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Metal Ion Exchange in Zn-Dependent S1 Nuclease: Effect on the Structure

S1 nuclease is an enzyme commonly used in biotechnology applications. Its activity depends on the presence of three Zn(II) ions in the active site. In this work, we examine the possibility of exchanging the natively present Zn(II) ions to Cd(II). EDTA-treated S1 nuclease was successfully crystallized in the presence of CdCl2. The anomalous signal from three different energies confirmed the exchange of two Zn(II) ions to Cd(II). The residues of the active site remained structurally conserved.

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