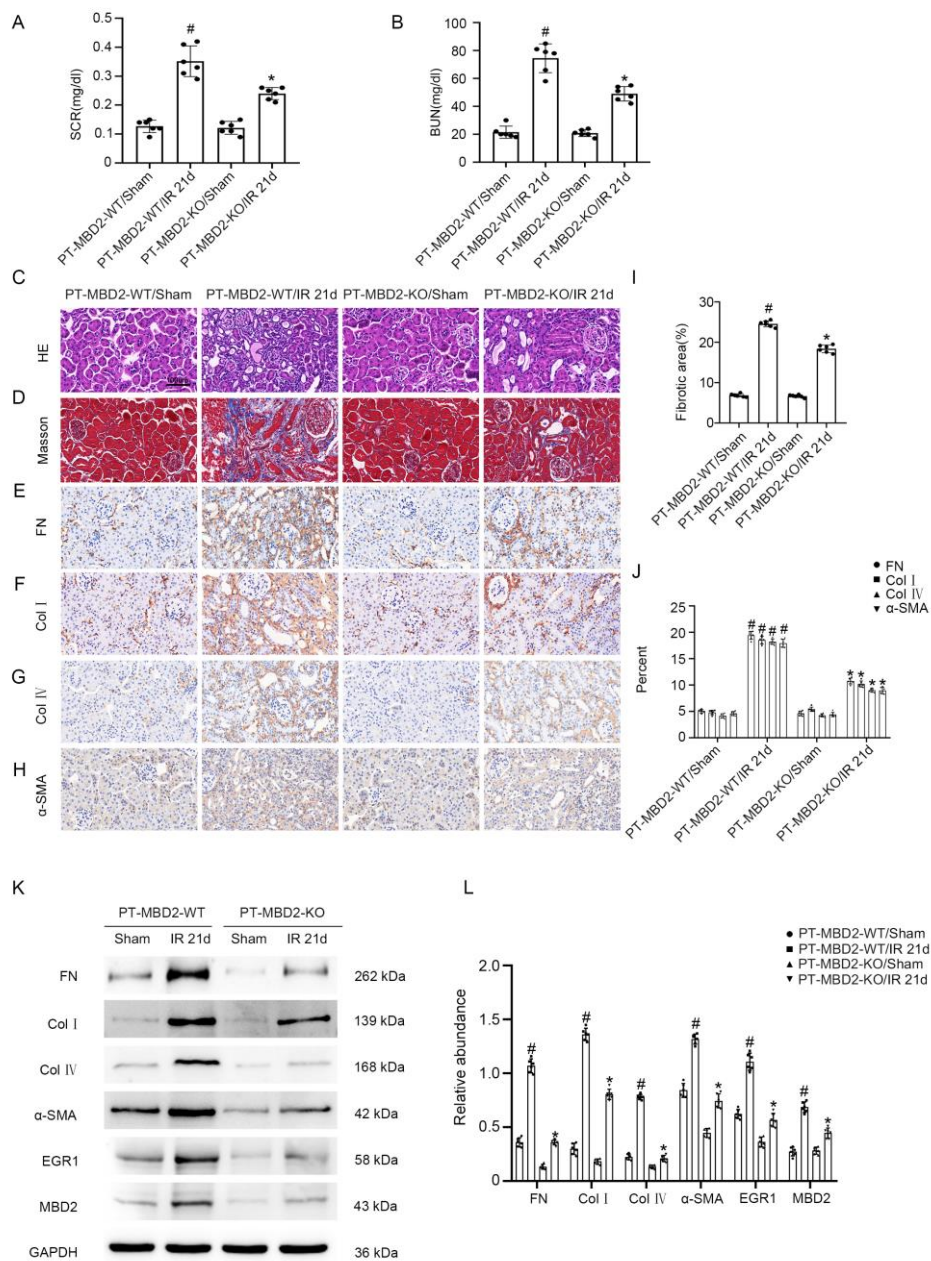


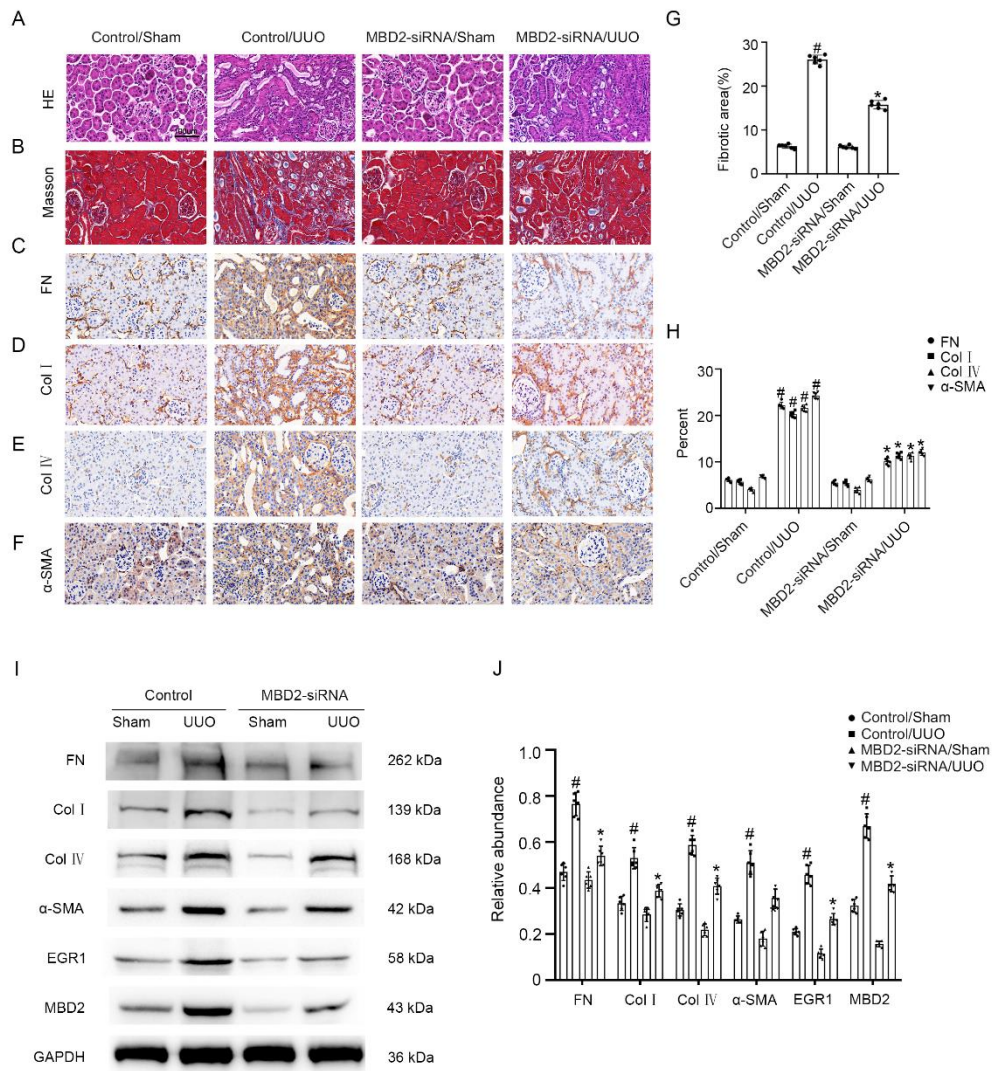
Supplemental information

**Genetic or siRNA inhibition of MBD2
attenuates the UUO- and I/R-induced renal
fibrosis via downregulation of EGR1**

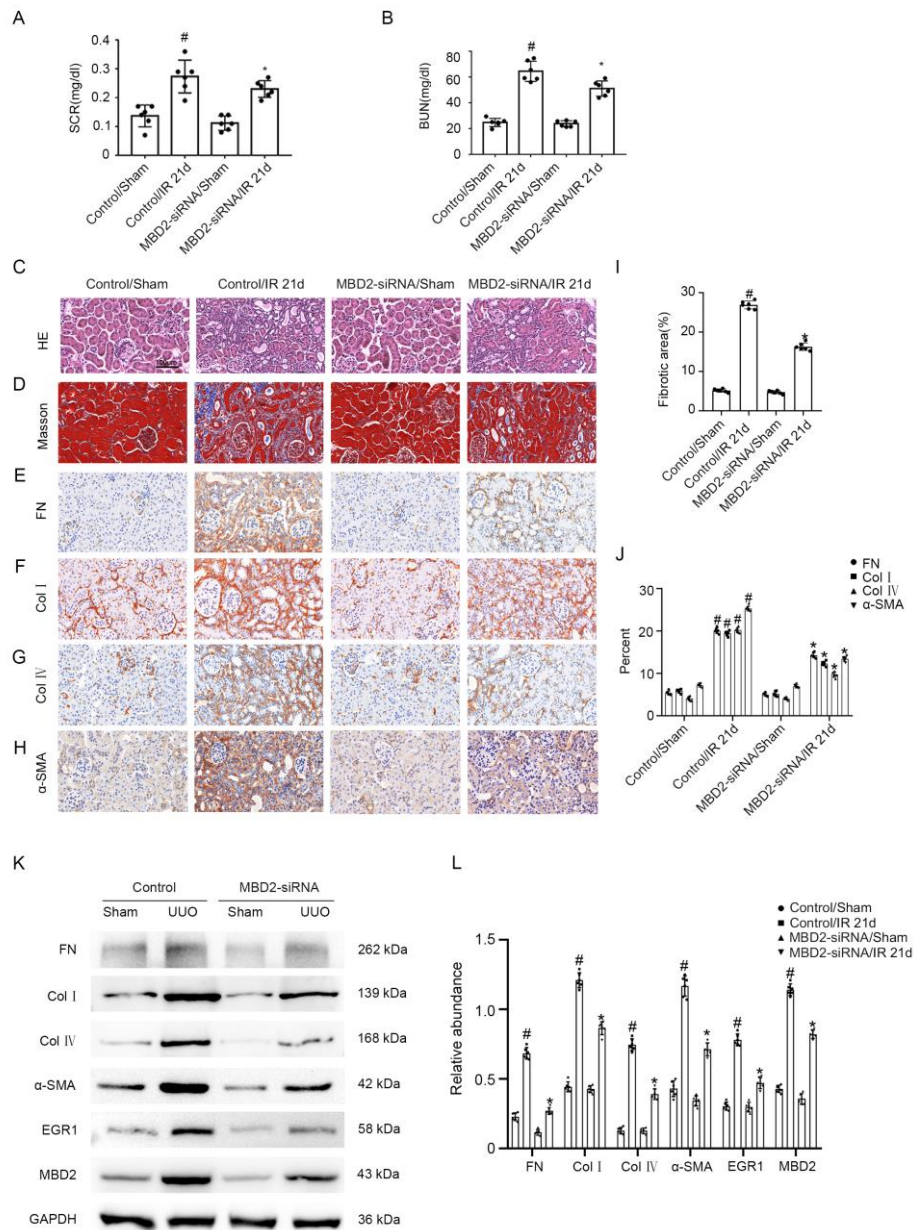
Kai Ai, Xiaozhou Li, Pan Zhang, Jian Pan, Huiling Li, Zhibiao He, Hongliang Zhang, Lei Yi, Ye Kang, Yinhuai Wang, Junxiang Chen, Yijian Li, Xudong Xiang, Xiangping Chai, and Dongshan Zhang



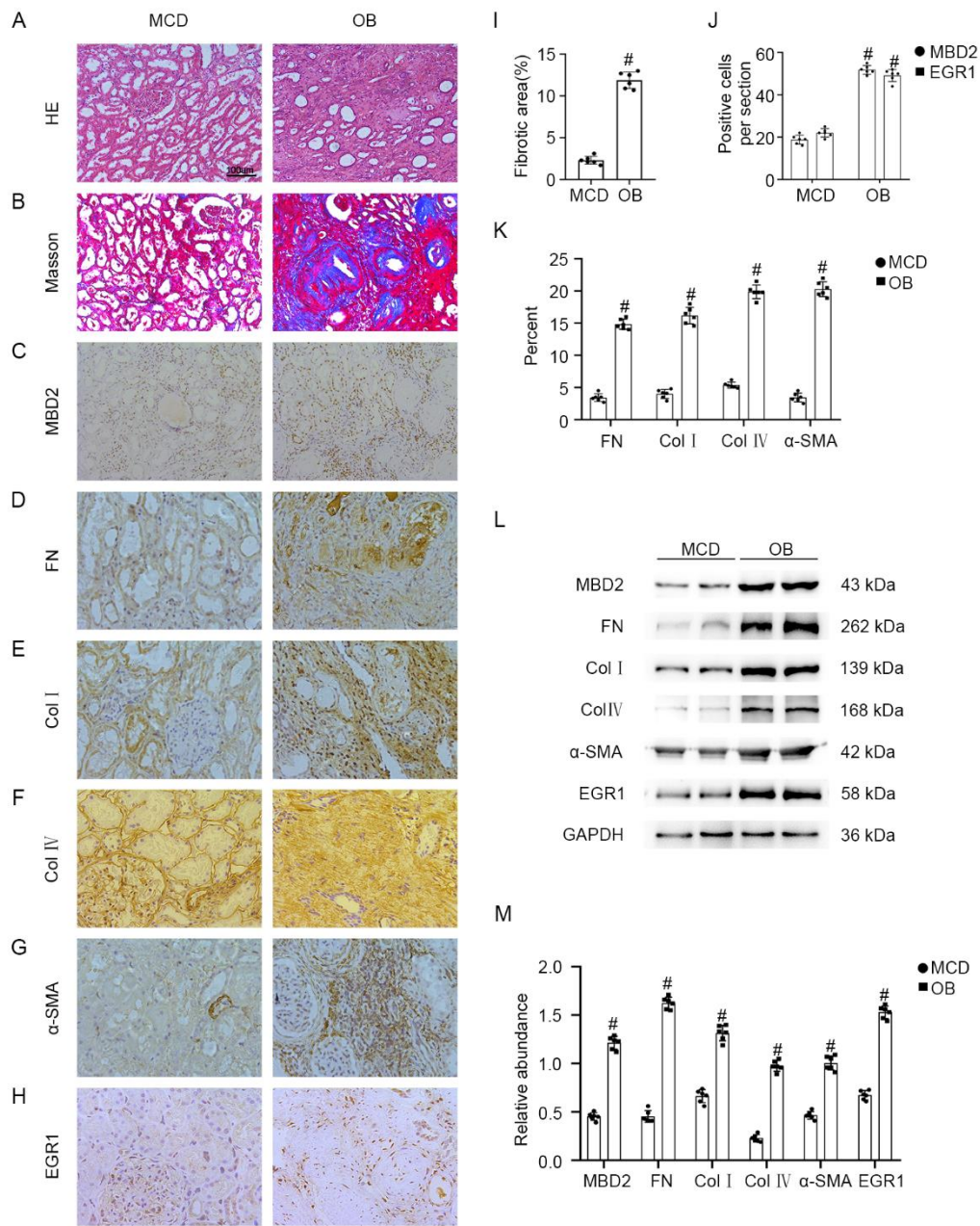
