACACGCGTCA CAATATGACT GGAGAAGGGT TCCACACCTT  
661 ATGCTATAAA ACGCCCCACA CCCCTCCTCC TTCCCTCGCA GTTCAATTCC AATATATTCC  
721 ATTCTCTCTG TGTATTTCCC TACCTCTCCC TTCAAGGTTA GTCGATTTCT TCTGTTTTTC  
781 TTCTTCGTTT TTTCCATGAA TTGTGTATGT TCTTGATCA ATACGATGTT GATTGATTG  
841 TGTTTGTTT GGTTTCATCG ATCTTCAATT TTCATAATCA GATTCAAGCTT TTATTATCTT  
901 TACAACAAACG TCCTTAATT GATGATTCTT TAATCGTAGA TTTGCTCTAA TTAGAGCTT  
961 TTCAATGTCAG ATCCCTTAC AACAAGCCTT AATTGTTGAT TCATTAATCG TAGATTAGGG  
1021 CTTTTTCAT TGATTACTTC AGATCCGTTA AACGTAACCA TAGATCAGGG CTTTTTCATG  
1081 AATTACTTCA GATCCGTTAA ACAACAGCCT TATTTTTAT ACTTCTGTGG TTTTCAAGA  
1141 AATTGTTCAAG ATCCGTTGAC AAAAAGCCTT ATTCGTTGAT TCTATATCGT TTTTCGAGAG  
1201 ATATTGCTCA GATCTGTTAG CAACTGCCTT GTTGTGAT TCTATTGCCG TGGATTAGGG  
1261 TTTTTTTCA CGAGATTGCT TCAGATCCGT ACTTAAGATT ACGTAATGGA TTTTGATTCT  
1321 GATTTATCTG TGATTGTTGA CTCGACAGCG GCCGCACCGG CGCGCCATGG ATCCAGTAAG  
1381 CGTGTGGGGT AACACGCCCT TGGCGACGGT GGATCCCAGG ATCCATGACC TCATCGAGAA  
1441 GGAGAAGCGC CGTCAATGCC GCGGAATCGA GCTCATGCC TCCGAGAACT TCACCTCCTT
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1501	CGCCGTCACT	GAGGCCCTCG	GCAGCGCTCT	CACGAACAAA	TACTCCGAGG	GCATGCCGGG
1561	CAACCGTAC	TACGGCGGCA	ATGAATAACAT	CGACCAGATC	AAAAACCTCT	GCCCCTCACG
1621	CGCCCTCAA	GCCTTCCACC	TCGACGCCA	ATCCTGGGGC	GTCAACGTCC	AGCCCTACTC
1681	CGGCTCCCCG	GCCAACCTCG	CCGCCTACAC	CGCCGTCCCT	AACCCCCACG	ACCGCATCAT
1741	GGGGCTAGAT	CTCCGCTCCG	GGGGCACCTC	CACCCACGGC	TACTACACCT	CCGGCGGAAA
1801	GAAGATCTCC	GCCACCTCCA	TTACTCTCGA	GAGTCTCCCT	TACAAGGTA	ACTCCACAC
1861	CGGCTACATC	GACTACGACC	GCTGGAAAGA	AAAAGCCCTA	GACTTCAGGC	AAAACACTCAT
1921	AATCTGCCGT	GGCGCTCGGT	ACCCCTCGCA	TTGGGACTAC	AAACGTTCA	GGGAAGTCGC
1981	TGATAAGTGC	GGAGCATTGC	TTCTCTCGA	CATGGCGCAC	ACTAGCGGCC	TTGTGGCCGC
2041	GCAGGAAGTG	AACAGCCCC	TCGAGTATTG	CGACATTGTG	ACCACCAACGA	CTCACAAAGAG
2101	CTTGCGGGGC	CCACGTGCGG	GGATGATCTT	TTACCGGAAG	GGCCCCAAGC	CGCCGAAGAA
2161	GGGGCAGCGC	GAGAACGCGG	TTTATGATTT	CGAGGACAAG	ATTAACCTCG	CGGTGTTCCC
2221	TCGCTGCCAG	GGTGGGGCCC	ACAAACCCCA	GATCGGTGCT	CTCGCCGTGG	CGCTGAAGCA
2281	GGCCGCGTCG	CCCGGGTTTA	AGGCTACGC	GAAGCAGGTT	AAGGCGAACCG	CCGTTGCGCT
2341	TGGAAAATAC	TTGATGGGGA	AAAGGTACAG	CCTTGTCACT	GGCGGAACGG	AGAACCATCT
2401	TGTTTTGTGG	GATCTGAGAC	CTCTTGGATT	GACTGGGTAT	AAGGTGGAGA	AACTCTGTGA
2461	TCTCTGTAAC	ATTACTGTTA	ACAAGAACGC	TGTTTTGGT	GATAGCAGTG	CCTTGGCCCC
2521	TGGTGGAGTG	CGAATTGGTG	CCCCCTGCCAT	GACTTCTAGG	GGTTGGTTG	AAAAAGACTT
2581	TGAGCAGATT	GGTAGGTCTC	TTCACCGTGC	TGTGACTCTC	ACACTGGAGA	TCCAGAACGGA
2641	GCATGGCAA	CTTCTCAAGG	ATTCAACAA	GGGTCTCGTC	AACAAACAAAGG	CTATTGAAGA
2701	TCTCAAAGCT	GATGTTGAGA	AGTTCTCTGC	CTTGTGAC	ATGCTGGCT	TCCCTGGTATC
2761	TGAAATGAAG	TACAAGGATT	AGCCTAGGTT	CGAGTATTAT	GGCATGGGA	AAACTGTTT
2821	TCTTGTACCA	TTTGGTGTG	TTGTAATTTC	CTGTTTTT	TATTCGGTTT	TCGCTATCGA
2881	ACTGTGAAAT	GGAAATGGAT	GGAGAAAGAGT	TAATGAATGA	TATGGTCCTT	TTGTTCATTC
2941	TCAAATTAAAT	ATTATTTGTT	TTTCTCTTA	TTTGTGTTG	GTTGAATTG	AAATTATAAG
3001	AGATATGCAA	ACATTTGTT	TTGAGTAAAA	ATGTGTAAA	TCGTGCCCTC	TAATGACCGA
3061	AGTTAATATG	AGGAGTAAA	CACTTGTAGT	TGTACCATTA	TCCTTATTCA	CTAGGCAACA
3121	AATATTTATG	CAGACCTAGA	AAAGCTGCAA	ATGTTACTGTA	ATACAAGTAT	GTCCCTTTGT
3181	GTTTTAGACA	TTTATGACT	TTCTTTATG	TAATTTCCA	GAATCCTGT	CAGATTCTAA
3241	TCATTGCTT	ATAATTATAG	TTTACTCAT	GGATTGTTAG	TTGACTATGA	AAATATTTT
3301	TAATGCAATT	TATGACTTGC	CAATTGATTG	ACAACATGCA	TCAATCCGCG	GTTATGACTC
3361	TCTTAAGAGA	GTCATGAATT	CGAGCTTCCA	GAAGGTAATT	ATCCAAGATG	TAGCATCAAG
3421	AATCCAATGT	TTACGGAAA	AACTATGGAA	GTATTATGTG	AGCTCAGCAA	GAAGCAGATC
3481	AATATGCGGC	ACATATGCAA	CCTATGTTCA	AAAATGAAGA	ATGTACAGAT	ACAAGATCCT
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3601	AAGAACCTTG	AAGACGTAAG	CACTGACGAC	AACAATGAAA	AGAAGAACAT	AAGGTGGTG
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4201	CCATCTTCTT	CAAGGACGAC	GGCAACTACA	AGACCCGGC	CGAGGTGAAG	TCGAGGGCG
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4321	TGGGGCACAA	GCTGGAGTAC	AACTACAACA	GCCACAACGT	CTATATCATG	GCCGACAAGC
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4621	ACAAGTAAAG	CGGCCGCCCG	GCTGCAGATC	GTTCAAACAT	TTGGCAATAA	AGTTCTTAA
4681	GATTGAATCC	TGTTGCCGGT	CTTGCATGA	TTATCATATA	ATTCTGTTG	AATTACGTTA

Supplemental Figure S6. F-SHMT08cΔ+S190A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

4801	GAGTCCCGCA	ATTATAACATT	TAATACGCGA	TAGAAAACAA	AATATAGCGC	GCAAACCTAGG		8041	GCCCTGCCCG	CCTCCCTCCTT	CAAATCGTAC	TCCGGCAGGT	CATTGACCC	GATCAGCTTG
4861	ATAAAATTATC	GCGCGCGGTG	TCATCTATGT	TAATAGATCC	GATGATAAGC	TGTCAAACAT		8101	CGCACGGTGA	AACAGAACCTT	CTTGAACCTC	CCGGCCTG	CACTGCCTC	GTAGATCGTC
4921	GAGAATTAAT	TCGTAATCAT	GTCATAGCTG	TTTCTGTGT	GAAATTGTTA	TCCGCTACA		8161	TTGAACAACC	ATCTGGCTTC	TGCCCTGCCT	GGGGCGGGC	GTGCCAGGG	GTAGAGAAAA
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5041	AGCTAACTCA	CATAATTGTC	GTTCGCTCA	CTGCCCGCTT	TCCAGTCGG	AAACCTGTCG		8281	TTGCCCTCTG	TGATCTCGCG	TCAGTAGCT	CGATCTCGAT	TCACTCCGGC	
5101	TGCCAGCTGC	ATTAAATGAAT	CGGCCAACCG	CGGGGGAGAG	CGGGTTGGC	TATTGGCTAG		8341	CGCCCGGTTT	CGCTCTTTC	GATCTTGTAG	CGGCTAAC	AGGCTTAC	CTCGGATACC
5161	AGCAATTGCG	CGTTAATTCA	GTACATTAAA	AACGTCGC	ATGTGTTATT	AAGTTGCTA		8401	GTCACCAGGC	GGCGGTTCTT	GGCCTTCTTC	GTACGCTGCA	TGGCAACGTG	CGTGGTGT
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5821	TGATGATCGA	TGTTTACTCA	CCACTCGAT	CCCCGGGAA	ACAGCATT	AGGTATTAGA		9061	GGGCTTGGG	TGTCGACT	CATTGAGG	CCGGCAGACA	ACCCAGCGC	TTACGCTTG
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5941	GCATTGATT	CCTGTTGTA	ATTGCTCTT	TAACCGCAT	CGCGTATT	GTCTCGCTC		9181	ATTTCATG	CCGCCTC	TAGCGCTAA	AATTCACTA	CTCATT	CATTGCTCA
6001	GGCGCAATCA	CGAATGAATA	ACGGTTGGT	TGATGCGAGT	GATTTGATG	ACGAGCGTAA		9241	TTTACTCTGG	TAGCTGCG	ATGTTAC	ATAGCAGCT	GGTAATGTC	TTGCCCTG
6061	TGGCTGGCT	GTTGAACAAG	TCTGGAAAGA	AATGCATAAA	CTTTGCCAT	TCTCACCGA		9301	GTACCCGCTG	CACTTC	TAGGTTGAT	CCCTCC	CAACTGAAAG	TTGACCGCT
6121	TTCACTGTC	ACTCATGGTG	ATTTC	TGATGATC	AACTTGTG	AGGGGAAATT		9361	TCTGCGCTGG	CGTGTGTC	AGGCGG	ACGTCGAC	CTTGCCTG	CGTCGCGCTG
6181	AATAGTTGT	ATTGATGTTG	GACGAGTCG	AATCGCAGAC	CGATACCGG	ATCTTGCAT		9421	GACGCCGGC	ACTTAGC	TTTG	TGCTATT	CTCTTAC	CATTAAC
6241	CCTATGGAC	TGCGCTGGT	AGTTTCTC	TTCA	TACAG	AAACGCC		9481	AATGAGTTT	GATTA	TTT	CAGCGCAG	TGCGGGCAG	CGTCGCC
6301	TGGTATTGAT	AATCCTGATA	TGAATAAATT	GCAGTTCAT	TTGATGCTG	ATGAGTTTT		9541	GGGTTCTGAT	TCAAGAAC	GGG	CGCAGT	TGCGGGCAG	TGACGGCTG
6361	CTAACGATTA	ATTCACTGATC	CTGCATGAC	AAAATCCCT	AACGTGAGT	TTCGTCTT		9601	CGTATACGG	GACT	CCAGA	TGGCGAC	GTACCCGG	CAACCTCAC
6421	TGAGCGTCAG	ACCCGCTAGA	AAAGATCAA	GGATCTCTT	GAGATC	TTTCTGCG		9661	GGCGATGCG	GTG	CCCTTGA	TCGCGCCG	CACGCAAA	CGCTCCATC
6481	TAATCTGCT	GCTTGAACAA	AAA	AAAACCCA	CCGCTTACAG	CGGTGTTT		9721	CGTACCTCA	ATG	CGCTG	TAACCA	CACCGAGTC	ATATGTC
6541	CAAGAGCTAC	CAACTCTTT	TCCGAGGTA	ACTGGCTC	CGAGAGCGA	GATACCAAAT		9781	AGGCGT	TG	CCACGGAA	TCAGCAGCA	GTCGGCTG	TTGATCGG
6601	ACTGCTTC	TAGTGTAGCC	GTAGTTAGGC	CACCACTC	AGAAC	TCTGT		9841	GTCCGCCG	TGGG	CGCTC	TGCGATC	TACGAGCT	CGCCGCC
6661	ACATACCTCG	CTCTGCTAAT	CTGTTACCA	GTGTCGTCG	CCAGTGG	TAAGTGTG		9901	GTCCGGTCA	ATC	TGCGG	GTCGATGCC	GACAACCGT	AGCGGTTGAT
6721	CTTACGGGT	TGGACTCAAG	ACGATAGTTA	CGGATAAGG	CGCAGCG	GGGTGAA		9961	GGCCGCC	AA	TGCGG	CA	TCGGAATC	CGTGGCCCC
6781	GGGGCTTCTG	GCACACAGCG	CAAGCTTGGAG	CGAACGAC	ACACCGA	GAGATACTTA		10021	GGCAGTTG	AGG	GGCGGG	CTAGATGG	TCGCGATG	GTCTTGCCT
6841	CAGCGTGAGC	TATGAGAAAG	CGCCACGCTT	CCCGAAGGGA	GAAGAGCGG	CAGGTATCCG		10081	CTGTTAA	AGAC	GAT	CTTC	CTGCT	GTATTGTT
6901	GTAAGGGCA	GGGTGGAAC	AGGAGAGGCC	ACGAGG	GGG	AAACGCC		10141	CGCATCAT	ATG	CGAC	GGCGATC	AAGCTTT	ACTCAATAC
6961	TATCTTAT	GTCTGCTGG	GGTTCGAC	CTCTGACTT	AGC	GTCGATT		10201	TTTACAGG	GGG	CTGCG	TTCTCAG	GCAACG	CGGCCAGCT
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7141	AACCGTATT	CCGCTTTGA	GTGAGCTGAT	ACC	GTG	CGCC		10381	TGCTGCTGG	CG	TGCTG	CTT	GGG	TTGATCT
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7441	GACAAGCTG	GACCGCTCC	GGGAGCTGCA	TGTGTCAGAG	GTTT	TAC		10681	GGGGCTG	GG	GGG	GGG	GGGG	GGGGGCTT
7501	AACCGCGGAG	GGAGGTG	TTGATGTTGG	CGCGCGCG	CGAGT	TGGCG		10741	GGCGAACAC	GG	TG	GGG	GGG	GGGGCT
7561	TGTCGGCC	CTGTTAGG	GGCTGGCGT	AGGGCAGGCA	TTT	TGAGG		10801	CCAGCTACG	CA	GGG	CCG	GGG	GGGGCT
7621	GCGATGAGCC	GACGCCAGG	GGGGGGCG	GGAGGCGCA	GCG	ACCGAAG		10861	GGGTGCTG	GG	GGG	GGG	GGGG	GGGGCT
7681	TTTGTGAGCT	CTTCGCTG	GGCGTGGCCA	GACAGTTATG	CACAGG	CCGGGTTTTA		10921	GGTCAAGCAT	CT	GGG	GGG	GGG	GGGGCT
7741	AGAGTTAA	TAAGTTAA	AGAGTTT	GGCGAAAAAAT	CGCC	TTT		10981	ACACGCTGG	TC	GGG	GGG	GGG	GGGGCT
7801	TCAGTCACTT	ACATGTCG	CCGGT	TTGATGCG	ATG	TGCTG		11041	CGGTGCTG	GC	GGG	GGG	GGG	GGGGCT
7861	TTCCGGT	CAATGACGG	CTTGGGTT	CCATG	TAC	AGGAGAGA		11101	GTC	TGCG	GG	GGG	GGG	GGGGCT
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7981	GAACGGCG	ATGCTCG	CTCGATC	TTGCGG	TC	GGATGACT		11221	TTTCAAGA	GGG	GGG	GGG	GGG	GGGGCT
								11281	GGATCAAAGT	ACT				

