Supporting Materials and Methods

DNA sequence and deduced amino acid sequence of His-tagged human methionine synthase (hMS) reductase (hMSR) expressed from pFBHT(hMSR^{I}). The underlined "CATCACCATCACCATCAC" sequence specifies the His-6-tag. The underlined "ATG" with italic letters indicates the original translational start site. The stop codon "TAA" is shown in underlined bold type.

```
ATGTCGTACTACCATCACCATCACCATCACGATTACGATATCCCAACGACCGAAAACCTG      60
 M  S  Y  Y  H  H  H  H  H  H  D  Y  D  I  P  T  T  E  N  L      20

TATTTTCAGGGCGCCATGGGATCCATGAGGAGGTTTCTGTTACTATATGCTACACAGCAG      120
 Y  F  Q  G  A  M  G  S  M  R  R  F  L  L  L  Y  A  T  Q  Q      40

GGACAGGCAAAGGCCATCGCAGAAGAAATATGTGAGCAAGCTGTGGTACATGGATTTTCT      180
 G  Q  A  K  A  I  A  E  E  I  C  E  Q  A  V  V  H  G  F  S      60

GCAGATCTTCACTGTATTAGTGAATCCGATAAGTATGACCTAAAAACCGAAACAGCTCCT      240
 A  D  L  H  C  I  S  E  S  D  K  Y  D  L  K  T  E  T  A  P      80

CTTGTTGTTGTGGTTTCTACGACGGGCACCGGAGACCCACCCGACACAGCCCGCAAGTTT      300
 L  V  V  V  V  S  T  T  G  T  G  D  P  P  D  T  A  R  K  F      100

GTTAAGGAAATACAGAACCAAACACTGCCGGTTGATTTCTTTGCTCACCTGCGGTATGGG      360
 V  K  E  I  Q  N  Q  T  L  P  V  D  F  F  A  H  L  R  Y  G      120

TTACTGGGTCTCGGTGATTCAGAATACACCTACTTTTGCAATGGGGGGAAGATAATTGAT      420
 L  L  G  L  G  D  S  E  Y  T  Y  F  C  N  G  G  K  I  I  D      140

AAACGACTTCAAGAGCTTGGAGCCCGGCATTTCTATGACACTGGACATGCAGATGACTGT      480
 K  R  L  Q  E  L  G  A  R  H  F  Y  D  T  G  H  A  D  D  C      150

GTAGGTTTAGAACTTGTGGTTGAGCCGTGGATTGCTGGACTCTGGCCAGCCCTCAGAAAG      540
 V  G  L  E  L  V  V  E  P  W  I  A  G  L  W  P  A  L  R  K      180

CATTTTAGGTCAAGCAGAGGACAAGAGGAGATAAGTGGCGCACTCCCGGTGGCATCACCT      600
 H  F  R  S  S  R  G  Q  E  E  I  S  G  A  L  P  V  A  S  P      200

GCATCCTTAAGGACAGACCTTGTGAAGTCAGAGCTGCTACACATTGAATCTCAAGTCGAG      660
 A  S  L  R  T  D  L  V  K  S  E  L  L  H  I  E  S  Q  V  E      220

CTTCTGAGATTCGATGATTCAGGAAGAAAGGATTCTGAGGTTTTGAAGCAAAATGCAGTG      720
 L  L  R  F  D  D  S  G  R  K  D  S  E  V  L  K  Q  N  A  V      240

AACAGCAACCAATCCAATGTTGTAATTGAAGACTTTGAGTCCTCACTTACCCGTTCGGTA      780
 N  S  N  Q  S  N  V  V  I  E  D  F  E  S  S  L  T  R  S  V      260

CCCCCACTCTCACAAGCCTCTCTGAATATTCCTGGTTTACCCCCAGAATATTTACAGGTA      840
 P  P  L  S  Q  A  S  L  N  I  P  G  L  P  P  E  Y  L  Q  V      280

CATCTGCAGGAGTCTCTTGGCCAGGAGGAAAGCCAAGTATCTGTGACTTCAGCAGATCCA      900
 H  L  Q  E  S  L  G  Q  E  E  S  Q  V  S  V  T  S  A  D  P      300

GTTTTTCAAGTGCCAATTTCAAAGGCAGTTCAACTTACTACGAATGATGCCATAAAAACC      960
 V  F  Q  V  P  I  S  K  A  V  Q  L  T  T  N  D  A  I  K  T      320
```

```
ACTCTGCTGGTAGAATTGGACATTTCAAATACAGACTTTTCCTATCAGCCTGGAGATGCC      1020
 T  L  L  V  E  L  D  I  S  N  T  D  F  S  Y  Q  P  G  D  A       340