Supplemental Figure 1. PT-MBD2-KO mice attenuated IR-induced renal fibrosis. The littermate mice of the PT-MBD2-WT and PT-MBD2-KO were subjected to 28 minutes of bilateral renal ischemia followed by 21 days of reperfusion. (A) Blood SCR level of mice. (B) Blood BUN level of mice. (C) Representative hematoxylin and eosin staining. (D) Masson trichrome staining shows interstitial collagen deposition (blue). (E-H) Immunohistochemistry of FN, Col I&IV, and α-SMA. (I) Quantify tubulointerstitial fibrosis in the kidney cortex. (J) Quantification of immunohistochemistry staining. (K) Representative immunoblots for the expression of FN, Col I&IV, α-SMA, EGR1 and GAPDH. (L) Densitometry analysis of proteins signals, and normalized to internal control of GAPDH. Data are expressed as means ± sd (n=6). # P<0.05 versus sham group. * P<0.05 versus PT-MBD2-WT IR group. Original magnification, x400. Scale Bar: 100µm.



Supplemental Figure 2. MBD2 siRNA attenuated UUO-induced renal fibrosis. The C57BL/6 mice with UUO operation were injected with MBD2-siRNA or control at 15mg/kg via the tail vein once a week. (A) Representative hematoxylin and eosin staining. (B) Masson trichrome staining shows interstitial collagen deposition (blue). (C-F) Immunohistochemistry staining of FN, Col I&IV, and α-SMA. (G) Quantify tubulointerstitial fibrosis in the kidney cortex. (H) Quantification of immunohistochemistry staining. (I) Representative immunoblots for the expression of FN, Col I&IV, α-SMA, EGR1, MBD2, and GAPDH. (J) Densitometry analysis of proteins signals, and normalized to internal control of GAPDH. Data are expressed as means ± sd (n=6). # $P < 0.05$ versus sham group. * $P < 0.05$ versus Control with UUO group. Original magnification, x400. Scale Bar: 100μm.



