

## Appendix: Vector Sequences

Following are sequences and information on plasmids described in the thesis.

### 1. pQE-60/OmpC (4501 bp)

Derived from pQE-60 (Qiagen). OmpC gene cloned in *Nco* I and *Hind* III sites,

C-terminal His tag removed, *Nco* I site ablated via use of *Bsa* I.

Sequence:

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CTCGAGAAATCATAAAAAATTTATTTGCTTTGTGAGCGGATAACAATTATAATAGATTC
AATTGTGAGCGGATAACAATTTACACAGAATTCATTAAAGAGGAGAAATTAACCATGA
AAGTTAAAGTACTGTCCCTCCTGGTCCAGCTCTGCTGGTAGCAGGCGCAGCAAACGCT
GCTGAAGTTTACAACAAAGACGGCAACAAATTAGATCTGTACGGTAAAGTAGACGGCCT
GCACTATTTCTCTGACAACAAAGATGTAGATGGCGACCAGACCTACATGCGTCTTGGCT
TCAAAGGTGAAACTCAGGTTACTGACCAGCTGACCGGTTACGGCCAGTGGGAATATCAG
ATCCAGGGCAACAGCGCTGAAAACGAAAACAACCTCCTGGACCCGTGTGGCATTTCGCAGG
TCTGAAATTCAGGATGTGGGTTCTTTGACTACGGTCGTAACACTACGGCGTTGTTTATG
ACGTAACCTCCTGGACCGACGTACTGCCAGAATTCGGTGGTGACACCTACGGTCTGAC
AACTTCATGCAGCAGCGTGGTAACGGCTTCGCGACCTACCGTAACACTGACTTCTTCGG
TCTGGTTGACGGCCTGAACTTTGCTGTTTCAGTACCAGGGTAAAAACGGCAACCCATCTG
GTGAAGGCTTTACTAGTGGCGTAACTAACAACGGTCGTGACGCACTGCGTCAAACGGC
GACGGCGTCGGCGGTTCTATCACTTATGATTACGAAGGTTTCGGTATCGGTGGTGCAT
CTCCAGCTCCAAACGTAAGTACTGATGCTCAGAACACCGCTGCTTACATCGGTAACGGCGAC
GTGCTGAAACCTACACTGGTGGTCTGAAATACGACGCTAACAACATCTACCTGGCTGCT
CAGTACACCCAGACCTACAACGCAACTCGCGTAGGTTCCCTGGGTTGGGCGAACAAGC
ACAGAACTTCGAAGCTGTTGCTCAGTACCAGTTCGACTTCGGTCTGCGTCCGTCCCTGG
CTTACCTGCAGTCTAAAGGTAAAAACCTGGGTCGTGGCTACGACGACGAAGATATCCTG
AAATATGTTGATGTTGGTGCTACCTACTACTTCAACAAAAACATGTCCACCTACGTTGA
CTACAAAATCAACCTGCTGGACGACAACCAGTTCACTCGTGACGCTGGCATCAACACTG
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ACGCTCGGTTGCCGCCGGGCGTTTTTTTTATTGGTGAGAATCCAAGCTAGCTTGGCGAGAT
TTTCAGGAGCTAAGGAAGCTAAAATGGAGAAAAAATCACTGGATATAACCACCGTTGAT
ATATCCCAATGGCATCGTAAAGAACATTTTGAGGCATTTTCAGTCAGTTGCTCAATGTAC
CTATAACCAGACCGTTTCAGCTGGATATTACGGCCTTTTTTAAAGACCGTAAAGAAAAATA
AGCACAAGTTTTTATCCGGCCTTTATTACATTCTTGCCCGCCTGATGAATGCTCATCCG
GAATTTTCGTATGGCAATGAAAGACGGTGAGCTGGTGATATGGGATAGTGTTCACCCTTG
TTACACCGTTTTTCCATGAGCAAACCTGAAACGTTTTTCATCGCTCTGGAGTGAATACCACG
ACGATTTCCGGCAGTTTCTACACATATATTCGCAAGATGTGGCGTGTACGGTGAAAAC
CTGGCCTATTTCCCTAAAGGGTTTTATTGAGAATATGTTTTTTCGTCTCAGCCAATCCCTG
GGTGAGTTTTACCAGTTTTGATTTAAACGTGGCCAATATGGACAACCTTCTTCGCCCCCG
TTTTACCATGCATGGGCAAATATTATACGCAAGGCGACAAGGTGCTGATGCCGCTGGC
GATTCAGTTTCATCATGCCGTCTGTGATGGCTTCCATGTCCGCAGAATGCTTAATGAAT
TACAACAGTACTGCGATGAGTGGCAGGGCGGGCGTAATTTTTTTTAAAGGCAGTTATTGG
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TGCCCTTAAACGCCTGGGGTAATGACTCTCTAGCTTGAGGCATCAAATAAAACGAAAGG  
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GCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAG  
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CTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGACCCACGCTCACCGGCTCCAG  
ATTTATCAGCAATAAACCAGCCAGCCGGAAGGGCCGAGCGCAGAAGTGGTCTGCAACT  
TTATCCGCCTCCATCCAGTCTATTAATTGTTGCCGGGAAGCTAGAGTAAGTAGTTCCGCC  
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CCATGTTGTGCAAAAAAGCGGTTAGCTCCTTCGGTCTCCGATCGTTGTGAGAAGTAA  
GTTGGCCGAGTGTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTCA  
TGCCATCCGTAAGATGCTTTTTCTGTGACTGGTGTGAGTACTCAACCAAGTCATTCTGAGAA  
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TGTATTTAGAAAAATAAACAAATAGGGTTCCGCGCACATTTCCCCGAAAAGTGCCACC  
TGACGTCTAAGAAACCATTATTATCATGACATTAACCTATAAAAATAGGCGTATCACGA  
GGCCCTTTCGTCTTCCAC