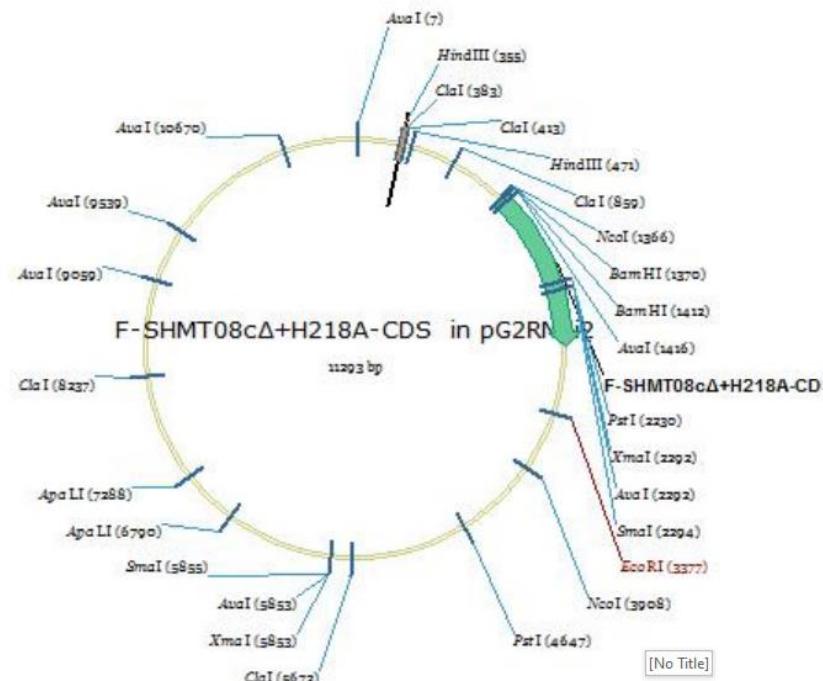
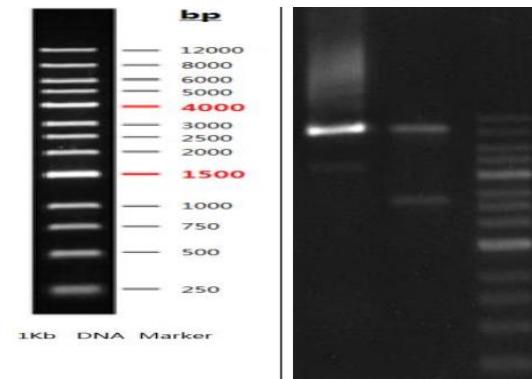
Supplemental Figure S6. F-SHMT08cΔ+S190A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

Gene Name F-SHMT08cΔ+H218A-CDS

Cloning Vector pG2RNAi2

Length (bp) 1430

Cloning Sites Ascl-AvrlI



Supplemental Figure S7. F-SHMT08cΔ+H218A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

Detailed Sequence of the Whole Construct:

1 TTGATCCCGA GGGGAACCT GTGGTTGGCA TGCACATACA AATGGACGAA CGGATAAACCC
61 TTTTCACGCC CTTTTAAATA TCCGTTATTTC TAATAAACGC TCTTTCTCT TAGGTTTACC
121 CGCCAATATA TCCTGTAAA CACTGATAGT TTAAACTGAA GGCGGGAAAC GACAATCTGA
181 TCCAAGCTCA AGCTCATTG CCATTCAAGGC TGCGCAACTG TTGGGAAGGG CGATCGGTGC
241 GGGCCTCTTC GCTATTACGC CAGCTGGCGA AAGGGGGATG TGCTGCAAGG CGATTAAGTT
301 GGGTAACGCC AGGGTTTCC CAGTCACGAC GTTGTAAAAC GACGGCCAGT GCCAAGCTTA
361 TTACCTGTT ATCCCTAGAT ATCGATTTG GCTACCTTAA GGTAGCCAAA ATCGATCACT
421 AGTGCGGCCG CGGGCCCAAT ATAACAACGA CGTCGTAACA GATAAAGCGA AGCTTGAAGG
481 TGCATGTGAC TCCGTCAAGA TTACGAAACC GCCAACTACC ACGCAAATTG CAATTCTCAA
541 TTTCCTAGAA GGACTCTCCG AAAATGCATC CAATACCAAA TATTACCGT GTCATAGGCA
601 CCAAGTGACA CCATACATGA ACACCGTCA CAATATGACT GGAGAAGGGT TCCACACCTT
661 ATGCTATAAA ACGCCCCACA CCCCTCCTCC TTCCTTCGCA GTTCAATTCC AATATATTCC
721 ATTCTCTCTG TGTATTTCCC TACCTCTCCC TTCAAGGTTA GTCGATTTCT TCTGTTTTTC
781 TTCTTCGTTC TTTCATGAA TTGTGTATGT TCTTGATCA ATACGATGTT GATTGATTG
841 TGTTTGTGTT GGTTCATCG ATCTTCAATT TTCATAATCA GATTCAAGCTT TTATTATCTT
901 TACAACAACG TCCTTAATTG GATGATTCTT TAATCGTAGA TTTGCTCTAA TTAGAGCTTT
961 TTCATGTCAG ATCCCTTAC AACAAAGCCTT AATTGTTGAT TCATTAATCG TAGATTAGGG
1021 CTTTTTCAT TGATTACTTC AGATCCGTT AACGTAACCA TAGATCAGGG CTTTTTCATG
1081 AATTACTTCA GATCCGTTAA ACAACAGCCT TATTTTTAT ACTTCTGTGG TTTTCAAGA
1141 AATTGTTCAAG ATCCGTTGAC AAAAAGCCTT ATTGTTGAT TCTATATCGT TTTTCGAGAG
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1261 TTTTTTTCA CGAGATTGCT TCAGATCCGT ACTTAAGATT ACGTAATGGA TTTTGATTCT
1321 GATTATCTG TGATTGTTGA CTCGACAGCG GCCGCACCGG CGCGCCATGG ATCCAGTAAG
1381 CGTGTGGGGT AACACGCCCT TGGCGACGGT GGATCCCGAG ATCCATGACC TCATCGAGAA
1441 GGAGAAGCGC CGTCAATGCC GCAGGAATCGA GCTCATCGCC TCCGAGAACT TCACCTCCTT

1501 CGCCGTCATC GAGGCCCTCG GCAGCGCTCT CACGAACAAA TACTCCGAGG GCATGCCGGG
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 1621 CGCCCTCCAA GCCTTCCACC TCGACGCCA ATCCCTGGGC GTCAAGTCC AGCCCTACTC
 1681 CGGCTCCCCG GCCAACTTCG CGGCCCTACAC CGCGTCTTC AACCCCCACG ACCGCATCAT
 1741 GGGGCTAGAT CTCCGCTCCG GCGGCCACCT CACCCACGGC TACTACACCT CGGGCGGAAA
 1801 GAAGATCTCC GCCACCTCCA TTACTTCGA GAGTCTCCCT TACAAGGTAA ACTCCACCAC
 1861 CGGCTACATC GACTACGACC GCTTGGAAAGA AAAAGCCCTA GACTTCAGGC CAAAACTCAT
 1921 AATCTGGGT GGCAGCGCT ACCTCTCGCA TTGGGACTAC AAACGTTCA GGGAAAGTCGC
 1981 TGATAAGTGC GGAGCATTGC TTCTCTCGCA CATGGCGCT ACTAGCCGCC TTGTGCCCGC
 2041 GCAGGAAGTG AACAGCCCCT TCGAGTATG CGACATTGTG ACCACCAAGA CTCAAGAGAG
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 2281 GGGCGCGTCC CCCGGGTTA AGGCCCTACGC GAAGCAGGT AAGGCCAACGG CGTTGGCCT
 2341 TGGAAAATAC TTGATGGGA AAGGGTACAG CCTTGTCACT GGCGGAACGG AGAACCATCT
 2401 TGTGTTGTGG GATCTGAGAC CTCTGGATT GACTGGGTAT AAGGTGGAGA AACTCTGTGA
 2461 TCTCTGTAAC ATTACTGTTA ACAAGAACGC TGTTTTGGT GATAGCAGTG CCTTGGCCCC
 2521 TGGTGGAGTG CGAATTGGTG CCCCTGCCAT GACTTCTAGG GTTTGGTTG AAAAAGACTT
 2581 TGAGCAGATT GGTGAGTTC TTACCGTGC TGTGACTCTC ACACIGGAGA TCCAGAAGGA
 2641 GCATGGCAAA CTTCTCAAGG ATTCAACAA GGGTCTCGTC AACAAACAAGG CTATTGAAGA
 2701 TCTCAAAGCT GATGTTGAGA AGTTCTGTG CTTGTTGAC ATGCCCTGGCT TCCTGGTATC
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 2821 TCTTGTAACCA TTTGGTGTGC TTGTAATTAA CTGTTTTTT TATTGGTTT TCGCTATCGA
 2881 ACTGTGAAAT GGAAATGGAT GGAGAAGAGT TAATGAATGA TATGGTCCTT TTGTTCATTC
 2941 TCAAATTAAT ATTATTTGTT TTTCTCTTA TTTGTTGTGT GTGAATTG AAATTATAAG
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 4681 GATTGAATCC TGTTGCCGGT CTTGCATGATG TTATCATATA ATTCTGTG AATTACGTTA

Supplemental Figure S7. F-SHMT08cΔ+H218A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

4801 GAGTCCCGCA ATTATACATT TAATACGCGA TAGAAAACAA AATATAGCGC GCAAACCTAGG
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 10561 CAACGAGTCG AGCCGCTCT TTACGGTGC GGCCTCTCG GTCGATCAGC TGCGGGCGT
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 10741 CGGGAAACAC GTTCAACACC ATGCGGCCGG CGGGCTGTTG GGTGCGGCC CACGGCTCTG
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 10861 GGGTCTGCG CGGCCAGCGG TCTAGCTGTG TCACGCTGC AACGTCGCCA GGGCGTAGGT
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 11281 GGATCAAAGT ACT

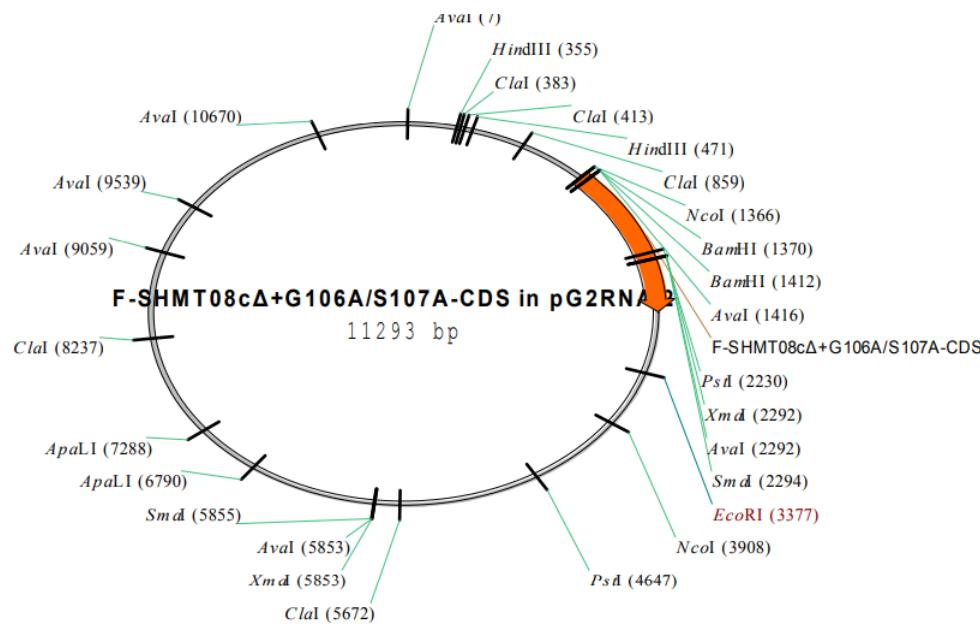
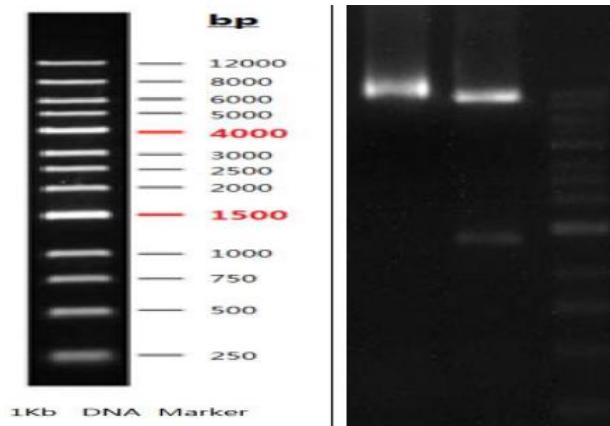
Supplemental Figure S7. F-SHMT08cΔ+H218A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

Gene Name F-SHMT08cΔ+G106A/S107A-CDS

Cloning Vector pG2RNAi2

Length (bp) 1430

Cloning Sites Ascl-AvrlI



Supplemental Figure S8. F-SHMT08cΔ+G106A/S107A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

Detailed Sequence of the Whole Construct:

1 TTGATCCCGA GGGGAACCCT GTGGTTGGCA TGCACATACA AATGGACGAA CGGATAAAC
61 TTTTCACGCC CTTTAAATA TCCGTTATTC TAATAAACGC TCTTTCTCT TAGGTTACC
121 CGCCAATATA TCCTGTAAA CACTGATAGT TAAACTGAA GGCGGGAAAC GACAATCTGA
181 TCCAAGCTCA AGCTCATTG CATTCAAGGC TGCGCAACTG TTGGGAAGGG CGATCGGTGC
241 GGGCCTCTTC GCTATTACGC CAGCTGGCGA AAGGGGGATG TGCTGCAAGG CGATTAAGTT
301 CCCTAACCCC ACCCTTTCC CACTCACCAAC TTTCTAAAAC CACCCCCACT CCCAACCTTA
361 TTACCTGTGTT ATCCCTAGAT ATCGATTTCG GCTACCTTAA GGTAGCCAAA ATCGATCACT
421 AGTGCGGCCG CGGGCCCAAT ATAACAACGA CGTCTAACAA GATAAAGCGA AGCTTGAAGG
481 TGCATGTGAC TCCGTCAGA TTACGAAACC GCCAACTACC ACGCAAATTG CAATTCTCAA
541 TTTCCTAGAA GGACTCTCCG AAAATGCATC CAATACCAA TATTACCGT GTCATAGGCA
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661 ATGCTATAAA ACGCCCCACA CCCCTCCTCC TTCCCTCGCA GTTCAATTCC AATATATTCC
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781 TTCTTCGTT TTTCCATGAA TTGTGTATGT TCTTGATCA ATACGATGTT GATTGATTG
841 TGTTTGTGTT GGTTTCATCG ATCTTCAATT TTCATAATCA GATTCAAGCTT TTATTATCTT
901 TACAACAACG TCCTTAATTT GATGATTCTT TAATCGTAGA TTTGCTCTAA TTAGAGCTTT
961 TTCATGTCAG ATCCCTTAC AACAGCCTT AATTGTTGAT TCATTAATCG TAGATTAGGG
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1081 AATTACTTCA GATCCGTTAA ACAACAGCCT TATTGTTTAT ACTTCTGTGG TTTTCAAGA
1141 AATTGTTCAAG ATCCGTTGAC AAAAGCCTT ATTGTTGAT TCTATATCGT TTTGAGAG
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1261 TTTTTTTCA CGAGATTGCT TCAGATCCGT ACTTAAGATT ACGTAATGGA TTTTGATTCT
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1621 CGCCCTCCAA GCCTTCCACC TCGACGCCCA ATCCCTGGGGC GTCAACGTCC AGCCCTACTC
1681 CGCTGCTCCG GCCAACTTCG CGCCCTACAC CGCCGTCCTC AACCCCCACG ACCGCATCAT
1741 GGGGCTAGAT CTCCGCTCCG CGGGCCACCT CACCCACGGC TACTACACCT CGGGCGGAAA

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 1861 CGGCTACATC GACTACGACC GCTTGGAAAGA AAAAGCCCTA GACTTCAGGC CAAAACCAT
 1921 AATCTGCGGT GGCAGCGCGT ACCCTCGCGA TTGGGACTAC AAACGTTCA GGGAACTCGC
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 2461 TCTCTGTAAC ATTACTGTTA ACAAGAACGC TGTTTTGGT GATAGCAGTG CCTTGCCCC
 2521 TGGTGGAGTG CGAATTGGTG CCCCTGCCAT GACTTCTAGG GTTGGTTG AAAAAAGACTT
 2581 TGAGCAGATT GGTGAGTTCC TTCACCGTGC TGTGACTCTC AACTGGAGA TCCAGAAGGA
 2641 GCATGGCAA CTTCTCAAGG ATTTCAACAA GGGTCTCGTC ACAACAAGG CTATTGAAGA
 2701 TCTCAAAGCT GATGTTGAGA AGTCTCTGTC TTGTTTGAC ATGCTGGCT TCCTGGTATC
 2761 TGAAAATGAAG TACAAGGATT AGCCTAGGTT CGAGTATTAT GGCATTGGGA AACTGTTT
 2821 TCTTGTACCA TTTGTTGTGC TTGTAATTAA CTGTGTTTT TATTCGGTT TCGCTATCGA
 2881 ACTGTGAAAT GGAAATGGAT GGAGAAGAGT TAATGAATGA TATGGTCCTT TTGTTCATTC
 2941 TCAAATTAAT ATTATTGTGTT TTGTTCTTA TTGTTGTGT GTTGAATTG AAATTATAAG
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 4621 ACAAGTAAAG CGGCCGCCCG GCTGCAGATC GTTCAAACAT TTGGAATAA AGTTCTTAA
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Supplemental Figure S8. F-SHMT08cΔ+G106A/S107A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

5041	AGCTAACTCA	CATTAATTGC	GTTGCGCTCA	CTGCCCGCCT	TCCAGTCGGG	AAACCTGTGC	8281	TTGCCTTCTG	TGATCTCGCG	GTACATCCAA	TCAGCTAGCT	CGATCTCGAT	GTACTCCGGC	
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5341	AGCGGGAGAG	CCGTTGTAAG	GCGGCAGACT	TTGTCATGCT	TACCGATGCT	ATTGCGAAGA	8581	TCCCGGTATC	GGTCATGGA	TTCGTTTAGA	TGGGAAACCG	CCATCAGTAC	CAGGTCGAA	
5401	ACCGCAACTA	ACGTCGCCGG	TTGAAACAC	GGATGATC	GGCGGAGGTA	GCATGTTGAT	8641	TCCCACACAC	TGGCCATGCC	GGCCGGCCCT	CGCGAACACT	CTACGTCGCC	GTCTGGAAGC	
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6361	CTAAGAATT	ATTCTATGATC	CTGATGACC	AAAATCCCTT	AACGTGAGT	TTCGTCAC	9601	CGTGATACGG	GA	TGGCAGCTC	GTACCCGGCC	AGCGCCTCG	CAACCTCACC	
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6601	ACTGCTTTC	TAGTGTAGCC	GTAGTTAGGC	CACCACTTC	AA	GAACCGCTT	9841	GTCCGGCCG	TGGG	GCGCCT	TGACGATTC	ACAGAGTCG	TGCGCTTAC	
6661	ACATACCTCG	CTCTGTAAT	CTGTGATC	GTGGCTGCTG	CCAGTGGCGA	TAAGTCG	9901	GTCGCGGTCA	ATCGT	CGG	GATGCG	GACAACGGTT	TTTCCCGCAC	
6721	CTTACGGGGT	TGGA	CTAG	CGGATAAGG	CGCAGCGCTG	GGGCTGAGC	9961	GGCCGCC	TCGCGG	AC	GGG	AGGCGATG	CATCGGCCCC	
6781	GGGGGTTG	CGACACAGCC	CAGCTGGAG	CGAACGACCT	ACACCGA	GAGATACCTA	10021	GGCGAGTTG	AGGGCGGGG	CTAGATGGG	TGCGATG	GTCTTGCCTG	ACCCGCC	
6841	CAGCGTGGAC	TATGAGAAAG	CGCCACGCTT	CCCGAAGGG	GAAGGGCG	CAGGATTC	10081	CTGGTTAAGT	ACAGCGATAA	CTTC	CTG	GTATTGTTT	ATTACTCAT	
6901	GTAAGCGGCA	GGGTCGGAAC	AGGAGAGCGC	ACGAGGGAGC	TTCCAGGGGG	AAACGCC	10141	CGC	CATCAT	ACCGCAGC	GGCGATG	AAAGCTGTTT	ACTCAAAATAC	
6961	TATCTTATA	GTCCCTGTCG	GTTC	CTGACTT	AGCGT	GATT	10201	TTT	AGCG	GGC	CTT	CTG	ACATCACCTT	
7021	TCGTCAGGG	GGCGGAGCCT	ATGAAAAAA	GCCAGCAACG	CGGCC	TTT	ACG	GGT	CTG	GG	CTG	GTG	TTTCTC	
7081	GCCTTTGCT	GGGCTT	TG	CTACATG	TTC	CTG	CTG	TAT	CC	CTG	TG	GG	CTC	
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7201	AGCGAGTCAG	TGAGCGAGGA	AGCGGAAGAG	CGCCTGATG	GGT	ATT	10321	TGCAACACGT	ACCCGGCCG	GAT	CAT	CTG	CGAT	CTCC
7261	CTGTCGGT	TTTCACACC	CATATG	GGT	CTG	CTG	10381	TCGTCCTG	CGT	CTG	CTG	GGT	CTG	
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7441	GACAAGCTGT	GACCGCTGAC	GGGAGCTGA	TGAGCTAGAG	GGT	TTT	ACG	GGC	GG	GG	GG	GG	GG	
7501	AACCGCGAG	GCAGGGTGC	TTGATG	GGG	CGCC	GGG	10561	CAAGCAGTC	AGCCG	CTT	CG	GG	GG	GG
7561	TGTCGGCGC	CTGGT	AGG	GGT	GGG	GGG	10621	GC	CG	CG	CG	GG	GG	GG
7621	GCGTAGGCC	GACCGAAGC	GGGGGGCGT	AGGGAGCGC	GCG	AGG	GG	10681	GGG	CC	CC	GG	GG	GG
7681	TTT	GGCAG	CTT	GGG	CTG	GGG	10741	GGG	CA	CC	GG	GG	GG	
7741	AGAGTTTAA	TAAGTTAA	AGAGTTT	GGG	AAA	AA	10801	CCAGG	CTAC	GG	GG	GG	GG	
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7861	TTCCGGT	CCATG	GGT	GGG	GGG	GGG	10921	GGT	CA	GG	GG	GG	GG	
7921	CCTTCGAC	CTTT	GGG	GGG	GGG	GGG	10981	ACAG	CTT	GG	GG	GG	GG	
7981	GAACGGCGG	ATG	CTG	GGG	GGG	GGG	11041	CGG	GTG	GC	GG	GG	GG	
8041	GCCTGCCCC	CCT	CCG	GGG	GGG	GGG	11101	GT	CTC	GG	GG	GG	GG	
8101	CGCACCGTGA	AA	CTG	GG	GG	GG	11161	GCC	AG	GG	GG	GG	GG	
8161	TTGAAACAACC	ATCTG	GGG	GGG	GGG	GGG	11221	TTT	CA	GG	GG	GG	GG	
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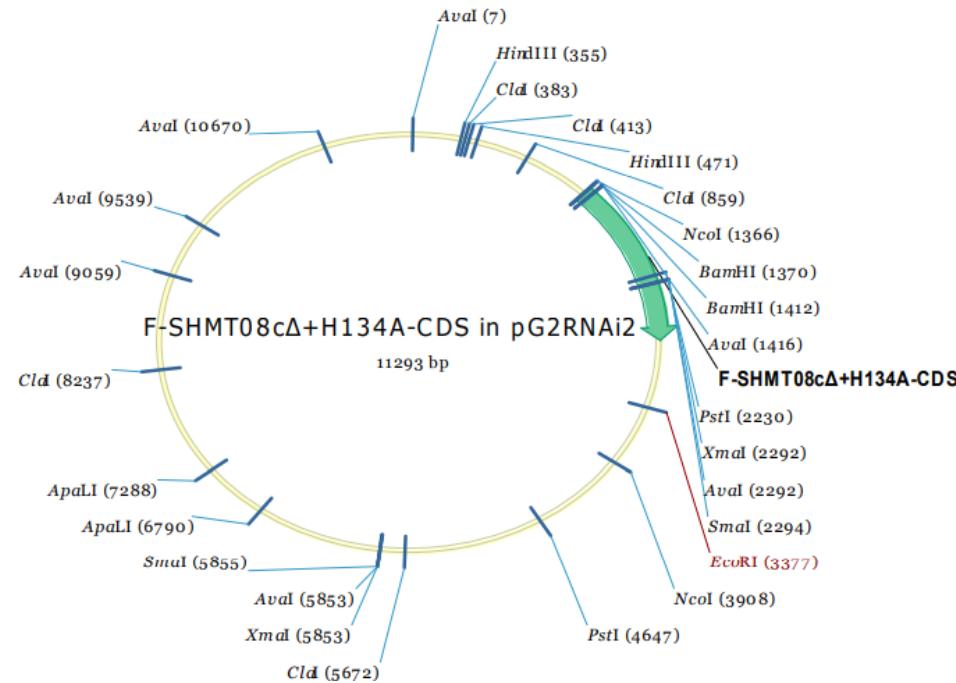
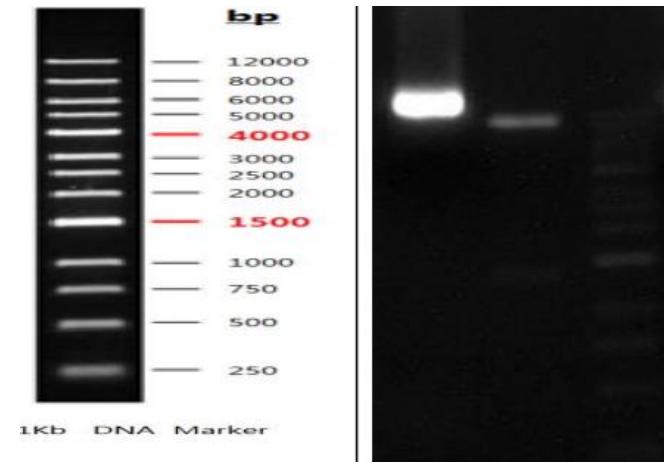
Supplemental Figure S8. F-SHMT08cΔ+G106A/S107A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

Gene Name F-SHMT08cΔ+H134A-CDS

Cloning Vector pG2RNAi2

Length (bp) 1430

Cloning Sites Ascl-AvrlI



Supplemental Figure S9. F-SHMT08cΔ+H134A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

Detailed Sequence of the Whole Construct:

1 TTGATCCCGA GGGGAACCT GTGGTTGGCA TGCACATACA AATGGACGAA CGGATAAAC
61 TTTTCACGCC CTTTTAAATA TCCGTTATTG TAATAAACGC TCTTTCTCT TAGGTTTACC
121 CGCCAATATA TCCTGTAAA CACTGATAGT TTAAACTGAA GGCGGGAAAC GACAATCTGA
181 TCCAAGCTCA AGCTCATTG CCATTCAAGGC TGCGCAACTG TTGGGAAGGG CGATCGGTGC
241 GGGCCTCTTC GCTATTACGC CAGCTGGCGA AAGGGGGATG TGCTGCAAGG CGATTAAGTT
301 GGGTAACGCC AGGGTTTCC CAGTCACGAC GTTGTAAAAC GACGGCCAGT GCCAAGCTTA
361 TTACCCCTGTT ATCCCTAGAT ATCGATTTG GCTACCTTAA GGTAGCCAAA ATCGATCACT
421 AGTGCAGGCC CGGGCCCAAT ATAACAACGA CGTCGTAACA GATAAAGCGA AGCTTGAAGG
481 TGCATGTGAC TCCGTCAAGA TTACGAAACC GCCAACTACC ACGCAAATTG CAATTCTCAA
541 TTTCCCTAGAA GGACTCTCCG AAAATGCATC CAATACCAAA TATTACCCGT GTCATAGGCA
601 CCAAGTGACA CCATACATGA ACACGCGTCA CAATATGACT GGAGAAGGGT TCCACACCTT
661 ATGCTATAAA ACGCCCCACA CCCCTCCTCC TTCCTTCGCA GTTCAATTCC AATATATTCC
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781 TTCTTCGTTC TTTCCATGAA TTGTGTATGT TCTTGATCA ATACGATGTT GATTTGATTG
841 TGTTTTGTTT GGTTTCATCG ATCTTCAATT TTCATAATCA GATTCAGCTT TTATTATCTT