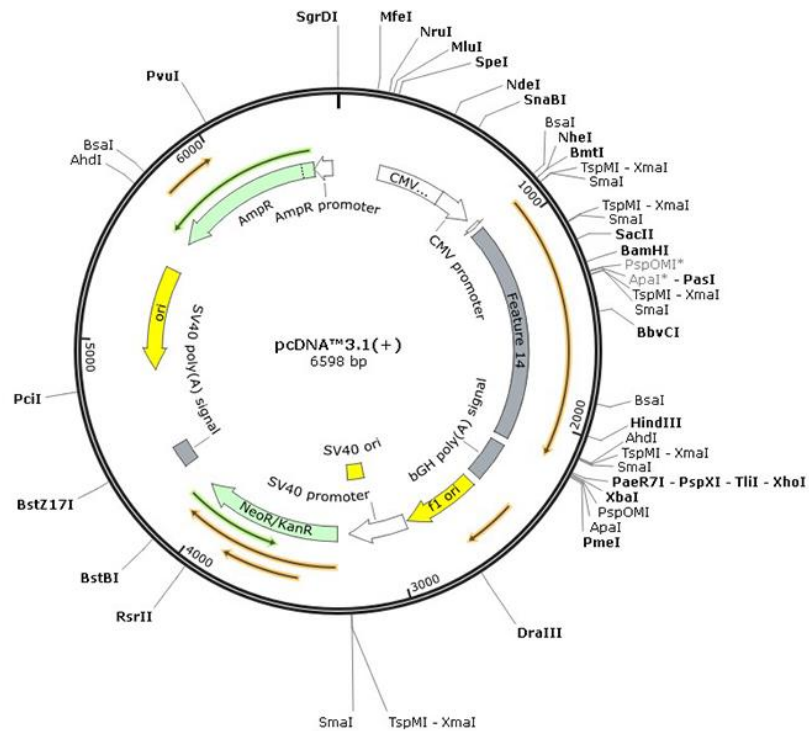
Supplemental Figure 3. MBD2 siRNA attenuated IR-induced renal fibrosis. The C57BL/6 mice with IR operation were injected with MBD2-siRNA or control at 15mg/kg via the tail vein once a week. (A) Blood SCR level of mice. (B) Blood BUN level of mice. (C) Representative hematoxylin and eosin staining. (D) Masson trichrome staining shows interstitial collagen deposition (blue). (E-H) Immunohistochemistry of FN, Col I&IV, and α -SMA. (I) Quantify tubulointerstitial fibrosis in the kidney cortex. (J) Quantification of immunohistochemistry staining. (K) Representative immunoblots for the expression of FN, Col I&IV, α -SMA, EGR1 and GAPDH. (L) Densitometry analysis of proteins signals, and normalized to internal control of GAPDH. Data are expressed as means \pm sd (n=6). # $P < 0.05$ versus sham group. * $P < 0.05$ versus Control with IR group. Original magnification, x400. Scale Bar: 100 μ m.



Supplemental Figure 4. MBD2-induced downstream genes expression in patients with OB.

The samples of kidneys from OB patients were gathered. (A) Representative hematoxylin and eosin staining. (B) Masson trichrome staining shows interstitial collagen deposition (blue). (C-H) Representative immunohistochemistry staining of MBD2, ECM related genes, and EGR1. (I) Quantification of the tubulointerstitial fibrosis. (J&K) Quantification of immunohistochemistry staining (L) Representative immunoblot of MBD2, ECM related genes and EGR1. (M) Densitometry analysis of proteins signals, and normalized to internal control of GAPDH. Data are expressed as means \pm sd (n=6). # P<0.05 versus MCD group. Original magnification, x400. Scale Bar: 100 μ m.

