

step 6? What compound is lost in step 7?

6. Steps 1 through 3 in sequence are analogous to what other more familiar sequence of reactions? In what way do the two sets of reactions differ⁹. (Hint: Compare the shift of the hydroxyl in both cases and its implications.
7. Ornithine is an amino acid with one less methylene group than lysine. It is an important intermediate in arginine biosynthesis and in the urea cycle. What TCA cycle intermediate should be a direct precursor of ornithine?
8. Assuming the α -amino adipate pathway is unbranched, what step would be likely to regulate the flow of intermediates in the pathway? What mode of regulation would be expected?
9. *Neurospora crassa* was grown in the presence of 1-¹⁴C- α ketoglutarate and 2-¹⁴C- α -ketoglutarate in successive experiments. Indicate which carbons, if any, would be labeled in lysine and saccharopine (compound E) for each experiment .
- 10 A mutant lacking step 4 activity might be expected to accumulate compound C. This mutant will grow in the presence of DL- α -amino adipate but no longer accumulates C. What might be a reasonable explanation for this phenomenon?