901 TACAACAAACG TCCTTAATTT GATGATTCTT TAATCGTAGA TTTGCTCTAA TTAGAGCTTT
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1021 CTTTTTCAT TGATTACTTC AGATCCGTTA AACGTAACCA TAGATCAGGG CTTTTTCATG
1081 AATTACTTCA GATCCGTTAA ACAACAGCCT TATTTTTAT ACTTCTGTGG TTTTCAGA
1141 AATTGTTAG ATCCGTTGAC AAAAGCCTT ATTGTTGAT TCTATATCGT TTTTCAGAG
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1321 GATTATCTG TGATTGTTGA CTCGACAGCG GCGCACCGG CGGCCATGG ATCCAGTAAG
1381 CGTGTGGGGT AACACGCCCT TGGCGACGGT GGATCCCGAG ATCCATGACC TCATCGAGAA
1441 GGAGAACGCG CGTCAATGCC GCGGAATCGA GCTCATGCC TCCGAGAACT TCACCCCTT
1501 CGCCGTCTAC GAGGCCCTCG GCAGCGCTCT CACGAACAAA TACTCCGAGG GCATGCCGGG
1561 CAACCGCTAC TACGGCGGCA ATGAATACAT CGACCAGATC GAAAACCTCT GCCGCTCACG
1621 CGCCCTCCAA GCCTTCCACC TCGACGCCA ATCCTGGGGC GTCAACGTCC AGCCCTACTC
1681 CGGCTCCCCG GCCAACCTCG CGGCCTACAC CGCCGTCTC AACCCCCACG ACCGCATCAT
1741 GGGGCTAGAT CTCCGCTCCG GCGGCCTCT CACCCACGGC TACTACACCT CGGGCGGAAA
1801 GAAGATCTCC GCCACCTCCA TTACTTCGA GAGTCTCCCT TACAAGGTA ACTCCACCAC
1861 CGGCTACATC GACTACGACC GCTTGGAAAGA AAAAGCCTA GACTTCAGGC CAAAACCTCAT
1921 AATCTGCGGT GGCAGCGCGT ACCCTCGCGA TTGGGACTAC AAACGTTCA GGGAGTCGC
1981 TGATAAGTGC GGAGCATTGC TTCTGCGCA CATGGCGCAC ACTAGCGGCC TTGCGGCCGC
2041 GCAGGAAGTG AACAGCCCT TCGAGTATTG CGACATTGTG ACCACCACGA CTCACAAGAG
2101 CCTGCGGGGC CCACGTGCGG GGATGATCTT TTACCGGAAG GGCCCCAACG CGCCGAAGAA
2161 GGGCAGCCG GAGAACGCGG TTATGATTT CGAGGACAAG ATTAACCTCG CGGTGTTCCC
2221 TCCGCTGCA GGTGGGGCCC ACAACCACCA GATCGGTGCT CTCGCCGTGG CGCTGAAGCA
2281 GGCCCGCTCG CCCGGGTTA AGGCCTACGC GAAGCAGGTT AAGGCGAACG CGCTGCGCT
2341 TGGAAAATAC TTGATGGGGAA AAGGGTACAG CCTTGTCACT GGCGGAACGG AGAACCATCT
2401 TGTTTGTGG GACTGAGAC CTCTGGATT GACTGGGTAT AAGGTGGAGA AACTCTGTGA

2461 TCTCTGTAAC ATTACTGTTA ACAAGAACGC TGTTTTGGT GATAGCAGTG CCTGGCCCC
2521 TGGTGGAGTG CGAATTGGTG CCCCTGCCAT GACTCTAGG GGTTGGGTG AAAAGAGCTT
2581 TGAGCAGATT GGTGAGTTCC TTCACCGTGC TGTGACTCTC ACACTGGAGA TCCAGAAGGA
2641 GCATGGCAA CTTCTCAAGG ATTCAACAA GGGTCTCGTC AACAAACAAGG CTATTGAAGA
2701 TCTCAAAGCT GATGTTGAGA AGTCTCTGC CTTGTTGAC ATGCCCTGGCT TCCCTGGTATC
2761 TGAAATGAAG TACAAGGATT AGCCTAGTT CGAGTATTAT GGCAATTGGGA AAACGTGTTT
2821 TCTTGTACCA TTTGTTGTGC TTGTAATTAA CTGTGTTTT TATTCGGTTT TCGCTATCGA
2881 ACTGTGAAAT GGAAATGGAT GGAGAAGAGT TAATGAATGA TATGGCCCTT TTGTTCATTC
2941 TCAAATTAAT ATTATTTGTT TTTCTCTTA TTTGTTGTGT GTTGAATTG AAATTATAAG
3001 AGATATGCAA ACATTTGTT TTGAGTAAAA ATGTTGCAA TCGGGCCCTC TAATGACCGA
3061 AGTTAATATG AGGAGTAAAA CACTTGTAGT TGTACCATTA TGCTTATTCA CTAGGCAACA
3121 AATATATTTT CAGACCTAGA AAAGCTGCAA ATGTTACTGA ATACAAGTAT GTCTCTTGT
3181 GTTTTGTACA TTTATGAACT TTCTTTATG TAATTTCCA GAATCCTTGT CAGATTCTAA
3241 TCATTGCTTT ATAATTATAG TTATACTCAT GGATTTGTAG TTGAGTATGA AAATATTTT
3301 TAATGCATTT TATGACTTGC CAATTGATTG ACAACATGCA TCAATCCCGC GTTATGACTC
3361 TCTTAAGAGA GTCACTGAAATT CGAGCTTCCA GAAGGTAAATT ATCCAAGATG TAGCATCAAG
3421 AATCCAATGT TTACGGAAA AACTATGGAA GTATTATGTG AGCTCAGCAA GAAGCAGATC
3481 AATATGCGGC ACATATGCAA CCTATGTTCA AAAATGAAGA ATGTACAGAT ACAAGATCCT
3541 ATACTGCCAG AATACGAAGA AGAACATGTA GAAATTGAAA AAGAAGAACG AGGCAGAAGAA
3601 AAGAATCTTG AAGACGTAAG CACTGACGAC AACAAATGAAA AGAAGAAGAT AAGGTGGTGC
3661 ATTGTGAAAG AGACATAGAG GACACATGTA AGGTGGAAA TGTAGGGCG GAAAGTAACC
3721 TTATCACAAA GGAATCTTAT CCCCCACTAC TTATCCTTTT ATATTTTCC GTGTCTTTT
3781 TGCCCTGAG TTTCCCTATA TAAGGAACCA AGTTCGGCAT TTGTGAAAC AAGAAAAAAT
3841 TTGGTGTAAAG CTATTTCTT TGAAGTACTG AGGATACAAC TTCAAGGAAA TTGTAAGTT
3901 TGTGATCCAT GGTGAGCAAG GGCGAGGAGC GTTTCACCGG GGTGGTGCCTT ATCCTGGTGC
3961 AGCTGGACGG CGACGTAACG GGCCACAAAGT TCAGCGTGTGTC CGGCAGGGC GAGGGCGATG

Supplemental Figure S9. F-SHMT08cΔ+H134A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

4021 CCACCTACGG CAAGCTGACC CTGAAGTTCA TCTGCACCAAC CGGCAAGCTG CCCGTGCCCT
 4081 GGCCCACCC CGTGACCACC TTCACCTACG GCGTGCAGTG CTTCAGCCGC TACCCCGACC
 4141 ACATGAAGCA GCACGACTTC TTCAAGTCCG CCATGCCCGA AGGCTACGTC CAGGAGCGCA
 4201 CCATCTTCTT CAAGGACGAC GGCAACTACA AGACCCGCGC CGAGGTGAAG TTGAGGGCG
 4261 ACACCCCTGGT GAACCCGATC GAGCTGAAGG GCATCGACTT CAAGGAGGAC GGCAACATCC
 4321 TGGGGCACAA GCTGGAGTAC AACTACAACA GCCACAACGT CTATATCATG GCCGACAAGC
 4381 AGAAGAACCG CATCAAGGTG AACTCAAGA TCCGCCACAA CATCGAGGAC GGCAGCGTGC
 4441 AGCTCGCCGA CCACTACCAAG CAGAACACCC CCATCGCGA CGGCCCCGTG CTGCTGCCCG
 4501 ACAACCACTA CCTGAGCACC CAGTCCGCC TGAGCAAAGA CCCCAACGAG AAGCGCGATC
 4561 ACATGGTCCT GCTGGAGTTC GTGACCGCCG CCGGGATCAC TCACGGCATG GACGAGCTGT
 4621 ACAAGTAAAG CGGCCGCCCG GCTGCAGATC GTTCAAACAT TTGGCAATAA AGTTTCTTAA
 4681 GATTGAATCC TGTTGCCGGT CTTGCGATGA TTATCATATA ATTCTGTGTT AATTACGTTA
 4741 AGCATGTAAT AATTAACATG TAATGCATGA CGTTATTTAT GAGATGGGTT TTTATGATTA
 4801 GAGTCCCGCA ATTATACATT TAATACCGA TAGAAAACAA AATATAGCGC GCAAACCTAGG
 4861 ATAAAATTATC GCGCGCGGT TCATCTATGT TACTAGATCC GATGATAAGC TGTCAAACAT
 4921 GAGAATTAAT TCGTAATCAT GTCATAGCTG TTCCCTGTGT GAAATTGTTA TCCGCTCACA
 4981 ATTCACACACA ACATACGAGC CGGAAGCATA AAGTGTAAAG CCTGGGGTGC CTAATGAGTG
 5041 AGCTAACTCA CATTAAATTGC GTTGCCTCA CTGCCCGCTT TCCAGTCGGG AAACCTGTGC
 5101 TGCCAGCTGC ATTAATGAAT CGGCCAACGC GCGGGGAGAG GCGGTTGCG TATTGGCTAG
 5161 AGCAATTCCG CGTTAATTCA GTACATTAAA AACGTCCGCA ATGTGTTATT AAGTTGTCTA
 5221 AGCGTCAATT TGTTTACACC ACAATATATC CTGCCACCAAG CCAGCCAACA GCTCCCCGAC
 5281 CGGCAGCTCG GCACAAAATC ACCACTCGAT ACAGGCAGCC CATCAGTCGG GGACGGCGTC
 5341 AGCGGGAGAG CGGTTGTAAG GCGCAGACT TTGCTCATGT TACCGATGCT ATTGGAAAGA
 5401 ACGCCTACCA AGCTGCCGGG TTGAAACAC GGATGATCTC GCGGAGGGTA GCATGTTGAT
 5461 TGTAACGATG ACAGAGCGTT GCTGCCTGTG ATCCAGATCA TGAACAATAA AACTGTCTGC
 5521 TTACATAAAC AGTAATACAA GGGGTGTTAT GAGCCATATT CAACGGAAA CGTCTGCTC
 5581 TAGGCCCGA TAAATTCCA ACATGGATGC TGATTTATAT GGGTATAAAT GGGCTCGCGA
 5641 TAATGTCGGG CAATCAGGTG CGACAATCTA TCGATTGTAT GGGAAAGCCCG ATGCGCCAGA
 5701 GTTGTTCCTG AAACATGGCA AAGGTAGCGT TGCCAATGATG GTTACAGATG AGATGGTCAG
 5761 ACTAAACTGG CTGACCGAAT TTATGCCCTC TCCGACCATC AAGCATTAA TCCGTACTCC
 5821 TGATGATGCA TGGTTACTCA CCACTGCGAT CCCCGGGAAA ACAGCATTCC AGGTATTAGA
 5881 AGAATATCCT GATTCAAGGTG AAAATATTGT TGATGCGCTG GCAGTGTTC TGCGCCGGTT
 5941 GCATTGATT CCTGTTGTA ATTGTCCCTT TAACAGCGAT CGCGTATTTC GTCTCGCTCA
 6001 GGCGCAATCA CGAATGAATA ACGGTTGGT TGATGCGAGT GATTTGATG ACGAGCGTAA
 6061 TGGCTGCCCT GTTGAACAAG TCTGGAAAGA AATGCATAAA CTTTGCCAT TCTCACCGGA
 6121 TTCAGTCGTC ACTCATGGTG ATTCTCACT TGATAACCTT ATTGTTGACG AGGGGAAATT
 6181 AATAGGTTGT ATTGATGTTG GACGAGTCGG AATCGCAGAC CGATACCAAG ATCTGCCAT
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 6421 TGAGCGTCAG ACCCCGTAGA AAAGATCAA GGATCTTCTT GAGATCCTT TTTCTCGCG
 6481 GTAATCTGCT GCTTGCACAC AAAAAAACCA CCGCTACCAAG CGGTGGTTG TTTGCCGGAT
 6541 CAAGAGCTAC CAACTCTTT TCCGAAGGTA ACTGGCTTCA GCAGAGCGCA GATACCAAAT
 6601 ACTGCTCTTC TAGTGTAGCC GTAGTTAGGC CACCACTTCA AGAACTCTGT AGCACCCGCT
 6661 ACATACCTCG CTCTGCTAAT CCTGTTACCA GTGGCTGCTG CCAGTGGCGA TAAGTCGTGT
 6721 CTTACCGGGT TGGACTCAAG ACGATAGTTA CCGGATAAGG CGCAGCGTC GGGCTGAACG
 6781 GGGGGTCGT GCACACAGCC CAGCTGGAG CGAACGACCT ACACCGAAGT GAGATACCTA
 6841 CAGCGTGAGC TATGAGAAAG CGCCACGCTT CCCGAAGGGA GAAAGGCGGA CAGGTATCCG
 6901 GTAAGCGCA GGGTCGGAAC AGGAGAGCGC ACGAGGGAGC TTCCAGGGGG AAACGCCCTGG
 6961 TATCTTATA GTCCTGTCGG GTTTCGCCAC CTCTGACTTG AGCGTCGATT TTTGTGATGC
 7021 TCGTCAGGGG GGCAGGAGCCT ATGGAAAAAC GCCAGCAACG CGGCCTTTT ACGGTTCTG
 7081 GCCTTTGCT GGCCTTTGC TCACATGTT TTTCTGCGT TATCCCTGTA TTCTGTGGAT

Supplemental Figure S9. F-SHMT08cΔ+H134A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

