3-Hydroxy-3-methyl glutaryl CoA (HMG CoA) is an intermediate in leucine degradation, steroid biosynthesis, and ketogenesis as is diagrammed below.


2. Ketogenesis (reactions I, II & III) is not likely to be inhibited by (-) hydroxycitrate. Taken with the fact that there are isoenzymes for reactions I and II, (J. Biol.Chem. (1973) 248, 2275-2284) where in the cell does ketogenesis take place? How many intracellular pools of HMG CoA are there in a liver cell?

3. Compare the reactions catalyzed by HMG CoA synthetase (II), HMG CoA lyase (III); citrate synthetase (TCA cycle enzyme), and citrate cleavage enzyme in terms of their similarities. Can you predict where the equilibrium of each reaction would lie based on the differences in the reactions. (Remember that equilibrium is a thermodynamic state and has nothing to do with mechanism.)