

## BioE 144L Lab 2

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be144-03  
MW9-12  
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### **1 List the corresponding images for the PDB ID**

- 1.1 1E9R: Images 1 and 2**
- 1.2 4AT1: Image 3**
- 1.3 1AON: Image 4 and 5**
- 1.4 1BL8: Images 6 and 7**
- 1.5 1MSL: Image 8 and 14**
- 1.6 2POR: Image 11**
- 1.7 2JK2: Image 9**
- 1.8 1ID1: Image 10**
- 1.9 2WFH: Image 12**
- 1.10 3CEQ: Image 13**

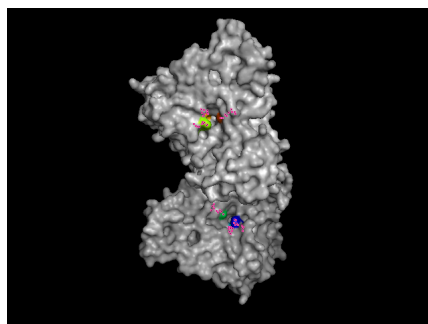


Figure 1: Full image of 1ECX aminotransferase. Active site residues are highlighted in color.

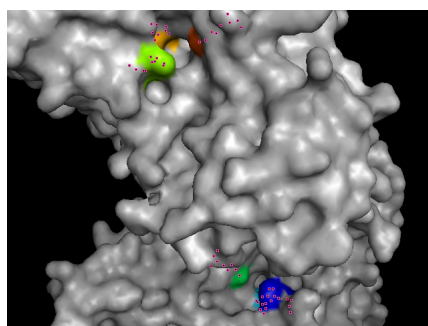


Figure 2: A close-up of the active site in 1ECX aminotransferase.

## 2 Pick an enzyme whose 3D structure and catalytic sites are known and create 2 images using PyMol highlighting the enzyme active site.

### 2.1 PDB entry 1ECX

The Catalytic Site Atlas entry for 1ECX indicates catalytic sites at residues His99, Asp177, and Lys203. 1ECX is a NifS-like protein aminotransferase from *Thermotoga maritima*, a hyperthermophilic organism, that functions to donate elementary sulfur from cysteine during iron sulfur cluster biosynthesis. Kaiser et al. (2000) proposes a sulfur activation mechanism, indicating that the His99 functions crucially as an acid-base catalyst in this reaction.