AcrIIA4 Anti-CRISPR Protein – 5vw1.pdb

AcrIIA4 model to be judged has an orange/silver/white backbone.

What is Displayed	How it is Displayed	Why it is Important
N Terminus	Blue Endcap	Amino terminus – beginning of the protein chain
C Terminus	Red Endcap	Carboxyl terminus – end of the protein chain
Primary Structure	Green strings	Primary structure determines the sequence of amino acids in a protein
Beta Pleated Sheets	Silver painted backbone	Secondary structures with hydrogen bonding between parallel peptides
Alpha Helices	White painted backbone	Secondary structures with hydrogen bonding between amine groups and carboxyl groups, with 3.6 residues per turn and a separation of 1.5 Å
3_{10} Helix	Dark blue colored backbone	Secondary structures like alpha helices, with 3 residues per turn and a separation of 2.0 Å
Lys18	Amino acid sidechain	Prevents entrance of non-complimentary DNA in RuvC active site
Asn25, Ser26	Blue LEGO bricks	Prevents Cutting of non-target DNA by blocking RuvC active site

Asp14, Asn36	Paper Clips	Prevents PAM nucleotide stabilization & PAM recognition
Asn39, Asp69	3D Printed Sidechain	Prevents verification of non-target DNA
Glu70	3D Printed Sidechain	Prevents PAM recognition
Asp37	Red Push pin	Prevents PAM recognition; interacts with both Topo and CTD
Glu40	White Push pin	Prevents PAM recognition; interacts with CTD
RuvC Domain of CRISPR Cas9 (residues 960-1021)	Yellow alpha-carbon backbone	AcrIIA4 binds to the RuvC domain of the CRISPR Cas9 Protein to prevent cleavage of DNA.
Topo Domain of CRISPR Cas9 (residues 1102-1149)	Red alpha-carbon backbone	AcrIIA4 binds to the Topo domain to prevent PAM recognition by the Cas9 protein.
CTD Domain of CRISPR Cas9 (residues 1200-1247)	Light blue alpha-carbon backbone	AcrIIA4 binds to the CTD domain to prevent PAM recognition by the Cas9 protein.