MBD2 plasmid map



Supplemental Figure 5. The Map of MBD2 plasmid. The sequences listed as below:
GACGGATCGGGAGATCTCCCGATCCCCTATGGTGC ACTCTCAGTACAATC
TGCTCTGATGCCGCATAGTTAAGCCAGTATCTGCTCCCTGCTTGTGTGTTG
GAGGTCGCTGAGTAGTGCGCGAGCAAAATTTAAGCTACAACAAGGCAAG
GCTTGACCGACAATTGCATGAAGAATCTGCTTAGGGTTAGGCGTTTTGCG
CTGCTTCGCGATGTACGGGCCAGATATACGCGTTGACATTGATTATTGACT
AGTTATTAATAGTAATCAATTACGGGGTCATTAGTTCATAGCCCATATATG
GAGTTCGCGTTACATAACTTACGGTAAATGGCCCGCCTGGCTGACCGCC
CAACGACCCCGCCATTGACGTCAATAATGACGTATGTTCCCATAGTAA
CGCCAATAGGGACTTTCATTGACGTCAATGGGTGGAGTATTTACGGTAA
ACTGCCCACTTGGCAGTACATCAAGTGTATCATATGCCAAGTACGCCCCCT
ATTGACGTCAATGACGGTAAATGGCCCGCCTGGCATTATGCCCAGTACAT
GACTTTATGGGACTTTCCTACTTGGCAGTACATCTACGTATTAGTCATCGC
TATTACCATGGTGATGCGGTTTTGGCAGTACATCAATGGGCGTGGATAGC
GGTTTGACTCACGGGGATTCCAAGTCTCCACCCATTGACGTCAATGGG
AGTTTGT TTTGGCACCAAAATCAACGGGACTTTC AAAATGTCGTAACAA
CTCCGCCCCATTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAGGTCT
ATATAAGCAGAGCTCTCTGGCTAACTAGAGAACCCACTGCTTACTGGCTT

ATCGAAATTAATACGACTCACTATAGGGAGACCCAAGCTGGCTAGCgccacc
ATGCGCGCGCACCCGGGGGGAGGCCGCTGCTGCCCCGAGCAGGAGGAGG
GGGAGAGCGCGGGCGGGCGGCAGCGGCGCTGGCGGCGACTCCGCCATAGA
GCAGGGGGGGCCAGGGCAGCGCGCTCGCTCCGTCCCCGGTGAGCGGCGTGC
GCAGGGAAGGCGCTCGGGGCGGGCGGCCGTGGCCGGGGGGCGGTGGAAGCA
GGCGGCCCGGGGCGGGCGGCGTCTGTGGCCGTGGCCGTGGCCGTGGCCGGG
GTCGGGGCCGTGGCCGGGGCCGGGGCCGGGGCCGCGGCCGTCCCCAGAG
TGGCGGCAGCGGCCTTGGCGGGCAGCGGCGGCGGGCGGCGGGCGGGCTGC
GGCGGGCGGACGGGTGGCGGCGTCGCCCCCGGCGGGATCCTGTCCCTTT
CCCGTCGGGGAGCTCGGGGCCGGGGCCCAGGGGACCCCGGGCCACGGAG
AGCGGGAAGAGGATGGACTGCCCGGCCCTCCCCCGGATGGAAGAAGG
AGGAAGTGATCCGAAAATCAGGGCTCAGTGCTGGCAAGAGCGATGTCTAC
TACTTCAGTCCAAGTGGTAAGAAGTTCAGAAGTAAACCTCAGCTGGCAAG
ATACCTGGGAAATGCTGTTGACCTTAGCAGTTTTGACTTCAGGACCGGCA
AGATGATGCCTAGTAAATTACAGAAGAACAAGCAGAGACTCCGGAATGA
CCCCCTCAATCAGAACAAGGGTAAACCAGACCTGAACACAACATTGCCAA
TTAGACAAACTGCATCAATTTTCAAGCAACCAGTAACCAAATTCACGAAC
CACCCGAGCAATAAGGTGAAGTCAGACCCCCAGCGGATGAATGAACAAC
CACGTCAGCTTTTCTGGGAGAAGAGGCTACAAGGACTTAGCGCATCAGAT
GTAACAGAACAAATTATAAAAACCATGGAGCTACCTAAAGGTCTTCAAGG
AGTCGGTCCAGGTAGCAATGACGAGACCCTTCTGTCTGCTGTGGCCAGTG
CTTTACACACAAGCTCTGCGCCATCACAGGACAAGTCTCTGCTGCCGTG
GAAAAGAACCCTGCTGTTTGGCTTAACACATCTCAACCCCTCTGCAAAGC
TTTCATTGTTACAGATGAAGACATTAGGAAACAGGAAGAGCGAGTCCAAC
AAGTACGCAAGAACTGGAGGAGGCACTGATGGCCGACATCCTGTCCCG
GGCTGCGGACACGGAGGAAGTAGACATTGACATGGACAGTGGAGATGAG
GCGTAACTCGAGTCTAGAGGGCCCGTTTAAACCCGCTGATCAGCCTCGAC
