

SAMPLE TCA CYCLE QUESTIONS

1. "It takes a village to convert pyruvate to acetylCoA".
Explain in precise molecular terms what this strange statement means.

2. The year is 1973; your lab still doesn't have a license to use radioactive compounds. You do however have access to an excellent spectrophotometer and you can buy any reagent (including known enzymes) from Sigma chemical company. You have just heard that your competitor has identified an activity that converts isocitrate to alpha-ketoglutarate in a crude extract from a rat liver mitochondrial matrix preparation. This novel activity does not appear to require NAD for activity. This observation would seem to refute TCA cycle dogma. Describe, in biochemical detail, the experiments that would verify or dismiss this claim.