7141 AACCGTATTA CCGCCTTGAGTGAGCTGAT ACCGCTCGCC GCAGCCGAAC GACCGAGCGC
 7201 AGCGAGTCAG TGAGCGAGGA AGCGGAAGAG CGCCTGATGC GGTATTTCT CCTTACGCAT
 7261 CTGTGCGGTA TTTCACACCG CATATGGTGC ACTCTCAGTA CAATCTGCTC TGATGCCGCA
 7321 TAGTTAACGCC AGTATACACT CCGCTATCGC TACGTGACTG GGTATGGCT GCGCCCCGAC
 7381 ACCCGCCAAC ACCCGCTGAC GCGCCCTGAC GGGCTTGTCT GCTCCCGCA TCCGCTTACA
 7441 GACAAGCTGT GACCGCTCTCC GGGAGCTGCA TGTGTCAGAG GTTTTCACCG TCATCACCGA
 7501 AACCGCGAG GCAGGGTGCC TTGATGTGGG CGCCGGCGGT CGAGTGGCGA CGGCGCGGCT
 7561 TGTCCGCGCC CTGGTAGATT GCCTGGCCGT AGGCCAGCCA TTTTGAGCG GCCAGCGGCC
 7621 GCGATAGGCC GACCGGAAGC GGCGGGCGT AGGGAGCGA GCGACCAGAAG GGTAGCGCT
 7681 TTTTGCAGCT CTTCGGCTGT GCGCTGCCA GACAGTTATG CACAGGCCAG GCGGGTTTTA
 7741 AGAGTTTAA TAAGTTTAA AGAGTTTAG GCGGAAAAAT CGCCTTTTT CTCTTTTATA
 7801 TCAGTCACCT ACATGTGTGA CCGGTTCCC ATGTACGGCT TTGGGTTCCC AATGTACGGG
 7861 TTCCGGTTCC CAATGTACGG CTTGGGTTCC CAAATGTACG TGCTATCCAC AGGAAAGAGA
 7921 CCTTTTCGAC CTTTTCCCC TGCTAGGGCA ATTGCCCCTA GCATCTGCTC CGTACATTAG
 7981 GAACCGCCGG ATGCTTCGCC CTCGATCAGG TTGCGGTAGC GCATGACTAG GATCGGGCCA
 8041 GCCTGCCCCG CCTCCTCCCT CAAATGTAC TCCGGCAGGT CATTGACCC GATCAGCTG
 8101 CGCACGGTGA AACAGAACTT CTTGAACCT CCGCGCTGC CACTGCGTTC GTAGATCGTC
 8161 TTGAACAAACC ATCTGGCTTC TGCCCTGCC GCGGCGCGGC GTGCCAGCG GTAGAGAAA
 8221 CGGCCGATGC CGGGATCGAT CAAAAAGTAA TCGGGGTGAA CCGTCAGCAC GTCCGGGTT
 8281 TTGCCTCTG TGATCTCGCG GTACATCCAA TCAGCTAGCT CGATCTCGAT GTACTCCGGC
 8341 CGCCCGGTT CGCTTTTAC GATCTGTAG CGGCTAATCA AGGCTTCACC CTCGGATACC
 8401 GTCACCAGGC GGCGTTCTT GGCCCTCTTC GTACGCTGCA TGGCAACGTG CGTGGTGT
 8461 AACCGAATGC AGGTTCTAC CAGGTGCTCT TCTGCTTTC CGCCATCGGC TCGCCGGCAG
 8521 AACTTGAGTA CGTCCGCAAC GTGTGGACGG AACACGCGGC CGGGCTTGTC TCCCTTCCCT
 8581 TCCCGGTATC GGTCATGGA TTGGTTAGA TGGGAAACCG CCATCAGTAC CAGGTCGTA
 8641 TCCCACACAC TGGCCATGCC GGCGGGCCCT GCGGAAACCT CTACGTGCCG GTCTGGAAGC
 8 /U1 TCGTAGCGGA TCACCTCGCC AGCTCGTCGG TCACGCTTCG ACAGACGGAA AACGGCCACG
 8761 TCCATGATGC TGCGACTATC GCGGGTGCC ACGTATAGA GCATCGGAAC GAAAAAAATCT
 8821 GGTTGCTCGT CGCCCTGGG CGGCTTCTA ATCGACGGCG CACCGGCTGC CGGCGGTTGC
 8881 CGGGATTCTT TGCGGATTG TGCGACTATC GCGGGTGCC ACGTATAGA GCATCGGAAC GAAAAAAATCT
 8941 GCCTCGATGC GTTGCCTG GCGGGCTGC GCGGCCTTCA ACTTCTCCAC CAGGTATCA
 9001 CCCAGCGCC CGCCGATTG TACCGGGCCG GATGGTTGC GACCGTCACG CGGATTCCTC
 9061 GGGCTTGGG GTTCCAGTGC CATTGCAGGG CGGCAGACA ACCCAGCCGC TTACGCTGG
 9121 CCAACCGCCC GTTCCCTCCAC ACATGGGGCA TTCCACGGCG TCGGTGCCGT GTGTTCTTG
 9181 ATTTTCCATG CGCCCTCCCT TAGCCGCTAA AATTCTATCTA CTCATTATT CATTGCTCA
 9241 TTTACTCTGG TAGCTGCGCG ATGTATTAG ATAGCAGCTC GGTAATGGTC TTGCTTGGC
 9301 GTACCCGTA CATCTTCAGC TTGGTGTGAT CCTCCGCCGG CAACTGAAAG TTGACCGCT
 9361 TCATGGCTGG CGTGTCTGCC AGGCTGGCCA ACGTTGCAGC CTTGCTGCTG CGTGCCTCG
 9421 GACGGCCGGC ACTTAGCGTG TTTGTGCTT TGCTCATTCT CTCTTTACCT CATTAACTCA
 9481 AATGAGTTT GATTTAATT CAGCGGCCAG CGCCTGGACC TCGCGGGCAG CGTCGCCCTC
 9541 GGGTTCTGAT TCAAGAACGG TTGTGCCGGC GGCGGCAGTG CCTGGGTAGC TCACGCGCTG
 9601 CGTGATACGG GACTCAAGAA TGGGCAGCTC GTACCCGGCC AGCGCCTCGG CAAACCTCACC
 9661 GCCGATGCGC GTGCCCTTGA TCGCCCGCGA CACGACAAAG GCCGCTTGTGTA GCCTTCCATC
 9721 CGTGACCTCA ATGCGCTGCT TAACCAGCTC CACCAAGTCC GCGGTGGCCC ATATGCGTA
 9781 AGGGCTTGGC TGCACCGGAA TCAGCACGAA GTCGGCTGCC TTGATCGGG ACACAGCAA
 9841 GTCCGGCCGCC TGGGGCGCTC CGTCGATCAC TACGAAGTCC CGCCGGCCGA TGGCCTTCAC
 9901 GTCGGGTCA ATGCGCTGCC GGTCGATGCC GACAAAGGGT AGCGGGTGTAT CTTCCGCAC
 9961 GGCCGCCAA TCGCGGGCAC TGCCCTGGGG ATCGGAATCG ACTAACAGAA CATCGGCC
 10021 GGCGAGTTGC AGGGCGCGGG CTAGATGGGT TGCGATGGTC GTCTTGCCGT ACCCGCC
 10081 CTGGTTAAGT ACAGCGATAA CCTTCATGCG TTCCCTTGC GTATTGTTT ATTTACTCAT
 10141 CGCATCATAT ACGCAGCGAC CGCATGACGC AAGCTGTTT ACTCAAATAC ACATCAC
 10201 TTTAGACGGC GGCGCTCGGT TTCTTCAGCG GCCAAGCTGG CGGGCCAGGC CGCCAGCTG

Supplemental Figure S9. F-SHMT08cΔ+H134A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

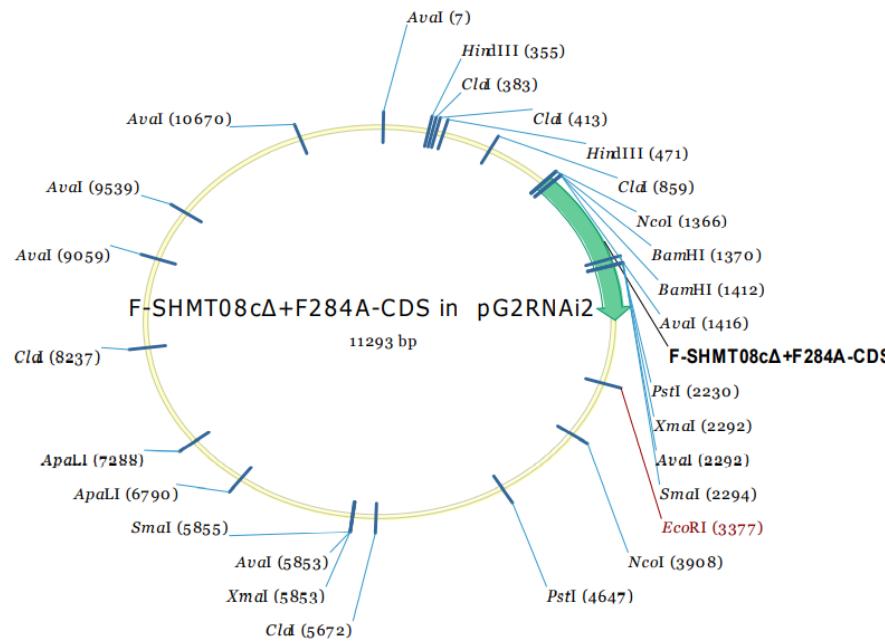
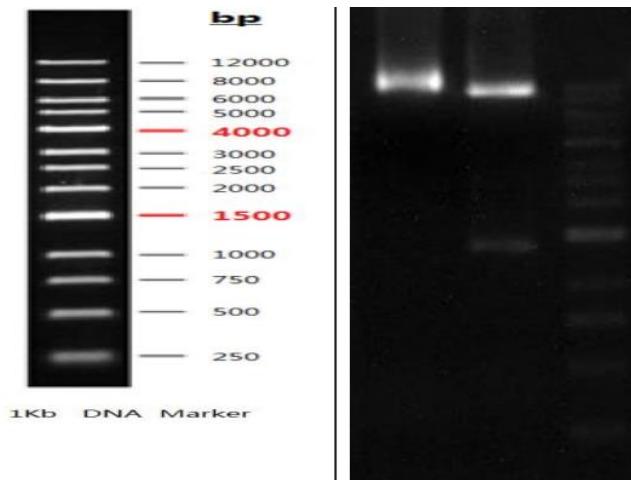
10261 GCATCAGACA AACCGGCCAG GATTTCATGC AGCCGACGG TTGAGACGTG CGCGGGCGGC
10321 TCGAACACGT ACCCGGCCGC GATCATCTCC GCCTCGATCT CTTCGGTAAT GAAAAACGGT
10381 TCGTCCTGGC CGTCCTGGTG CGGTTTCATG CTTGTTCTC TTGGCGTTCA TTCTCGGC
10441 CCGCCAGGGC GTGCCCTCG GTCAATGCGT CCTCACGAA GGCACCGCGC CGCCTGGCCT
10501 CGGTGGCGT CACTTCCTCG CTGCGCTCAA GTGCGCGGTA CAGGGTCGAG CGATGCACGC
10561 CAAGCAGTGC AGCCGCCTCT TTCACGGTGC GGCCTTCCTG GTCGATCAGC TCGCGGGCGT
10621 GCGCGATCTG TGCCGGGTG AGGGTAGGGC GGGGGCCAAA CTTCACGCCT CGGGCCTTGG
10681 CGGCCTCGCG CCCGCTCCGG GTGCGGTGCA TGATTAGGGA ACGCTCGAAC TCGGCAATGC
10741 CGCGAACAC GGTCAACACC ATGCGGCCGG CGGGCGTGGT GGTGTCGGCC CACGGCTCTG
10801 CCAGGCTACG CAGGCCCGCG CGGGCCTCCT GGATGCGCTC GGCAATGTCC AGTAGGTCGC
10861 GGGTGCTGCG GGCCAGGC GG TCTAGCCTGG TCACTGTCAC AACGTCGCCA GGGCGTAGGT
10921 GGTCAAGCAT CCTGGCCAGC TCCGGCGGT CGCGCCTGGT GCCGGTGATC TTCTCGGAAA
10981 ACAGCTTGGT GCAGCCGGCC GCGTGCAGTT CGGCCCGTTG GTTGGTCAAG TCCTGGTC
11041 CGGTGCTGAC GCGGGCATAG CCCAGCAGGC CAGCGGCCGGC GCTCTGTTC ATGGCGTAAT
11101 GTCTCCGGTT CTAGTCGCAA GTATTCTACT TTATGCGACT AAAACACGCG ACAAGAAAAC
11161 GCCAGGAAAA GGGCAGGGCG GCAGCCTGTC GCGTAACCTA GGACTTGTGC GACATGTC
11221 TTTCAGAAGA CGGCTGCACT GAACGTCAGA AGCCGACTGC ACTATAGCAG CGGAGGGTT
11281 GGATCAAAGT ACT

Gene Name F-SHMT08cΔ+F284A-CDS

Cloning Vector pG2RNAi2

Length (bp) 1430

Cloning Sites Ascl-AvrlI



Supplemental Figure S10. F-SHMT08cΔ+F284A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

Detailed Sequence of the Whole Construct:

1 TTGATCCCGA GGGGAACCT GTGGTTGGCA TGCACATACA AATGGACGAA CGGATAAAC
61 TTTTCACGCC CTTTTAAATA TCCGTTATTG TAATAAACGC TCTTTCTCT TAGGTTTACC
121 CGCCAATATA TCCTGTAAA CACTGATAGT TTAAACTGAA GGCGGGAAAC GACAATCTGA
181 TCCAAGCTCA AGCTCATTG CCATTCAAGGC TGCGCAACTG TTGGGAAGGG CGATCGGTGC
241 GGGCCTCTTC GCTATTACGC CAGCTGGCGA AAGGGGGATG TGCTGCAAGG CGATTAAGTT
301 GGGTAACGCC AGGGTTTCC CAGTCACGAC GTTGTAAAAC GACGGCCAGT GCCAAGCTTA
361 TTACCCTGTT ATCCCTAGAT ATCGATTTG GCTACCTTAA GGTAGCCAAA ATCGATCACT
421 AGTGCGGCCG CGGGCCCAAT ATAACAACGA CGTCGTAACA GATAAAGCGA AGCTTGAAGG
481 TGCATGTGAC TCCGTCAAGA TTACGAAACC GCCAACTACC ACGCAAATTG CAATTCTCAA
541 TTTCCTAGAA GGACTCTCCG AAAATGCATC CAATACCAAA TATTACCCGT GTCATAGGCA
601 CCAAGTGACA CCATACATGA ACACCGGTCA CAATATGACT GGAGAAGGGT TCCACACCTT
661 ATGCTATAAA ACGCCCCACA CCCCTCCTCC TTCCCTCGCA GTTCAATTCC AATATATTCC
721 ATTCTCTCTG TGTATTTCCC TACCTCTCCC TTCAAGGTTA GTCGATTTCT TCTGTTTTTC
781 TTCTTCGTTT TTTCCATGAA TTGTGTATGT TCTTGATCA ATACGATGTT GATTTGATTG
841 TGTTTGTGTT GGTTTCATCG ATCTTCAATT TTCATAATCA GATTCAAGCTT TTATTATCTT