TGTGCCTTCTAGTTGCCAGCCATCTGTTGTTTGGCCCTCCCCCGTGCCTTCC
TTGACCCTGGAAGGTGCCACTCCCACTGTCCTTTTCTAATAAAATGAGGA
AATTGCATCGCATTGTCTGAGTAGGTGTCATTCTATTCTGGGGGGTGGGGT
GGGGCAGGACAGCAAGGGGGAGGATTGGGAAGACAATAGCAGGCATGCT
GGGGATGCGGTGGGCTCTATGGCTTCTGAGGCGGAAAGAACCAGCTGGG
GCTCTAGGGGGTATCCCCACGCGCCCTGTAGCGGCGCATTAAAGCGCGGCG
GGTGTGGTGGTTACGCGCAGCGTGACCGCTACACTTGCCAGCGCCCTAGC
GCCCCGCTCCTTTCGCTTTTCTTCCCTTCCCTTCTCGCCACGTTTCGCCGGCTTT
CCCCGTCAAGCTCTAAATCGGGGGCTCCCTTTAGGGTTCCGATTTAGTGCT
TTACGGCACCTCGACCCCAAAAACTTGATTAGGGTGATGGTTCACGTAG
TGGGCCATCGCCCTGATAGACGGTTTTTTCGCCCTTTGACGTTGGAGTCCAC
GTTCTTTAATAGTGGACTCTTGTTCCAAACTGGAACAACACTCAACCCTAT
CTCGGTCTATTCTTTTATTATAAGGGATTTTGCCGATTTTCGGCCTATTGG
TTAAAAAATGAGCTGATTTAACAAAAATTTAACGCGAATTAATTCTGTGG
AATGTGTGTCAGTTAGGGTGTGGAAAGTCCCCAGGCTCCCCAGCAGGCAG

AAGTATGCAAAGCATGCATCTCAATTAGTCAGCAACCAGGTGTGGAAAGT
CCCCAGGCTCCCCAGCAGGCAGAAGTATGCAAAGCATGCATCTCAATTAG
TCAGCAACCATAGTCCCGCCCCTAACTCCGCCCATCCCGCCCCTAACTCCG
CCCAGTTCCGCCCATTCTCCGCCCATGGCTGACTAATTTTTTTTATTTATG
CAGAGGCCGAGGCCGCCTCTGCCTCTGAGCTATTCCAGAAGTAGTGAGGA
GGCTTTTTTGGAGGCCTAGGCTTTTGCAAAAAGCTCCCGGGAGCTTGTATA
TCCATTTTCGGATCTGATCAAGAGACAGGATGAGGATCGTTTCGCATGATT
GAACAAGATGGATTGCACGCAGGTTCTCCGGCCGCTTGGGTGGAGAGGCT
ATTCGGCTATGACTGGGCACAACAGACAATCGGCTGCTCTGATGCCGCCG
TGTTCCGGCTGTCAGCGCAGGGGCGCCCGTTCTTTTTGTCAAGACCGACC
TGTCGGTGCCTGAATGAACTGCAGGACGAGGCAGCGCGGCTATCGTGG
CTGGCCACGACGGGCGTTCCCTGCGCAGCTGTGCTCGACGTTGTCACTGA
AGCGGGAAGGGACTGGCTGCTATTGGGCGAAGTGCCGGGGCAGGATCTC
CTGTCATCTCACCTTGCTCCTGCCGAGAAAGTATCCATCATGGCTGATGCA
ATGCGGCGGCTGCATACGCTTGATCCGGCTACCTGCCCATTCGACCACCA
AGCGAAACATCGCATCGAGCGAGCACGTA CTGGATGGAAGCCGGTCTTG
TCGATCAGGATGATCTGGACGAAGAGCATCAGGGGCTCGCGCCAGCCGA
ACTGTTCCGCCAGGCTCAAGGCGCGCATGCCCGACGGCGAGGATCTCGTCG
TGACCCATGGCGATGCCTGCTTGCCGAATATCATGGTGGAAAATGGCCGC
TTTTCTGGATTCATCGACTGTGGCCGGCTGGGTGTGGCGGACCGCTATCAG
GACATAGCGTTGGCTACCCGTGATATTGCTGAAGAGCTTGGCGGCGAATG
GGCTGACCGCTTCCTCGTGCTTTACGGTATCGCCGCTCCCGATTCGCAGCG
CATCGCCTTCTATCGCCTTCTTGACGAGTTCTTCTGAGCGGGACTCTGGGG
TTCGAAATGACCGACCAAGCGACGCCAACCTGCCATCACGAGATTTCGA
TTCCACCGCCGCTTCTATGAAAGGTTGGGCTTCGGAATCGTTTTCCGGGA
CGCCGGCTGGATGATCCTCCAGCGCGGGGATCTCATGCTGGAGTTCTTCG
CCCACCCCAACTTGTTTATTGCAGCTTATAATGGTTACAAATAAAGCAATA
GCATCACAAATTTACAAATAAAGCATTTTTTTCACTGCATTCTAGTTGTG
GTTTGTCCAAACTCATCAATGTATCTTATCATGTCTGTATAACCGTCGACCT
CTAGCTAGAGCTTGGCGTAATCATGGTCATAGCTGTTTCCTGTGTGAAATT
GTTATCCGCTCACAATTCACACAACATACGAGCCGGAAGCATAAAGTGT