## 2. pAJL-20 (6998 bp)

Derived from pQE-60/OmpC. MetRS cassette from pQE-15 MRS inserted at *Nhe*

I site.

Sequence:

CTCGAGAAATCATAAAAAATTTATTTGCTTTTGTGAGCGGATAACAATTATAATAGATTC  
AATTGTGAGCGGATAACAATTTACACAGAATTCATTAAAGAGGAGAAATTAACCATGA  
AAGTTAAAGTACTGTCCCTCCTGGTCCCAGCTCTGCTGGTAGCAGGCGCAGCAAACGCT  
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TCAAAGGTGAAACTCAGGTTACTGACCAGCTGACCGGTTACGGCCAGTGGGAATATCAG  
ATCCAGGGCAACAGCGCTGAAAACGAAAACAACCTCCTGGACCCGTGTGGCATTTCGCAGG  
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 CACTCGTGCACCCAACCTGATCTTCAGCATCTTTTACTTTACCAGCGTTTCTGGGTGAG  
 CAAAAACAGGAAGGCAAAAATGCCGCAAAAAAGGGAATAAGGGCGACACGGAAATGTTGA  
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 GAGCGGATACATATTTGAATGTATTTAGAAAAATAACAAATAGGGGTTCCGCGCACAT  
 TTCCCCGAAAAGTGCCACCTGACGTCTAAGAAACCATTATTATCATGACATTAACCTAT  
 AAAAATAGGCGTATCACGAGGCCCTTTCGTCTTCAC

### 3. pQE-15 MRS (6501 bp) constructed by K. Kiick

Encodes N-terminally His-tagged DHFR, 2.5 kb MetRS cassette inserted in *Nhe* I  
 site. Derived from pQE-15 (Qiagen).