901	TACAACAACG	TCCTTAATTT	GATGATTCTT	TAATCGTAGA	TTTGCTCTAA	TTAGAGCTTT	2461	TCTCTGTAAC	ATTACTGTAA	ACAAGAACGC	TGTTTTGGT	GATAGCAGTG	CCTTGGCCCC
961	TTCATGTCAG	ATCCCTTAC	AACAAGCCTT	AATTGTTGAT	TCATTAATCG	TAGATTAGGG	2521	TGGTGGAGTG	CGAATTGGTG	CCCTGCCAT	GACTTCTAGG	GGTTGGTTG	AAAAAGACTT
1021	CTTTTTCAT	TGATTACTTC	AGATCCGTTA	AACGTAACCA	TAGATCAGGG	CTTTTCATG	2581	TGAGCAGATT	GGTGAGTTCC	TTCACCGTGC	TGTGACTCTC	ACACTGGAGA	TCCAGAAGGA
1081	AATTACTTC	GATCCGTTAA	ACAACAGCCT	TATTTTTAT	ACTTCTGTGG	TTTTCAAGA	2641	GCATGGCAA	CTTCTCAAGG	ATTCAACAA	GGGCTCGTC	ACAACAAAGG	CTATTGAAGA
1141	AATTGTTCA	ATCCGTTGAC	AAAAAGCCTT	ATTCGTTGAT	TCTATATCGT	TTTCGAGAG	2701	TCTCAAAGCT	GATGTTGAGA	AGTTCTCTGC	CTTGTGTTGAC	ATGCCTGGCT	TCCTGGTATC
1201	ATATTGCTCA	GATCTGTTAG	CAACTGCCCT	GTGGTGTGAT	TCTATTGCCG	TGGATTAGGG	2761	TGAAATGAAG	TACAAGGATT	AGCCTAGGTT	CGAGTATTAT	GGCATGGGA	AAACTGTTT
1261	TTTTTTCA	CGAGATTGCT	TCAGATCCGT	ACTTAAGATT	ACGTAATGGA	TTTGATTCT	2821	TCTTGTACCA	TTTGTGTTG	TTGTAATTAA	CTGTGTTTT	TATCGGTTT	TCGCTATCGA
1321	GATTTATCTG	TGATTGTTGA	CTCGACAGCG	GCCGCACC _{GG}	CGCGCCATGG	ATCCAGTAAG	2881	ACTGTGAAAT	GGAAATGGAT	GGAGAAAGAGT	TAATGAATGA	TATGGTCCTT	TTGTTCATTC
1381	CGTGTGGGGT	AACACGCCCT	TGGCAGCGGT	GGATCCCAG	ATCCATGACC	TCATCGAGAA	2941	TCAAATTAAT	ATTATTGTT	TTTCTCTTA	TTTGTGTTG	GTTGAATTG	AAATTATAAG
1441	GGAGAACGCG	CGTCAATGCC	GCGGAATCGA	GCTCATCGCC	TCCGAGAACT	TCACCTCCTT	3001	AGATATGCAA	ACATTTGTT	TTGAGTAAA	ATGTGTCAA	TCGTGGCCTC	TAATGACCGA
1501	CGCCGTCATC	GAGGCCCTCG	GCAGCGCTCT	CACGAACAAA	TACTCCGAGG	GCATGCCGG	3061	AGTTAATATG	AGGAGTAAA	CACTGTAGT	TGTACCATTA	TGCTTATTCA	CTAGGCAACA
1561	CAACCGCTAC	TACGGCGGCA	ATGAATACAT	CGACCAGATC	GAAAACCTCT	CCCGCTCACG	3121	AATATATTTT	CAGACCTAGA	AAAGCTGCAA	ATGTTACTGA	ATACAAGTAT	GTCCTCTTGT
1621	CGCCCTCCAA	GCCTTCCACC	TCGACGCCA	ATCCTGGGGC	GTCAACGTCC	AGCCCTACTC	3181	GTTTTAGACA	TTTATGAACT	TTCCTTATG	TAATTTCCA	GAATCCTTGT	CAGATTCTAA
1681	CGGCTCCCG	GCCAACCTCG	CCGCTACAC	CGCGCTCCTC	AACCCCCACG	ACCGCATCAT	3241	TCATTGCTTT	ATAATTATAG	TTATACTCAT	GGATTTGTAG	TGAGTATGA	AAATATTTT
1741	GGGGCTAGAT	CTCCGCTCCG	GCGGCCACCT	CACCCACGGC	TACTACACCT	CCGGCGGAAA	3301	TAATGCATTT	TATGACTTGC	CAATTGATTG	ACAACATGCA	TCAATCCGCG	GTTATGACTC
1801	GAAGATCTCC	GCCACCTCCA	TTTACTTCGA	GAGTCTCCCT	TACAAGGTAA	ACTCCACAC	3361	TCTTAAGAGA	GTCATGAATT	CGAGCTTCCA	GAAGGTAATT	ATCCAAGATG	TAGCATCAAG
1861	CGGCTACATC	GAETACGACC	GCTTGAAGA	AAAAGCCCTA	GACTTCAGGC	CAAAACTCAT	3421	AATCCAATGT	TTACGGAAA	AACTATGGAA	GTATTATGTG	AGCTCAGCAA	GAAGCAGATC
1921	AATCTGCGGT	GGCAGCGCGT	ACCTCGCGA	TTGGGACTAC	AAACGTTTCA	GGGAAGTCGC	3481	AATATGCGGC	ACATATGCAA	CCTATGTTCA	AAAATGAAGA	ATGTACAGAT	ACAAGATCCT
1981	TGATAAGTGC	GGAGCATTGC	TTCTCTGCGA	CATGGCGAC	ACTAGCGGCC	TTGTGGCCG	3541	ATACTGCCAG	AATACGAAGA	AGAACATGTA	GAAATTGAAA	AAGAAGAAC	AGGCGAAGAAA
2041	GCAGGAAGTG	AACACGCCCT	TCGAGTATTG	CGACATTGTG	ACCACCACGA	CTCACAAAGAG	3601	AAGAATCTTG	AAGACGTAAG	CACTGACGAC	AAACATGAAA	AGAAGAAGAT	AAGGTCGGTG
2101	CTTGGGGGGC	CCACGTGCGG	GGATGATCTT	TTACCGGAAG	GGCCCCAAGC	CGCCGAAGAA	3661	ATTGTGAAAG	AGACATAGAG	GACACATGTA	AGGTGGAAA	TGTAAGGGCG	GAAAGTAACC
2161	GGGGCAGCCG	GAGAACGCGG	TTTATGATT	CGAGGACAAG	ATTAACCTCG	CGGTGGCTCC	3721	TTATCACAAA	GGAATCTTAT	CCCCCACTAC	TTATCCTTT	ATATTTTCC	GTGTCATTT
2221	TTCGCTGCA	GGTGGGCCCC	ACAACCACCA	GATCGGTGCT	CTCGCCGTGG	CGCTGAAGCA	3781	TGCCCTTGAG	TTTCCCTATA	TAAGGAACCA	AGTCGGCAT	TTGTGAAAAC	AAGAAAAAAAT
2281	GGCGCGCTCG	CCCGGGTTA	AGGCTACGC	GAAGCAGGTT	AAAGGCAACG	CGCTTGCCTG	3841	TGTTGTAAG	CTATTTCTT	TGAAGTACTG	AGGATACAAC	TTCAGAGAAA	TTTGTAAAGTT
2341	TGGAAAATAC	TTGATGGGG	AAGGGTACAG	CCTTGTCACT	GGCGGAACGG	AGAACCATCT	3901	TGTGATCCAT	GGTGAGCAAG	GGCGAGGAGC	TGTTCACCGG	GGTGGTGCCTC	ATCCTGGTCG
2401	TGTTTGTGG	GATCTGAGAC	CTCTGGATT	GACTGGGTAT	AAGGTGGAGA	AACTCTGTGA	3961	AGCTGGACGG	CGACGTAAC	GGCCACAAAGT	TCAGCGTGT	CGCGAGGGC	GAGGGCGATG

Supplemental Figure S10. F-SHMT08cΔ+F284A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

4021 CCACCTACGG CAAGCTGACC CTGAAGTTCA TCTGCACCAAC CGGCAAGCTG CCCGTGCCCT
 4081 GGCCCACCC CGTGACCACC TTCACCTACG GCGTGCAGTG CTTCAGCCGC TACCCCGACC
 4141 ACATGAAGCA GCACGACTTC TTCAAGTCCG CCATGCCCGA AGGCTACGTC CAGGAGCGCA
 4201 CCATCTTCTT CAAGGACGAC GGCAACTACA AGACCCGCGC CGAGGTGAAG TTGAGGGCG
 4261 ACACCCCTGGT GAACCCGATC GAGCTGAAGG GCATCGACTT CAAGGAGGAC GGCAACATCC
 4321 TGGGGCACAA GCTGGAGTAC AACTACAACA GCCACAACGT CTATATCATG GCCGACAAGC
 4381 AGAAGAACCG CATCAAGGTG AACTCAAGA TCCGCCACAA CATCGAGGAC GGCAGCGTGC
 4441 AGCTCGCCGA CCACTACCAAG CAGAACACCC CCATCGCGA CGGCCCCGTG CTGCTGCCCG
 4501 ACAACCACTA CCTGAGCACC CAGTCCGCC TGAGCAAAGA CCCCAACGAG AAGCGCGATC
 4561 ACATGGTCCT GCTGGAGTTC GTGACCGCCG CCGGGATCAC TCACGGCATG GACGAGCTGT
 4621 ACAAGTAAAG CGGCCGCCCG GCTGCAGATC GTTCAAACAT TTGGCAATAA AGTTTCTTAA
 4681 GATTGAATCC TGTTGCCGGT CTTGCGATGA TTATCATATA ATTCTGTGTT AATTACGTTA
 4741 AGCATGTAAT AATTAACATG TAATGCATGA CGTTATTTAT GAGATGGGTT TTTATGATTA
 4801 GAGTCCCGCA ATTATACATT TAATACCGA TAGAAAACAA AATATAGCGC GCAAACCTAGG
 4861 ATAAAATTATC GCGCGCGGT TCATCTATGT TACTAGATCC GATGATAAGC TGTCAAACAT
 4921 GAGAATTAAT TCGTAATCAT GTCATAGCTG TTCCCTGTGT GAAATTGTTA TCCGCTCACA
 4981 ATTCACACACA ACATACGAGC CGGAAGCATA AAGTGTAAAG CCTGGGGTGC CTAATGAGTG
 5041 AGCTAACTCA CATTAAATTGC GTTGCCTCA CTGCCCGCTT TCCAGTCGGG AAACCTGTGC
 5101 TGCCAGCTGC ATTAATGAAT CGGCCAACGC GCGGGGAGAG GCGGTTGCG TATTGGCTAG
 5161 AGCAATTCCG CGTTAATTCA GTACATTAAA AACGTCCGCA ATGTGTTATT AAGTTGTCTA
 5221 AGCGTCAATT TGTTTACACC ACAATATATC CTGCCACCAAG CCAGCCAACA GCTCCCCGAC
 5281 CGGCAGCTCG GCACAAAATC ACCACTCGAT ACAGGCAGCC CATCAGTCGG GGACGGCGTC
 5341 AGCGGGAGAG CGGTTGTAAG GCGCAGACT TTGCTCATGT TACCGATGCT ATTGGAAAGA
 5401 ACGCCTACCA AGCTGCCGGG TTGAAACAC GGATGATCTC GCGGAGGGTA GCATGTTGAT
 5461 TGTAACGATG ACAGAGCGTT GCTGCCTGTG ATCCAGATCA TGAACAATAA AACTGTCTGC
 5521 TTACATAAAC AGTAATACAA GGGGTGTTAT GAGCCATATT CAACGGAAA CGTCTGCTC
 5581 TAGGCCCGA TTAAATTCCA ACATGGATGC TGATTTATAT GGGTATAAAT GGGCTCGCGA
 5641 TAATGTCGGG CAATCAGGTG CGACAATCTA TCGATTGTAT GGGAAAGCCCG ATGCGCCAGA
 5701 GTTGTTCCTG AAACATGGCA AAGGTAGCGT TGCCAATGATG GTTACAGATG AGATGGTCAG
 5761 ACTAAACTGG CTGACCGAAT TTATGCCCTC TCCGACCATC AAGCATTAA TCCGTACTCC
 5821 TGATGATGCA TGGTTACTCA CCACTGCGAT CCCCGGGAAA ACAGCATTCC AGGTATTAGA
 5881 AGAATATCCT GATTCAAGGTG AAAATATTGT TGATGCGCTG GCAGTGTTC TGCGCCGGTT
 5941 GCATTGATT CCTGTTGTA ATTGTCCCTT TAACAGCGAT CGCGTATTTC GTCTCGCTCA
 6001 GGCGCAATCA CGAATGAATA ACGGTTGGT TGATGCGAGT GATTTGATG ACGAGCGTAA
 6061 TGGCTGCCCT GTTGAACAAG TCTGGAAAGA AATGCATAAA CTTTGCCAT TCTCACCGGA
 6121 TTCAGTCGTC ACTCATGGTG ATTCTCACT TGATAACCTT ATTGTTGACG AGGGGAAATT
 6181 AATAGGTTGT ATTGATGTTG GACGAGTCGG AATCGCAGAC CGATACCAAG ATCTGCCAT
 6241 CCTATGGAAC TGCCCTGGTG AGTTTCTCC TTCATTACAG AAACGGCTT TTCAAAAATA
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 6361 CTAAGAATTA ATTCACTGATC CTGCATGACC AAAATCCCTT AACGTGAGTT TTCGTTCCAC
 6421 TGAGCGTCAG ACCCCGTAGA AAAGATCAA GGATCTTCTT GAGATCCTT TTTCTGCGC
 6481 GTAATCTGCT GCTTGCACAC AAAAAAACCA CCGCTACCAAG CGGTGGTTG TTTGCCGGAT
 6541 CAAGAGCTAC CAACTCTTT TCCGAAGGTA ACTGGCTTCA GCAGAGCGCA GATACCAAAT
 6601 ACTGCTCTTC TAGTGTAGCC GTAGTTAGGC CACCACTTCA AGAACTCTGT AGCACCCGCT
 6661 ACATACCTCG CTCTGCTAAT CCTGTTACCA GTGGCTGCTG CCAGTGGCGA TAAGTCGTG
 6721 CTTACCGGGT TGGACTCAAG ACGATAGTTA CCGGATAAGG CGCAGCGTC GGGCTGAACG
 6781 GGGGGTCGT GCACACAGCC CAGCTGGAG CGAACGACCT ACACCGAAGT GAGATACCTA
 6841 CAGCGTGAGC TATGAGAAAG CGCCACGCTT CCCGAAGGGA GAAAGGCGGA CAGGTATCCG
 6901 GTAAGCGCA GGGTCGGAAC AGGAGAGCGC ACGAGGGAGC TTCCAGGGGG AAACGCCCTGG
 6961 TATCTTATA GTCCTGTCGG GTTTCGCCAC CTCTGACTTG AGCGTCGATT TTTGTGATGC
 7021 TCGTCAGGGG GGCAGGAGCCT ATGGAAAAAC GCCAGCAACG CGGCCTTTT ACGGTTCTG
 7081 GCCTTTGCT GGCCTTTGC TCACATGTT TTTCTGCGT TATCCCTGTA TTCTGTGGAT

Supplemental Figure S10. F-SHMT08cΔ+F284A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