AAAGCCTGGGGTGCCTAATGAGTGAGCTAACTCACATTAATTGCGTTGCG
CTCACTGCCCGCTTTCAGTCGGGAAACCTGTCGTGCCAGCTGCATTAATG
AATCGGCCAACGCGCGGGGAGAGGCGGTTTTCGTATTGGGCGCTCTTCCG
CTTCTCGCTCACTGACTCGCTGCGCTCGGTTCGTTCCGGCTGCGGCGAGCGG
TATCAGCTCACTCAAAGGCGGTAATACGGTTATCCACAGAATCAGGGGAT
AACGCAGGAAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACC
GTAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACG
AGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGG
ACTATAAAGATAACCAGGCGTTTTCCCCTGGAAGCTCCCTCGTGCGCTCTCC
TGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCCTTCTCCCTTCGGG
AAGCGTGGCGCTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTA

GGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTCAGCCCG
ACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGAC
ACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCG
AGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGG
CTACACTAGAAGAACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTA
CCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCT
GGTAGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAA
AGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTG
GAACGAAAACCTCACGTAAAGGGATTTTGGTCATGAGATTATCAAAAAGGA
TCTTCACCTAGATCCTTTTAAATTA AAAATGAAGTTTTAAATCAATCTAAA
GTATATATGAGTAAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAG
GCACCTATCTCAGCGATCTGTCTATTTTCGTTTCATCCATAGTTGCCTGACTC
CCCGTCGTGTAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAG
TGCTGCAATGATAACCGCGAGACCCACGCTCACCGGCTCCAGATTTATCAG
CAATAAACCAGCCAGCCGGAAGGGCCGAGCGCAGAAGTGGTCTGCAAC
TTTATCCGCCTCCATCCAGTCTATTAATTGTTGCCGGGAAGCTAGAGTAAG
TAGTTCGCCAGTTAATAGTTTGCACAACGTTGTTGCCATTGCTACAGGCAT
CGTGGTGTACGCTCGTCGTTTGGTATGGCTTCATTCAGCTCCGGTTCCCA
ACGATCAAGGCGAGTTACATGATCCCCATGTTGTGCAAAAAAGCGGTTA
GCTCCTTCGGTCTCCGATCGTTGTCAGAAGTAAGTTGGCCGCAGTGTTAT
CACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTCATGCCATCCG
TAAGATGCTTTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAAT
AGTGTATGCGGCGACCGAGTTGCTCTTGCCCGGCGTCAATACGGGATAAT
ACCGCGCCACATAGCAGAACTTTAAAAGTGCTCATCATTGGAAAACGTTT
TTCGGGGCGAAAACCTCAAGGATCTTACCGCTGTTGAGATCCAGTTCCGA
TGTAACCACTCGTGCACCCAACCTGATCTTCAGCATCTTTTACTTTACCA
GCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAATGCCGCAAAAAGGG
AATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTCTTTTTCAATA
TTATTGAAGCATTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGA
ATGTATTTAGAAAAATAAACAAATAGGGGTTCCGCGCACATTTCCCCGAA
AAGTGCCACCTGACGTC.