

Structural study of DNA binding protein pdcd5 from *Sulfolobus solfataricus*

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The Sso0352 (pdcd5) gene of the hyperthermophilic archaeon *Sulfolobus solfataricus* was predicted to encode a hypothetical DNA binding protein which is homologous to the apoptosis- related protein Tfar19 in human leukemia cell line. The full length of pdcd5 protein was expressed to a large scale in bacteria system successfully and its DNA-binding property was assessed by gel retardation experiments. With the ability to bind dsDNA in a sequence-general manner, the exact role of pdcd5 in the organism needs to be further investigated. The secondary structure was preliminarily analyzed to be an all helix structure by using circular dichroism and ¹H NMR spectrum. The pdcd5 crystals belong to the space group C2 with unit-cell dimensions of $a = 79.7$ $b = 36.8$ $c = 36.99$ Å, $\beta = 94.45^\circ$. To understand the DNA binding feature, structure determination of pdcd5 protein and its complexes with DNAs are in progress.

Keywords: DNA binding protein, hyperthermophilic archaea, x-ray crystallography