TTCAGCGTGATCTGCCCTAACAGTGATTCTGAGGTACAAAGCCTACTCCAAAGACTGCAG      1080
 F  S  V  I  C  P  N  S  D  S  E  V  Q  S  L  L  Q  R  L  Q       360

CTTGAAGATAAAAGAGAGCACTGCGTCCTTTTGAAAATAAAGGCAGACACAAAGAAGAAA      1140
 L  E  D  K  R  E  H  C  V  L  L  K  I  K  A  D  T  K  K  K       380

GGAGCTACCTTACCCCAGCATATACCTGCGGGATGTTCTCTCCAGTTCATTTTTACCTGG      1200
 G  A  T  L  P  Q  H  I  P  A  G  C  S  L  Q  F  I  F  T  W       400

TGTCTTGAAATCCGAGCAATTCCTAAAAAGGCATTTTTACGAGCCCTTGTGGACTATACC      1260
 C  L  E  I  R  A  I  P  K  K  A  F  L  R  A  L  V  D  Y  T       420

AGTGACAGTGCTGAAAAGCGCAGGCTACAGGAGCTGTGCAGTAAACAAGGGGCAGCCGAT      1320
 S  D  S  A  E  K  R  R  L  Q  E  L  C  S  K  Q  G  A  A  D       440

TATAGCCGCTTTGTACGAGATGCCTGTGCCTGCTTGTTGGATCTCCTCCTCGCTTTCCCT      1380
 Y  S  R  F  V  R  D  A  C  A  C  L  L  D  L  L  L  A  F  P       460

TCTTGCCAGCCACCACTCAGTCTCCTGCTCGAACATCTTCCTAAACTTCAACCCAGACCA      1440
 S  C  Q  P  P  L  S  L  L  L  E  H  L  P  K  L  Q  P  R  P       480

TATTCGTGTGCAAGCTCAAGTTTATTTCACCCAGGAAAGCTCCATTTTGTCTTCAACATT      1500
 Y  S  C  A  S  S  S  L  F  H  P  G  K  L  H  F  V  F  N  I       500

GTGGAATTTCTGTCTACTGCCACAACAGAGGTTCTGCGGAAGGGAGTATGTACAGGCTGG      1560
 V  E  F  L  S  T  A  T  T  E  V  L  R  K  G  V  C  T  G  W       520

CTGGCCTTGTTGGTTGCTTCAGTTCTTCAGCCAAACATACATGCATCCCACGAAGACAGC      1620
 L  A  L  L  V  A  S  V  L  Q  P  N  I  H  A  S  H  E  D  S       540

GGGAAAGCCCTGGCTCCTAAGATATCCATCTCTCCTCGAACAACAAATTCTTTCCACTTA      1680
 G  K  A  L  A  P  K  I  S  I  S  P  R  T  T  N  S  F  H  L       560

CCAGATGACCCCTCAATCCCCATCATAATGGTGGGTCCAGGAACCGGCATAGCCCCGTTT      1740
 P  D  D  P  S  I  P  I  I  M  V  G  P  G  T  G  I  A  P  F       580

ATTGGGTTCCTACAACATAGAGAGAAACTCCAAGAACAACACCCAGACGGAAATTTTGGA      1800
 I  G  F  L  Q  H  R  E  K  L  Q  E  Q  H  P  D  G  N  F  G       600

GCAATGTGGTTGTTTTTTGGCTGCAGGCATAAGGATAGGGATTATCTATTCAGAAAAGAG      1860
 A  M  W  L  F  F  G  C  R  H  K  D  R  D  Y  L  F  R  K  E       620

CTCAGACATTTCCTTAAGCATGGGATCTTAACTCATCTAAAGGTTTCCTTCTCAAGAGAC      1920
 L  R  H  F  L  K  H  G  I  L  T  H  L  K  V  S  F  S  R  D       640

GCTCCTGTTGGGGAGGAGGAAGCCCCAGCAAAGTATGTGCAAGACAACATCCAGCTTCAT      1980
 A  P  V  G  E  E  E  A  P  A  K  Y  V  Q  D  N  I  Q  L  H       660

GGCCAGCAGGTGGCGAGAATCCTCCTCCAGGAGAACGGCCATATTTATGTGTGTGGAGAT      2040
 G  Q  Q  V  A  R  I  L  L  Q  E  N  G  H  I  Y  V  C  G  D       680

GCAAAGAATATGGCCAAGGATGTACATGATGCCCTTGTGCAAATAATAAGCAAAGAGGTT      2100
 A  K  N  M  A  K  D  V  H  D  A  L  V  Q  I  I  S  K  E  V       700

GGAGTTGAAAAACTAGAAGCAATGAAAACCCTGGCCACTTTAAAAGAAGAAAAACGCTAC      2160
 G  V  E  K  L  E  A  M  K  T  L  A  T  L  K  E  E  K  R  Y       720

CTTCAGGATATTTGGTCATAAGTCGACGAGCTCACTAGTCGCGGCCGCT                 2209
 L  Q  D  I  W  S  *                                              726
```