

## Human carbonic anhydrase I cDNA

Jonathan H.Barlow, Nicholas Lowe, Yvonne H.Edwards and Peter H.W.Butterworth

Department of Biochemistry and MRC Human Biochemical Genetics Unit, University College, London WC1E 6BT, UK

Submitted February 9, 1987

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1
Met Ala Ser Pro Asp Trp Gly Tyr Asp Asp Lys Asn Gly Pro Glu Gln Trp Ser Lys Leu Tyr Pro Ile Ala
AAAAGAAAACCTCAGTAGAAGATA ATG GCA AGT CCA GAC TGG GGA TAT GAT GAC AAA AAT GGT CCT GAA CAA TGG AGC AAG CTG TAT CCC ATT GCC

40
Asn Gly Asn Asn Gln Ser Pro Val Asp Ile Lys Thr Ser Glu Thr Lys His Asp Thr Ser Leu Lys Pro Ile Ser Val Ser Tyr Asn Pro
AAT GGA AAT AAC CAA TCC CCT GTT GAT ATT AAA ACC AGT GAA ACC AAA CAT GAC ACC TCT CTG AAA CCT ATT AGT GTC TCC TAG AAC CCA

60
Ala Thr Ala Lys Glu Ile Ile Asn Val Gly His Ser Phe His Val Asn Phe Glu Asp Asn Asp Asn Arg Ser Val Leu Lys Gly Gly Pro
GCC ACA GCC AAA GAA ATT ATC AAT GTG GGG CAT TCT TTC CAT GTA AAT TTT GAG GAC AAC GAT AAC CGA TCA GTG CTG AAA GGT GGT CCT

80
Phe Ser Asp Ser Tyr Arg Leu Phe Gln Phe His Phe His Trp Gly Ser Thr Asn Glu His Gly Ser Glu His Thr Val Asp Gly Val Lys
TTC TCT GAC AGC TAC AGG CTC TTT CAG TTT CAT TTT CAC TGG GGC AGT ACA AAT GAG CAT GGT TCA GAA CAT ACA GTG GAT GGA GTC AAA

100
Tyr Ser Ala Gly Leu His Val Ala His Trp Asn Ser Ala Lys Tyr Ser Ser Leu Ala Glu Ala Ala Ser Lys Ala Asp Gly Leu Ala Val
TAT TCT GCC GAG CTT CAC GTA GCT CAC TGG AAT TCT GCA AAG TAC TCC AGC CTT GCT GAA GCT GCC TCA AAG GCT GAT GGT TTG GCA GTT

120
Ile Gly Val Leu Met Lys Val Gly Glu Ala Asn Pro Lys Leu Gln Lys Val Leu Asp Ala Leu Gln Ala Ile Lys Thr Lys Gly Lys Arg
ATT GGT GTT TTG ATG AAG GTT GGT GAG GCC AAC CCA AAG CTG CAG AAA GTA CTT GAT GCC CTC CAA GCA ATT AAA ACC AAG GGC AAA CGA

140
Ala Pro Phe Thr Asn Phe Asp Pro Ser Thr Leu Leu Pro Ser Ser Leu Asp Phe Trp Thr Tyr Pro Gly Ser Leu Thr His Pro Pro Leu
GCC CCA TTC ACA AAT TTT GAC CCC TCT ACT CTC CTT CTT TCA TCC CTG GAT TTC TGG ACC TAC CCT GGC TCT CTG ACT CAT CCT CCT CTT

160
Tyr Glu Ser Val Thr Trp Ile Ile Cys Lys Glu Ser Ile Ser Val Ser Ser Glu Gln Leu Ala Gln Phe Arg Ser Leu Leu Ser Asn Val
TAT GAG AGT GTA ACT TGG ATC ATC TGT AAG GAG AGC ATC AGT GTC AGC TCA GAG CAG CTG GCA CAA TTC CGC AGC CTT CTA TCA AAT GTT

180
Glu Gly Asp Asn Ala Val Pro Met Gln His Asn Asn Arg Pro Thr Gln Pro Leu Lys Gly Arg Thr Val Arg Ala Ser Phe CTS
GAA GGT GAT AAC GCT GTC CCC ATG CAG CAC AAC AAC CGC CCA ACC CAA CCT CTG AAG GGC AGA ACA GTG AGA GCT TCA TTT TGATGATTCTG

200
AGAGAAACTTGCTTCTCAGAAACACAGCCCTGCTCTGACATAATCCAGTTAAAAATAATATTTTAAAGAAATAAATTTATTTC AATATAGCAAAAAAAAAAAAAA(GAATTC)

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Human carbonic anhydrase I (CAI) is an erythrocyte-specific zinc metallo-enzyme which catalyses the reversible hydration of CO<sub>2</sub>. It is a member of a multigene family occurring on the long arm of chromosome 8 (Edwards, Y.H. et al. (1986) *Ann. Hum. Genet.* 50, 123-129; Davis, M.B. et al (1987) *Som. Cell Mol. Genet.*, in press). Human CAI cDNA-containing clones were isolated from a  $\lambda$ gt11 expression library prepared from human reticulocyte poly-A<sup>+</sup> RNA. Analysis of a number of clones indicates the use of multiple polyadenylation sites: the example shown above has the shortest 3'-untranslated sequence.