

Isolation of cDNAs encoding human manganese superoxide dismutase

Konrad Heckl*

Ernst-Boehringer-Institut für Arzneimittelforschung, Dr.Boehringergasse 5-11, A-1121 Vienna, Austria

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Three different metallo forms of Superoxide Dismutase are known (1). We have isolated cDNAs encoding human Manganese Superoxide Dismutase (EC, 1.15.1.1) from a placental cDNA library by hybridization with synthetic oligonucleotide probes. Probes were constructed according to the published amino acid sequence (2). DNA sequence analysis revealed the isolation of cDNAs with identical coding region, however, exhibiting different 3'-untranslated regions. The predicted mature protein contains 198 amino acids and has a N-terminal leader sequence of 24 amino acids (arrowed). There are differences to the reported amino acid sequence.

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                                EcoRI      M L S R A V C G T S
                                GGGCGAATTCAGCATGTTGACCGGGCAGTGTGGCCACCAGC      44

R  Q  L  P  P  V  L  G  Y  L  G  S  R  Q  ↓  K  H  S  L  P  D  L  P  Y  D  Y  G  A  L
AGGCAGCTGCGCTCGGTTTTGGGGTATCTGGGCTCCAGGCAGAAGCACAGCCTCCCGACCTGCGCTACGACTACGGCGCGCTG      128

E  P  H  I  N  A  Q  I  M  Q  L  H  H  S  K  H  H  A  A  Y  V  N  N  L  N  V  T  E
GAACCTCACATCAACGCGCAGATCATGCAGCTGCACCAACAGCAAGCAACGCGGCCTACGTGAACAACTGAACGTCAACGAG      212

E  K  Y  Q  E  A  L  A  K  G  D  V  T  A  Q  I  A  L  Q  P  A  L  K  F  N  G  G  G
GAGAAGTACCAGGAGCGTTGGCCAAGGGAGATGTTACAGCCAGATAGCTCTTCAGCGCTGCATGAAGTTCATGGTGGTGGT      296

H  I  N  H  S  I  F  W  T  N  L  S  P  N  G  G  G  E  P  K  G  E  L  L  E  A  I  K
CATAATCATAGCATTTTCTGGACAAACCTCAGCCCTAACGGTGGTGGAGAACCCAAAGGGGAGTGTCTGGAAGCCATCAAA      280

R  D  F  G  S  F  D  K  F  K  E  K  L  T  A  A  S  V  G  V  Q  G  S  G  W  G  W  L
CTGGACTTGGTTCCTTTGACAAGTTAAGGAGAAGCTGACGGCTGCATCTGTTGGTGTCCAAGGCTCAGGTTGGGGTTGCCTT      464

G  F  N  K  E  R  G  H  L  Q  I  A  A  C  P  N  Q  D  P  L  Q  G  T  T  G  L  I  P
GGTTTCAATAAGGAACGGGGACCTTACAAATTGCTGCTGTGTOCAAATCAGGATCCACTGCAAGGAACCAACAGGCGTTATTCCA      548

L  L  G  I  D  V  W  E  H  A  Y  Y  L  Q  Y  K  N  V  R  P  D  Y  L  K  A  I  W  N
CTGCTGGGGATTGATGTGTTGGGAGCAGCTTACTACCTTCAGTATAAAAAATGTCAGGCGCTGATTATCTAAAAGCTATTGGAA      632

V  I  N  W  E  N  V  T  E  R  Y  M  A  C  K  K  *
GTAATCAACTGGGAGAATGTAACCTGAAAGATACATGGCTTGCAAAAAGTAAACCAGATCGTTATGCTGAGTATGTTAAGCTCT      716
TTATGACTGTTTTGTAGTGGTATAGAGTACTGCAGAAATACAGTAAGCTGCTCTATTGTAGCATTTCCTGATGTGCTTAGTCA      800
CTTATTTCATAAAACAACCTAATGTCTCGAATAATTCTTACTAAACATTTTGTATTGGGCAAGTGAATTGAAAAATAGTAAATGC      884
TTTGTGTATTGAATCTGATTGGACATTTCTTCAGAGAGCTAAATTCATATGTCATTATATAAAACCATCAAAAATATTCAT      958
CCATATACTTTGGGACTTGTAGGATGCCTTTCTAGTCTATTCTATTGCAGTTATAGAAAAATCTAGGAAATTCGCC      1046
                                EcoRI
    
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*Present address: European Molecular Biology Laboratory, Meyerhofstrasse 1, PO Box 10.2209, D-6900 Heidelberg, FRG

References

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