#### Sequence:

CTCGAGAAATCATAAAAAATTTATTTGCTTTGTGAGCGGATAACAATTATAATAGATTC  
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 GAGGATCGCATCACCATCACCATCACGGATCCGGCATCATGGTTCGACCATTGAACTCG  
 ATCGTCGCCGTGTCCCAAATATGGGGATTGGCAAGAACGGAGACCTACCCTGGCCTCC

GCTCAGGAACGAGTTCAAGTACTTCCAAAGAATGACCACAACCTCTTCAGTGGAAGGTA  
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CACTGGTGAAGCCTCTAAATGAGAAGTAAAAGCCGCTGCCGCGCCGGTAACTGGCCCCG  
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TGAGTTTTACCAGTTTTTGATTTAAACGTGGCCAATATGGACAACCTTCTTCGCCCCCGTT  
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CTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCAATGCTCACGCTGTAGGTATCTCAGTT  
CGGTGTAGGTCGTTCCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTACGCCCGAC  
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CAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGGACAGTATTTGGTATC  
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TCATCCATAGCTGCCTGACTCCCCGTCGTGTAGATAACTACGATACGGGAGGGCTTACC  
ATCTGGCCCCAGTGCTGCAATGATACCGCGAGACCCACGCTCACCGGCTCCAGATTTAT  
CAGCAATAAACCCAGCCAGCCGGAAGGGCCGAGCGCAGAAGTGGTCCCTGCAACTTTATCC  
GCCTCCATCCAGTCTATTAATTGTTGCCGGGAAGCTAGAGTAAGTAGTTCCGCCAGTTAA  
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GTATGGCTTCATTCAGCTCCGGTCCCAACGATCAAGGCGAGTTACATGATCCCCCATG  
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 ATTATTGAAGCATTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATT  
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 CTAAGAAACCATTATTATCATGACATTAACCTATAAAAAATAGGCGTATCACGAGGCCCT  
 TTCGTCTTCAC

#### 4. pAJL-61 (7790 bp)

Derived from pQE-80L (Qiagen), identical to pQE-15 MRS except for addition of  
*lacI<sup>q</sup>* gene. DHFR cloned into *Bam* HI and *Hind* III site, MetRS cassette inserted  
 at *Nhe* I site.

#### Sequence:

CTCGAGAAATCATAAAAAATTTATTTGCTTTGTGAGCGGATAACAATTATAATAGATTC  
 AATTGTGAGCGGATAACAATTTACACAGAATTCATTAAAGAGGAGAAATTAACATATGA  
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 ATCGTTCGCCGTGTCCCAAATATGGGGATTGGCAAGAACGGGAGACCTACCCTGGCCTCC  
 GCTCAGGAACGAGTTCAAGTACTTCCAAAGAATGACCACAACCTCTTCAGTGGAAGGTA  
 AACAGAATCTGGTGATTATGGGTAGGAAAACCTGGTTCTCCATTCCTGAGAAGAATCGA  
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 AATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTCCTTTTTCAATATTATTGAA  
 GCATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAAT  
 AAACAAATAGGGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGACGTCTAAGAAAC  
 CATTATTATCATGACATTAACCTATAAAAATAGGCGTATCACGAGGCCCTTTCGTCTTC  
 AC

#### 5. pAJL-80 (5063 bp)

Derived from pQE-60. C-terminally His-tagged monomeric MetRS (551 aa) gene

cloned into *Nco* I and *Bgl* II sites. *Nco* I site ablated by use of *Bsa* I for cloning.

Sequence:

CTCGAGAAATCATAAAAAATTTATTTGCTTTGTGAGCGGATAACAATTATAATAGATTC  
 AATTGTGAGCGGATAACAATTTACACAGAATTCATTAAAGAGGAGAAATTAACCATGA  
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 CACCTCGGCCATATGCTGGAGCACATCCAGGCTGATGTCTGGGTCCGTTACCAGCGAAT  
 GCGCGGCCACGAGGTCAACTTCATCTGCGCCGACGATGCCACGGTACACCGATCATGC  
 TGAAAGCTCAGCAGCTTGGTATCACCCCGGAGCAGATGATTGGCGAAATGAGTCAGGAG  
 CATCAGACTGATTTTCGAGGCTTTAACATCAGCTATGACAACCTATCACTCGACGCACAG  
 CGAAGAGAACCGCCAGTTGTGAGAATCTACTCTCGCCTGAAAGAAAACGTTTTTA  
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 AAGCCGTCCAACCTGTTTGTTCATGGCTATGTGACGGTGAACGGCGCAAAGATGTCCAA  
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ACCGCATCGATATGAGGCAGGTTGAAGCACTGGTGGAAAGCCTCTAAAAGATCTCATCAC  
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