4.0.2 Comparing brain-type and mitochondrial-type CK

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Now we are going to compare brain-type CK with mitochondrial-type CK. For mitochondrial-type CK, we will be using the PDB structure 1QK1.

Comparing brain-type and mitochondrial-type CK: Q1

2/2 points (ungraded)

How many subunits are there in mitochondrial type CK (1QK1)?

8 ✔

8

How many subunits are there in brain type CK (3B6R)?

2 ✔

2

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Now, follow these steps to start comparing the structures:

1. Fetch the PDB structure 1QK1 ("fetch 1QK1" should work!). Be sure you are adding this to a session that already contains 3B6R.
2. Write a selector for chain B of 1QK1, and a different selector for chain B of 3B6R.
3. Align these two chains using the align command.

Remember, you may also want to hide the other chains of the structures, and use a cartoon or ribbon representation for the chains you want to see.

Comparing brain-type and mitochondrial-type CK: Q2

1/1 point (ungraded)

The 'align' command first performs a sequence alignment, then performs a structural alignment.

What is the root mean squared deviation (RMS) that you find when you align chain B of 3B6R with chain A of 1QK1?

1.126 ✔

1.126

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You can create a new alignment object when you use the "align" command.

In the example below:

- MT_a is the selection of mitochondrial CK chain A
- Brain_b is the selection of brain CK chain B

Write in the command line:

```
align Brain_b, MT_a, object="new_align"
```

You will see that a new object appears. In the sequence view, you can also see a side-by side view of the sequences, lined up.

For the next question, **scroll through this sequence view and try to get a sense for which parts of the two CK variants are most similar.**

Comparing brain-type and mitochondrial-type CK: Q3

0/1 point (ungraded)

What part of CK is most similar between the brain and mitochondrial isoforms? Any answer is acceptable - we will delve into more detail very soon!

186-291 ✖

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