7141 AACCGTATTA CCGCCTTGAGTGAGCTGAT ACCGCTCGCC GCAGCCGAAC GACCGAGCGC
 7201 AGCGAGTCAG TGAGCGAGGA AGCGGAAGAG CGCCTGATGC GGTATTTCT CCTTACGCAT
 7261 CTGTGCGGTA TTTCACACCG CATATGGTGC ACTCTCAGTA CAATCTGCTC TGATGCCGCA
 7321 TAGTTAACGCC AGTATACACT CCGCTATCGC TACGTGACTG GGTATGGCT GCGCCCCGAC
 7381 ACCCGCCAAC ACCCGCTGAC GCGCCCTGAC GGGCTTGTCT GCTCCCGCA TCCGCTTACA
 7441 GACAAGCTGT GACCGCTCTCC GGGAGCTGCA TGTGTCAGAG GTTTTCACCG TCATCACCGA
 7501 AACCGCGAG GCAGGGTGCC TTGATGTGGG CGCCGGCGGT CGAGTGGCGA CGGCGCGGCT
 7561 TGTCCGCGCC CTGGTAGATT GCCTGGCCGT AGGCCAGCCA TTTTGAGCG GCCAGCGGCC
 7621 GCGATAGGCC GACCGGAAGC GGCGGGCGT AGGGAGCGA GCGACCAGAAG GGTAGCGCT
 7681 TTTTGCAGCT CTTCGGCTGT GCGCTGCCA GACAGTTATG CACAGGCCAG GCGGGTTTTA
 7741 AGAGTTTAA TAAGTTTAA AGAGTTTAG GGGAAAAAT CGCCTTTTT CTCTTTTATA
 7801 TCAGTCACCT ACATGTGTGA CCGGTTCCC ATGTACGGCT TTGGGTTCCC AATGTACGGG
 7861 TTCCGGTTCC CAATGTACGG CTTGGGTTCC CAAATGTACG TGCTATCCAC AGGAAAGAGA
 7921 CCTTTTCGAC CTTTTCCCC TGCTAGGGCA ATTGCCCCTA GCATCTGCTC CGTACATTAG
 7981 GAACCGCCGG ATGCTTCGCC CTCGATCAGG TTGCGGTAGC GCATGACTAG GATCGGGCCA
 8041 GCCTGCCCG CCTCCTCCCT CAAATGTAC TCCGGCAGGT CATTGACCC GATCAGCTG
 8101 CGCACGGTGA AACAGAACTT CTTGAACCT CCGCGCTGC CACTGCGTTC GTAGATCGTC
 8161 TTGAACAAACC ATCTGGCTTC TGCCCTGCC GCGGCGCGGC GTGCCAGCG GTAGAGAAA
 8221 CGGCCGATGC CGGGATCGAT CAAAAAGTAA TCGGGGTGAA CCGTCAGCAC GTCCGGGTT
 8281 TTGCCTCTG TGATCTCGCG GTACATCCAA TCAGCTAGCT CGATCTCGAT GTACTCCGGC
 8341 CGCCCGGTT CGCTTTTAC GATCTGTAG CGGCTAATCA AGGCTTCACC CTCGGATACC
 8401 GTCACCAGGC GGCGTTCTT GGCCCTCTTC GTACGCTGCA TGGCAACGTG CGTGGTGT
 8461 AACCGAATGC AGGTTCTAC CAGGTGCTCTT CGCCATCGGC TCGCCGGCAG
 8521 AACTTGAGTA CGTCCGCAAC GTGTGGACGG AACACGCGGC CGGGCTTGTC TCCCTTCCCT
 8581 TCCCGGTATC GGTCATGGA TTGGTTAGA TGGGAAACCG CCATCAGTAC CAGGTCGTA
 8641 TCCCACACAC TGGCCATGCC GGCGGGCCCT GCGGAAACCT CTACGTGCCG GTCTGGAAGC
 8 /U1 TCGTAGCGGA TCACCTCGCC AGCTCGTCGG TCACGCTTCG ACAGACGGAA AACGGCCACG
 8761 TCCATGATGC TGCGACTATC GCGGGTGCC ACGTATAGA GCATCGGAAC GAAAAAAATCT
 8821 GGTTGCTCGT CGCCCTGGG CGGCTTCTA ATCGACGGCG CACCGGCTGC CGGCGGTTGC
 8881 CGGGATTCTT TGCGGATTG TGCGACTATC GCGGGTGCC ACGTATAGA GCATCGGAAC GAAAAAAATCT
 8941 GCCTCGATGC GTTGCCTG GCGGGCTGC GCGGCCTTCA ACTTCTCCAC CAGGTATCA
 9001 CCCAGCGCC CGCCGATTG TACCGGGCCG GATGGTTGC GACCGTCACG CGGATTCCTC
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 9301 GTACCCGTA CATCTTCAGC TTGGTGTGAT CCTCCGCCGG CAACTGAAAG TTGACCGCT
 9361 TCATGGCTGG CGTGTCTGCC AGGCTGGCCA ACGTTGCAGC CTTGCTGCTG CGTGCCTCG
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 9541 GGGTTCTGAT TCAAGAACGG TTGTGCCGGC GGCGGCAGTG CCTGGGTAGC TCACGCGCTG
 9601 CGTGATACGG GACTCAAGAA TGGGCAGCTC GTACCCGGCC AGCGCCTCGG CAAACCTCACC
 9661 GCCGATGCGC GTGCCCTTGA TCGCCCGCGA CACGACAAAG GCCGCTTGTGTA GCCTTCCATC
 9721 CGTGACCTCA ATGCGCTGCT TAACCAGCTC CACCAAGTCC GCGGTGGCCC ATATGCGTA
 9781 AGGGCTTGGC TGCACCGGAA TCAGCACGAA GTCGGCTGCC TTGATCGGG ACACAGCAA
 9841 GTCCGCCGCC TGGGGCGCTC CGTCGATCAC TACGAAGTCC CGCCGGCCGA TGGCCTTCAC
 9901 GTCGGGTCA ATGCGCTGCC GGTCGATGCC GACAACGGTT AGCGGGTGTAT CTTCCGCAC
 9961 GGCCGCCAA TCGCGGGCAC TGCCCTGGGG ATCGGAATCG ACTAACAGAA CATCGGCC
 10021 GGCGAGTTGC AGGGCGCGGG CTAGATGGGT TGCGATGGTC GTCTTGCCGT ACCCGCC
 10081 CTGGTTAAGT ACAGCGATAA CCTTCATGCG TTCCCTTGC GTATTGTTT ATTTACTCAT
 10141 CGCATCATAT ACGCAGCGAC CGCATGACGC AAGCTGTTT ACTCAAATAC ACATCAC
 10201 TTTAGACGGC GGCGCTCGGT TTCTTCAGCG GCCAAGCTGG CGGGCCAGGC CGCCAGCTG

Supplemental Figure S10. F-SHMT08cΔ+F284A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

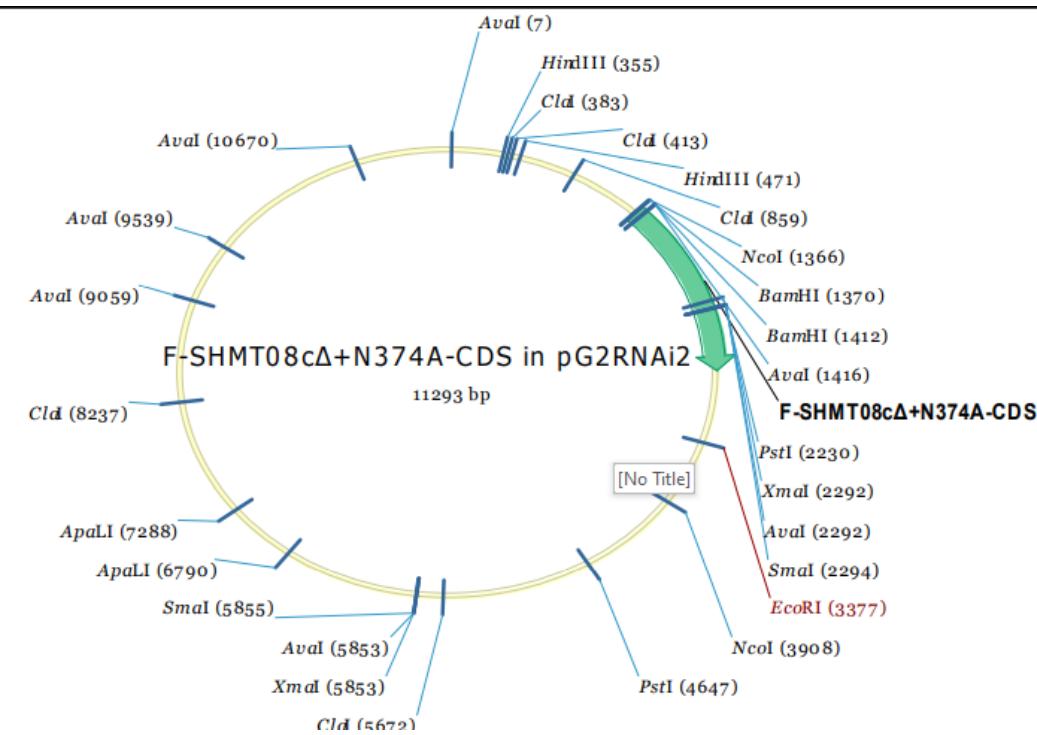
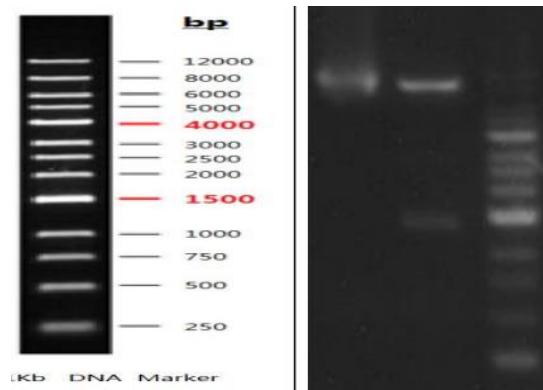
10261 GCATCAGACA AACCGGCCAG GATTTCATGC AGCCGACGG TTGAGACGTG CGCGGGCGGC
10321 TCGAACACGT ACCCGGCCGC GATCATCTCC GCCTCGATCT CTTCGGTAAT GAAAAACGGT
10381 TCGTCCTGGC CGTCCTGGTG CGGTTTCATG CTTGTTCTC TTGGCGTTCA TTCTCGGC
10441 CCGCCAGGGC GTGCCCTCG GTCAATGCGT CCTCACGAA GGCACCGCGC CGCCTGGCCT
10501 CGGTGGCGT CACTTCCTCG CTGCGCTCAA GTGCGCGGTA CAGGGTCGAG CGATGCACGC
10561 CAAGCAGTGC AGCCGCCTCT TTCACGGTGC GGCCTTCCTG GTCGATCAGC TCGCGGGCGT
10621 GCGCGATCTG TGCCGGGTG AGGGTAGGGC GGGGGCCAAA CTTCACGCCT CGGGCCTTGG
10681 CGGCCTCGCG CCCGCTCCGG GTGCGGTGCA TGATTAGGGA ACGCTCGAAC TCGGCAATGC
10741 CGCGAACAC GGTCAACACC ATGCGGCCGG CGGGCGTGGT GGTGTCGGCC CACGGCTCTG
10801 CCAGGCTACG CAGGCCCGCG CGGGCCTCCT GGATGCGCTC GGCAATGTCC AGTAGGTCGC
10861 GGGTGCTGCG GGCCAGGC GG TCTAGCCTGG TCACTGTCAC AACGTCGCCA GGGCGTAGGT
10921 GGTCAAGCAT CCTGGCCAGC TCCGGCGGT CGCGCCTGGT GCCGGTGATC TTCTCGGAAA
10981 ACAGCTTGGT GCAGCCGGCC GCGTGCAGTT CGGCCCGTTG GTTGGTCAAG TCCTGGTC
11041 CGGTGCTGAC GCGGGCATAG CCCAGCAGGC CAGCGGCCGGC GCTCTGTTC ATGGCGTAAT
11101 GTCTCCGGTT CTAGTCGCAA GTATTCTACT TTATGCGACT AAAACACGCG ACAAGAAAAC
11161 GCCAGGAAAA GGGCAGGGCG GCAGCCTGTC GCGTAACCTA GGACTTGTGC GACATGTC
11221 TTTCAGAAGA CGGCTGCACT GAACGTCAGA AGCCGACTGC ACTATAGCAG CGGAGGGTT
11281 GGATCAAAGT ACT

Gene Name F-SHMT08cΔ+N374A-CDS

Cloning Vector pG2RNAi2

Length (bp) 1430

Cloning Sites Ascl-AvrlI



Supplemental Figure S11. F-SHMT08cΔ+N374A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

Detailed Sequence of the Whole Construct:

1 TTGATCCCGA GGGGAACCT GTGGTTGGCA TGCACATACA AATGGACGAA CGGATAAAC
61 TTTTCACGCC CTTTTAAATA TCCGTTATTG TAATAAACGC TCTTTCTCT TAGGTTTACC
121 CGCCAATATA TCCTGTAAA CACTGATAGT TTAAACTGAA GGCGGGAAAC GACAATCTGA
181 TCCAAGCTCA AGCTCATTG CCATTCAAGGC TGCGCAACTG TTGGGAAGGG CGATCGGTGC
241 GGGCCTCTTC GCTATTACGC CAGCTGGCGA AAGGGGGATG TGCTGCAAGG CGATTAAGTT
301 GGGTAACGCC AGGGTTTCC CAGTCACGAC GTTGTAAAAC GACGGCCAGT GCCAAGCTTA
361 TTACCCTGTT ATCCCTAGAT ATCGATTTG GCTACCTTAA GGTAGCCAAA ATCGATCACT
421 AGTGCGGCCG CGGGCCCAAT ATAACAACGA CGTCGTAACA GATAAAGCGA AGCTTGAAGG
481 TGCATGTGAC TCCGTCAAGA TTACGAAACC GCCAACTACC ACGCAAATTG CAATTCTCAA
541 TTTCCTAGAA GGACTCTCCG AAAATGCATC CAATACCAAA TATTACCCGT GTCATAGGCA
601 CCAAGTGACA CCATACATGA ACACCGTCA CAATATGACT GGAGAAGGGT TCCACACCTT
661 ATGCTATAAA ACGCCCCACA CCCCTCCTCC TTCCCTCGCA GTTCAATTCC AATATATTCC
721 ATTCTCTCTG TGTATTTCCC TACCTCTCCC TTCAAGGTTA GTCGATTTCT TCTGTTTTTC
781 TTCTTCGTTT TTTCCATGAA TTGTGTATGT TCTTGATCA ATACGATGTT GATTTGATTG
841 TGTTTGTGTT GGTTTCATCG ATCTTCAATT TTCATAATCA GATTCAAGCTT TTATTATCTT

901 TACAACAACG TCCTTAATTT GATGATTCTT TAATCGTAGA TTTGCTCTAA TTAGAGCTTT
 961 TTCATGTCAG ATCCCTTAC ACAAGCCTT AATTGTTGAT TCATTAATCG TAGATTAGGG
 1021 CTTTTTCAT TGATTACTTC AGATCCGTTA AACGTAACCA TAGATCAGGG CTTTTTCATG
 1081 AATTACTTC GATCCGTTAA ACAACAGCCT TATTTTTAT ACTTCTGTGG TTTTCAGAA
 1141 AATTGTTCA GATCCGTTAA ACAACAGCCT TATTTTTAT ACTTCTGTGG TTTTCAGAA
 1201 ATATTGCTCA GATCTGTTAG CAACTGCCTT GTTGTGAT TCTATTGCCG TGGATTAGGG
 1261 TTTTTTTCA CGAGATTGCT TCAGATCCGT ACTTAAGATT ACFTAATGGA TTTTGATTCT
 1321 GATTATCTG TGATTGTTGA CTCGACAGCG GCCGCACC_{GG} CGCGCCATGG ATCCAGTAAG
 1381 CGTGTGGGT AACACGCCCT TGGCGACGGT GGATCCCGAG ATCCATGACC TCATCGAGAA
 1441 GGAGAACGCG CGTCAATGCC GCGGAATCGA GCTCATGCC TCCGAGAACT TCACCTCCTT
 1501 CGCCGTCATC GAGGCCCTCG GCAGCGCTCT CACGAACAAA TACTCCGAGG GCATGCCGGG
 1561 CAACCGCTAC TACCGCGGCA ATGAATACAT CGACCAGATC GAAAACCTCT GCCGCTCACG
 1621 CGCCCTCCAA GCCTTCCACC TCGACGCCCA ATCCTGGGGC GTCAACGTCC AGCCCTACTC
 1681 CGGCTCCCCG GCCAACTTCG CGGCCTACAC CGCCGTCCTC AACCCCCACG ACCGCATCAT
 1741 GGGGCTAGAT CTCCGCTCCG GCGGCCACCT CACCCACGGC TACTACACCT CGGGCGGAAA
 1801 GAAGATCTCC GCCACCTCCA TTACTTCGA GAGTCTCCCT TACAAGGTA ACTCCACCCAC
 1861 CGGCTACATC GACTACGACC GCTTGGAAAGA AAAAGCCCTA GACTTCAGGC CAAAACTCAT
 1921 AATCTGCGGT GGAGCGCGT ACCCTCGCGA TTGGGACTAC AAACGTTCA GGGAAAGTCGC
 1981 TGATAAGTGC GGAGCATTGC TTCTCTCGA CATGGCGCAC ACTAGCGGCC TTGTGGCCGC
 2041 GCAGGAAGTG AACACGCCCT TCGAGTATTG CGACATTGTG ACCACCACGA CTCACAAGAG
 2101 CTTGCGGGGC CCACGTGCGG GGATGATCTT TTACCGGAAG GGCCCCAAGC CGCCGAAGAA
 2161 GGGGCAGCGG GAGAACGCGG TTATGATT CGAGGACAAG ATTAACCTCG CGGTGTTCCC
 2221 TTCGCTGCA GGTGGGCCCT ACAACCCACCA GATCGGTGCT CTCGCCGTGG CGCTGAAGCA
 2281 GCCCGCGTCG CCCGGTTA AGGCCTACGC GAAGCAGGTT AAGGCGAACG CCGTTGCGCT
 2341 TGGAAAATAC TTGATGGGGA AAGGGTACAG CCTTGTCACT GGCGAACGG AGAACCATCT
 2401 TGTTTGTGG GATCTGAGAC CTCTTGGATT GACTGGGTAT AAGGTGGAGA AACTCTGTGA
 2461 TCTCTGTAAC ATTACTGTTA ACAAGGCTGC TGTTTTGGT GATAGCAGTG CCTTGGCCCG
 2521 TGGTGGAGTG CGAATTGGTG CCCCTGCCAT GACTTCTAGG GGTTTGGTTG AAAAGACTT
 2581 TGAGCAGATT GGTGAGTCC TTCACCGTGC TGTGACTCTC ACACTGGAGA TCCAGAAGGA
 2641 GCATGGCAA CTTCTCAAGG ATTCACAA GGGTCTCGTC AACAAACAAGG CTATTGAAGA
 2701 TCTCAAAGCT GATGTTGAGA AGTTCTCTGC CTTGTTGAC ATGCCTGGCT TCCTGGTATC
 2761 TGAATGAAG TACAAGGATT AGCCTAGGTT CGAGTATTAT GGCATTGGGA AAAACTGTTT
 2821 TCTTGTACCA TTTGTTGTGC TTGTAATTAA CTGTGTTTT TATTGGTTT TCGCTATCGA
 2881 ACTGTGAAAT GGAAATGGAT GGAGAAGAGT TAATGAATGA TATGGTCCTT TTGTTCATTC
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 3061 AGTTAATATG AGGAGTAAAA CACTGTAGT TGTACCATTA TGCTTATTCA CTAGGCAACA
 3121 AATATTTTT CAGACCTAGA AAAGCTGCAA ATGTTACTGA ATACAAGTAT GTCCTCTGT
 3181 GTTTAGACA TTTATGAAC TTCCCTTATG TAATTTCCA GAATCCTTGT CAGATTCTAA
 3241 TCATTGCTT ATAATTATAG TTAACTCAT GGATTTGTAG TTGAGTATGA AAATATTTT
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Supplemental Figure S11. F-SHMT08cΔ+N374A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

