Nucleotide and deduced amino acid sequence of *Mycobacterium leprae* manganese superoxide dismutase

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In order to identify protein coding sequences on *M.leprae* DNA we obtained a clone (Y3164), isolated from an *M.leprae* DNA library cloned in lambda gt11 (1) that expresses *M.leprae* epitopes recognised by monoclonal antibodies raised against the organism (2). The 2.8 kb insert of Y3164 was used to probe an *M.leprae* cosmid library (3). A 3.5 kb Pst1 fragment that hybridised to the Y3164 insert was sequenced. The deduced amino acid sequence from one of the open reading frames (621 bps) exhibits significant homology with known Mn/Fe superoxide dismutase sequences (EC.1.15.1.1)

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      V A E Y T L P D L D W D Y A
1  AGGAAGGAACGTCGTGGCTGAATACACCCTGCCCCGATTGGACTGGGACTACGCA
   A L E P H I S G E I N E I H H T K H
56  GCGCTGGAACCACATATCTCTGGTGAGATCAACGAGATCCACCACCAAGCAC
   H A A Y V K G V N D A L A K L D E A
110 CACGCCGCATATGTCAAAGGTGTCAATGACGCGCTTGCCAACTTGACGAGGCA
   R A K D D H S A I F L N E K N L A F
164 CGCGCCAAAGACGACCACTCCGCGATTTTCTGAACGAGAAGAACCTGGCCTTT
   H L G G H V N H S I W W K N L S P N
218 CATTGGGGCGGCCACGTCAACCACTCCATCTGGTGAAGAACCTCTCTCCGAAC
   G G D K P T G G L A T D I D E T F G
272 GGTGGCGATAAGCCGACCGGCGGGCTAGCCACTGACATTGATGAAACGTTTGGG
   S F D K F R A Q F S A A A N G L Q G
326 TCGTTCGACAAATTCCGCGCTCAATTCAGCGCGGCCGCAATGGCCTGCAAGGG
   S G W A V L G Y D T L G N K L L T F
380 TCAGGTTGGGCAGTACTCGGCTACGACACGCTCGGCAACAAGCTGCTTACATTC
   Q L Y D Q Q A N V S L G I I P L L Q
434 CAGCTGTATGACCAACAGGCCAACGTCTCACTCGGCATCATTCCTTGTTCAG
   V D M W E H A F Y L Q Y K N V K A D
488 GTCGACATGTGGGAACATGCTTTTACCTGCAATACAAAACGTCAAGGCGGAT
   Y V K A F W N V V N W A D V Q S R Y
542 TACGTCAAAGCGTTTGGGAATGTCGTAAACTGGGCGGATGTGCAGTCACGTTAC
   M A A T S K T Q G L I F D
596 ATGGCTGCAACATCTAAGACGCAGGGACTGATATTCGACTGATTCCATCTTAGT

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References

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2. Young, D.B. et al. (1985) Clin. Exp. Immunol. 60, 546-552.
3. Clark-Curtiss, J., et al. (1985) J. Bact. 161, 1093-1102.