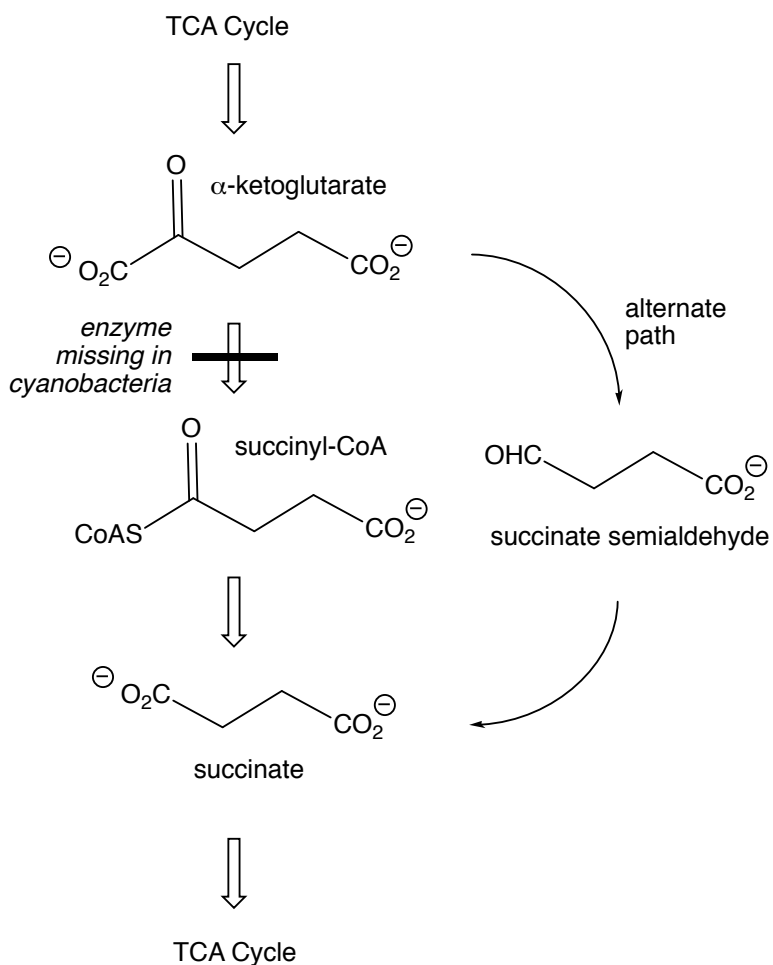


Study Question 8: Pathway Alternatives

Cyanobacteria have an "incomplete" TCA cycle because they lack one of the enzymes. The scheme below shows part of the normal cycle with a missing enzyme, and the alternative reaction path that is taken to keep the TCA-like cycle moving. Cofactors are not shown!



1. Exam the alternative pathway using a "bird's eye view." What are the big changes that need to happen as you move through the pathway? What kinds of reactions are these, broadly (birdly?) speaking? Give descriptive phrases.
2. What cofactors appear to be needed in each step?
3. Which steps in glycolysis, the normal TCA cycle, or in the processing of pyruvate are analogous to these steps?
4. Draw complete mechanisms for each step.