4021 CCACCTACGG CAAGCTGACC CTGAAGTTCA TCTGCACCAAC CGGCAAGCTG CCCGTGCCCT
 4081 GGCCCACCC CGTGACCACC TTCACCTACG GCGTGCAGTG CTTCAGCCGC TACCCCGACC
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 4681 GATTGAATCC TGTTGCCGGT CTTGCGATGA TTATCATATA ATTCTGTGTT AATTACGTTA
 4741 AGCATGTAAT AATTAACATG TAATGCATGA CGTTATTTAT GAGATGGGTT TTTATGATTA
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 4861 ATAAAATTATC GCGCGCGGT TCATCTATGT TACTAGATCC GATGATAAGC TGTCAAACAT
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 4981 ATTCACACACA ACATACGAGC CGGAAGCATA AAGTGTAAAG CCTGGGGTGC CTAATGAGTG
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 5581 TAGGCCCGA TAAATTCCA ACATGGATGC TGATTTATAT GGGTATAAAT GGGCTCGCGA
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 5941 GCATTGATT CCTGTTGTA ATTGTCCCTT TAACAGCGAT CGCGTATTTC GTCTCGCTCA
 6001 GGCGCAATCA CGAATGAATA ACGGTTGGT TGATGCGAGT GATTTGATG ACGAGCGTAA
 6061 TGGCTGCCCT GTTGAACAAG TCTGGAAAGA AATGCATAAA CTTTGCCAT TCTCACCGGA
 6121 TTCAGTCGTC ACTCATGGTG ATTCTCACT TGATAACCTT ATTGTTGACG AGGGGAAATT
 6181 AATAGGTTGT ATTGATGTTG GACGAGTCGG AATCGCAGAC CGATACCAAG ATCTGCCAT
 6241 CCTATGGAAC TGCCCTGGTG AGTTTCTCC TTCATTACAG AAACGGCTT TTCAAAAATA
 6301 TGGTATTGAT AATCCTGATA TGAATAAATT GCAGTTTCAT TTGATGCTG ATGAGTTTT
 6361 CTAAGAATTA ATTCACTGATC CTGCATGACC AAAATCCCTT AACGTGAGTT TTCGTTCCAC
 6421 TGAGCGTCAG ACCCCGTAGA AAAGATCAA GGATCTTCTT GAGATCCTT TTTCTGCGC
 6481 GTAATCTGCT GCTTGCACAC AAAAAAACCA CCGCTACCAAG CGGTGGTTG TTTGCCGGAT
 6541 CAAGAGCTAC CAACTCTTT TCCGAAGGTA ACTGGCTTCA GCAGAGCGCA GATACCAAAT
 6601 ACTGCTCTTC TAGTGTAGCC GTAGTTAGGC CACCACTTCA AGAACTCTGT AGCACCCGCT
 6661 ACATACCTCG CTCTGCTAAT CCTGTTACCA GTGGCTGCTG CCAGTGGCGA TAAGTCGTG
 6721 CTTACCGGGT TGGACTCAAG ACGATAGTTA CCGGATAAGG CGCAGCGTC GGGCTGAACG
 6781 GGGGGTTCGT GCACACAGCC CAGCTGGAG CGAACGACCT ACACCGAACT GAGATACCTA
 6841 CAGCGTGAGC TATGAGAAAG CGCCACGCTT CCCGAAGGGA GAAAGGCGGA CAGGTATCCG
 6901 GTAAGCGCA GGGTGGAAAC AGGAGAGCGC ACGAGGGAGC TTCCAGGGGG AAACGCCCTGG
 6961 TATCTTATA GTCCTGTCGG GTTTCGCCAC CTCTGACTTG AGCGTCGATT TTTGTGATGC
 7021 TCGTCAGGGG GGCAGGAGCCT ATGGAAAAAC GCCAGCAACG CGGCCTTTT ACGGTTCTG
 7081 GCCTTTGCT GGCCTTTGC TCACATGTT TTTCTGCGT TATCCCTGTA TTCTGTGGAT

Supplemental Figure S11. F-SHMT08cΔ+N374A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

7141 AACCGTATTA CCGCCTTGAGTGAGCTGAT ACCGCTCGCC GCAGCCGAAC GACCGAGCGC
 7201 AGCGAGTCAG TGAGCGAGGA AGCGGAAGAG CGCCTGATGC GGTATTTCT CCTTACGCAT
 7261 CTGTGCGGTA TTTCACACCG CATATGGTGC ACTCTCAGTA CAATCTGCTC TGATGCCGCA
 7321 TAGTTAACGCC AGTATACACT CCGCTATCGC TACGTGACTG GGTATGGCT GCGCCCCGAC
 7381 ACCCGCCAAC ACCCGCTGAC GCGCCCTGAC GGGCTTGTCT GCTCCCGCA TCCGCTTACA
 7441 GACAAGCTGT GACCGCTCTCC GGGAGCTGCA TGTGTCAGAG GTTTACCG TCATCACCGA
 7501 AACCGCGAG GCAGGGTGCC TTGATGTGGG CGCCGGCGGT CGAGTGGCGA CGGCGCGGCT
 7561 TGTCCGCGCC CTGGTAGATT GCCTGGCCGT AGGCCAGCCA TTTTGAGCG GCCAGCGGCC
 7621 GCGATAGGCC GACGCGAAGC GGCGGGCGT AGGGAGCGA GCGACCGAAG GGTAGCGCT
 7681 TTTTGCAGCT CTCGGCTGT GCGCTGCCA GACAGTTATG CACAGGCCAG GCGGGTTTTA
 7741 AGAGTTTAA TAAGTTTAA AGAGTTTAG GGGAAAAAT CGCCTTTTT CTCTTTTATA
 7801 TCAGTCACCT ACATGTGTGA CCGGTTCCC ATGTACGGCT TTGGGTTCCC AATGTACGGG
 7861 TTCCGGTTCC CAATGTACGG CTTGGGTTCC CAAATGTACG TGCTATCCAC AGGAAAGAGA
 7921 CCTTTTCGAC CTTTTCCCC TGCTAGGGCA ATTGCCCCTA GCATCTGCTC CGTACATTAG
 7981 GAACCGCCGG ATGCTTCGCC CTCGATCAGG TTGCGGTAGC GCATGACTAG GATCGGGCCA
 8041 GCCTGCCCG CCTCCTCCCT CAAATGTAC TCCGGCAGGT CATTGACCC GATCAGCTG
 8101 CGCACGGTGA AACAGAACTT CTTGAACCT CCGCGCTGC CACTGCGTTC GTAGATCGTC
 8161 TTGAACAAACC ATCTGGCTTC TGCCCTGCC GCGCGCGGCC GTGCCAGCG GTAGAGAAA
 8221 CGGCCGATGC CGGGATCGAT CAAAAAGTAA TCGGGGTGAA CCGTCAGCAC GTCCGGGTT
 8281 TTGCCTCTG TGATCTCGCG GTACATCCAA TCAGCTAGCT CGATCTCGAT GTACTCCGGC
 8341 CGCCCGGTT CGCTTTTAC GATCTGTAG CGGCTAATCA AGGCTTCACC CTCGGATACC
 8401 GTCACCAGGC GGCGTTCTT GGCCCTCTTC GTACGCTGCA TGGCAACGTG CGTGGTGT
 8461 AACCGAATGC AGGTTCTAC CAGGTGCTCT TCTGCTTTC CGCCATCGGC TCGCCGGCAG
 8521 AACTTGAGTA CGTCCGCAAC GTGTGGACGG AACACGCGGC CGGGCTTGTC TCCCTCCCT
 8581 TCCCGGTATC GGTCATGGA TTGGTTAGA TGGGAAACCG CCATCAGTAC CAGGTCGTA
 8641 TCCCACACAC TGGCCATGCC GGCGGGCCCT GCGGAAACCT CTACGTGCC GTCTGGAAGC
 8 /U1 TCGTAGCGGA TCACCTCGCC AGCTCGTCGG TCACGCTTCG ACAGACGGAA AACGGCCACG
 8761 TCCATGATGC TGCGACTATC GCGGGTGCCC ACGTCATAGA GCATCGGAAC GAAAAAAATCT
 8821 GGTTGCTCGT CGCCCTGGG CGGCTTCTA ATCGACGGCG CACCGGCTGC CGGCGGTTGC
 8881 CGGGATTCTT TGCGGATTG TGCGACTATC GCGGGTGCCC ACGTCATAGA GCATCGGAAC GAAAAAAATCT
 8941 GCCTCGATGC GTTGCCTG GGCGGCCTGC CGGGCTTCA ACTTCTCCAC CAGGTATCA
 9001 CCCAGCGCC CGCCGATTG TACCGGGCCG GATGGTTG GACCGTCACG CGGATTCCTC
 9061 GGGCTTGGG GTTCCAGTGC CATTGCAGGG CGGCAGACA ACCCAGCCGC TTACGCTGG
 9121 CCAACCGCCC GTTCCCTCCAC ACATGGGGCA TTCCACGGCG TCGGTGCCCTG GTGTTCTTG
 9181 ATTTTCCATG CGCCCTCCCT TAGCCGCTAA AATTCACTCTA CTCATTATT CATTGCTCA
 9241 TTTACTCTGG TAGCTGCGCG ATGTATTAG ATAGCAGCTC GGTAATGGTC TTGCTTGGC
 9301 GTACCCGTA CATCTTCAGC TTGGTGTGAT CCTCCGCCGG CAACTGAAAG TTGACCGCT
 9361 TCATGGCTGG CGTGTCTGCC AGGCTGGCCA ACGTTGCAGC CTTGCTGCC CGTGCCTCG
 9421 GACGGCCGGC ACTTAGCGTG TTTGTGCTT TGCTCATTTC CTCTTTACCT CATTAACTCA
 9481 AATGAGTTT GATTTAATT CAGCGGCCAG CGCCTGGACC TCGCGGGCAG CGTCGCCCTC
 9541 GGGTTCTGAT TCAAGAACGG TTGTGCCGGC GGCGGCAGTG CCTGGGTAGC TCACGCCCTG
 9601 CGTGATACGG GACTCAAGAA TGGGCAGCTC GTACCCGGCC AGCGCCTCGG CAAACCTCACC
 9661 GCCGATGCGC GTGCCCTTGA TCGCCCGCGA CACGACAAAG GCCGCTTGTGTA GCCTTCCATC
 9721 CGTGACCTCA ATGCGCTGCT TAACCAGCTC CACCAAGTCC GCGGTGGCCC ATATGCGTA
 9781 AGGGCTTGGC TGCACCGGAA TCAGCACGAA GTCGGCTGCC TTGATCGGG ACACAGCAA
 9841 GTCCGCCGCC TGGGGCGCTC CGTCGATCAC TACGAAGTCC CGCCGGCCGA TGGCCTTCAC
 9901 GTCGGGTCA ATGCGCTGCC GGTCGATGCC GACAAAGGGT AGCGGGTGTAT CTTCCGCAC
 9961 GGCCGCCAA TCGCGGGCAC TGCCCTGGGG ATCGGAATCG ACTAACAGAA CATCGGCC
 10021 GGCGAGTTGC AGGGCGCGGG CTAGATGGGT TGCGATGGTC GTCTTGCCCTG ACCCGCC
 10081 CTGGTTAAGT ACAGCGATAA CCTTCATGCG TTCCCTTGC GTATTGTTT ATTTACTCAT
 10141 CGCATCATAT ACGCAGCGAC CGCATGACGC AAGCTGTTT ACTCAAATAC ACATCAC
 10201 TTTAGACGGC GGCGCTCGGT TTCTTCAGCG GCCAAGCTGG CGGGCCAGGC CGCCAGCTG

Supplemental Figure S11. F-SHMT08cΔ+N374A-CDS, insert size, vector, restriction enzymes, and sequenced positive clones used for cloning.

10261 GCATCAGACA AACCGGCCAG GATTCATGC AGCCGACGG TTGAGACGTG CGCGGGCGGC
10321 TCGAACACGT ACCCGGCCGC GATCATCTCC GCCTCGATCT CTTCGGTAAT GAAAAACGGT
10381 TCGTCCTGGC CGTCCTGGTG CGGTTTCATG CTTGTTCTC TTGGCGTTCA TTCTCGGC
10441 CCGCCAGGGC GTGCCCTCG GTCAATGCGT CCTCACGAA GGCACCGCGC CGCCTGGCCT
10501 CGGTGGCGT CACTTCCTCG CTGCGCTCAA GTGCGCGGTA CAGGGTCGAG CGATGCACGC
10561 CAAGCAGTGC AGCCGCCTCT TTCACGGTGC GGCCTTCCTG GTCGATCAGC TCGCGGGCGT
10621 GCGCGATCTG TGCCGGGTG AGGGTAGGGC GGGGGCCAAA CTTCACGCCT CGGGCCTTGG
10681 CGGCCTCGCG CCCGCTCCGG GTGCGGTGCA TGATTAGGGA ACGCTCGAAC TCGGCAATGC
10741 CGCGAACAC GGTCAACACC ATGCGGCCGG CGGGCGTGGT GGTGTCGGCC CACGGCTCTG
10801 CCAGGCTACG CAGGCCCGCG CGGGCCTCCT GGATGCGCTC GGCAATGTCC AGTAGGTCGC
10861 GGGTGCTGCG GGCCAGGC GG TCTAGCCTGG TCACTGTCAC AACGTCGCCA GGGCGTAGGT
10921 GGTCAAGCAT CCTGGCCAGC TCCGGCGGT CGCGCCTGGT GCCGGTGATC TTCTCGGAAA
10981 ACAGCTTGGT GCAGCCGGCC GCGTGCAGTT CGGCCCGTTG GTTGGTCAAG TCCTGGTC
11041 CGGTGCTGAC GCGGGCATAG CCCAGCAGGC CAGCGGCCGGC GCTCTGTTC ATGGCGTAAT
11101 GTCTCCGGTT CTAGTCGCAA GTATTCTACT TTATGCGACT AAAACACGCG ACAAGAAAAC
11161 GCCAGGAAAA GGGCAGGGCG GCAGCCTGTC GCGTAACCTTA GGACTTGTGC GACATGTC
11221 TTTCAGAAGA CGGCTGCACT GAACGTCAGA AGCCGACTGC ACTATAGCAG CGGAGGGTT
11281 GGATCAAAGT ACT