

**Molecular Cloning, Expression, and Characterization of the Cu,Zn
Superoxide Dismutase (SOD1) Gene from the Entomopathogenic
Fungus *Cordyceps militaris***

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We describe the molecular characterization of the Cu,Zn superoxide dismutase (SOD1) gene of *Cordyceps militaris*, which is one of the entomopathogenic fungi called a vegetable wasp and plant worm. The SOD1 gene of *C. militaris* spans 922 bp and consisted of three introns and four exons coding for 154 amino acid residues. The deduced amino acid sequence of the *C. militaris* SOD1 cDNA showed 88% identity to *Claviceps purpurea* SOD1, 82% to *Neurospora crassa* SOD1, and 75% - 64% to SOD1 sequences from other fungi. The *C. militaris* SOD1 possesses the typical metal binding ligands of six histidines and one aspartic acid common to fungal SOD1s. The cDNA encoding *C. militaris* SOD1 was expressed as a 17-kDa polypeptide in the baculovirus-infected insect Sf9 cells. The enzyme activity of the purified recombinant *C. militaris* SOD1 was approximately 568 U per mg⁻¹. Southern blot analysis of the genomic DNA suggested the *C. militaris* SOD1 was a single gene. Northern and Western blot analysis and enzyme activity assays indicated SOD1 was constitutively expressed. This is the first report of an SOD1 gene from any entomopathogenic fungus.