3.03 Exploring ATCase: The T-state

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Now you've explored the R-state in some detail. Let's look at the T-state.

Start with these exercises:

1. Toggle the R-state off and show the T-state. (Hint: use the "orient" command from the "A" menu to see the whole T-state structure).
2. Show the structure as cartoons.
3. Select the catalytic and regulatory subunits and color them differently. If you don't know how to do this, look at the commands in the previous exercise.
4. Select CTP (select CTP, resn CTP), show it as spheres and color it differently so it is easy to visualize.

PYMOL: ATCase Explore the T State Q1

2/2 points (ungraded)

What subunit of ATCase does CTP bind to?

- ○ The catalytic subunit
- ◉ The regulatory subunit ✔

What type of allosteric regulator is CTP?

- ○ Homotropic
- ◉ Heterotropic ✔

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PYMOL: ATCase Explore the T State Q2

2/2 points (ungraded)

How many total molecules of CTP are bound to the multimeric ATCase T-state structure?

6 ✔

6

What secondary structure elements of the protein are the shortest distance to bound CTP?

- ○ A dense region of multiple alpha helices
- ○ A parallel beta sheet connected by loops
- ◉ An antiparallel beta sheet connected by loops ✔
- ○ A disordered and flexible region composed only of loops

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