

X-ray Diffraction Studies of CEBP α -bZIP Bound to DNA

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Basic region leucine zipper (bZIP) DNA-binding proteins are a large class of eukaryotic transcription factors. The members of the C/EBP (CCAAT/enhancer binding) family have been implicated in controlling a variety of cellular functions including cell differentiation, growth, and more recently tumorigenesis. To understand the molecular basis of their specific DNA recognition we have initiated crystallographic studies of complexes of several bZIP proteins with their cognate DNA oligomers. Cocrystals of C/EBP α bZIP peptide bound to 21-mer DNA were obtained and belong to the P2₁2₁2 space group with a=53.3 Å, b=67.9 Å, c=142.6 Å. Diffraction data has been collected to 2.8 Å on a synchrotron source, at 100 K (crystals diffracted only to about 4 Å at laboratory X-ray source). Evaluation of possible solutions obtained by molecular replacement is in progress.