Name:_____ Student ID:_____
CHEM 161 PAL Fall 2026

# Worksheet #21: Cellular Respiration and PDH Complex

1. List the three main stages of cellular respiration and briefly describe the primary goals of each stage.

   Stage 1:

   Stage 2:

   Stage 3:

2. Answer the following questions about the Pyruvate Dehydrogenase (PDH) complex.

   *Overall Reaction Catalyzed by PDH:*

   *Enzyme class:* _____

   *Change in standard free energy*: _____

   *Circle one*: The reaction is **exergonic** **endergonic**

   *Circle one*: The reaction is **reversible** **nonreversible**

   *Purpose of the reaction*:

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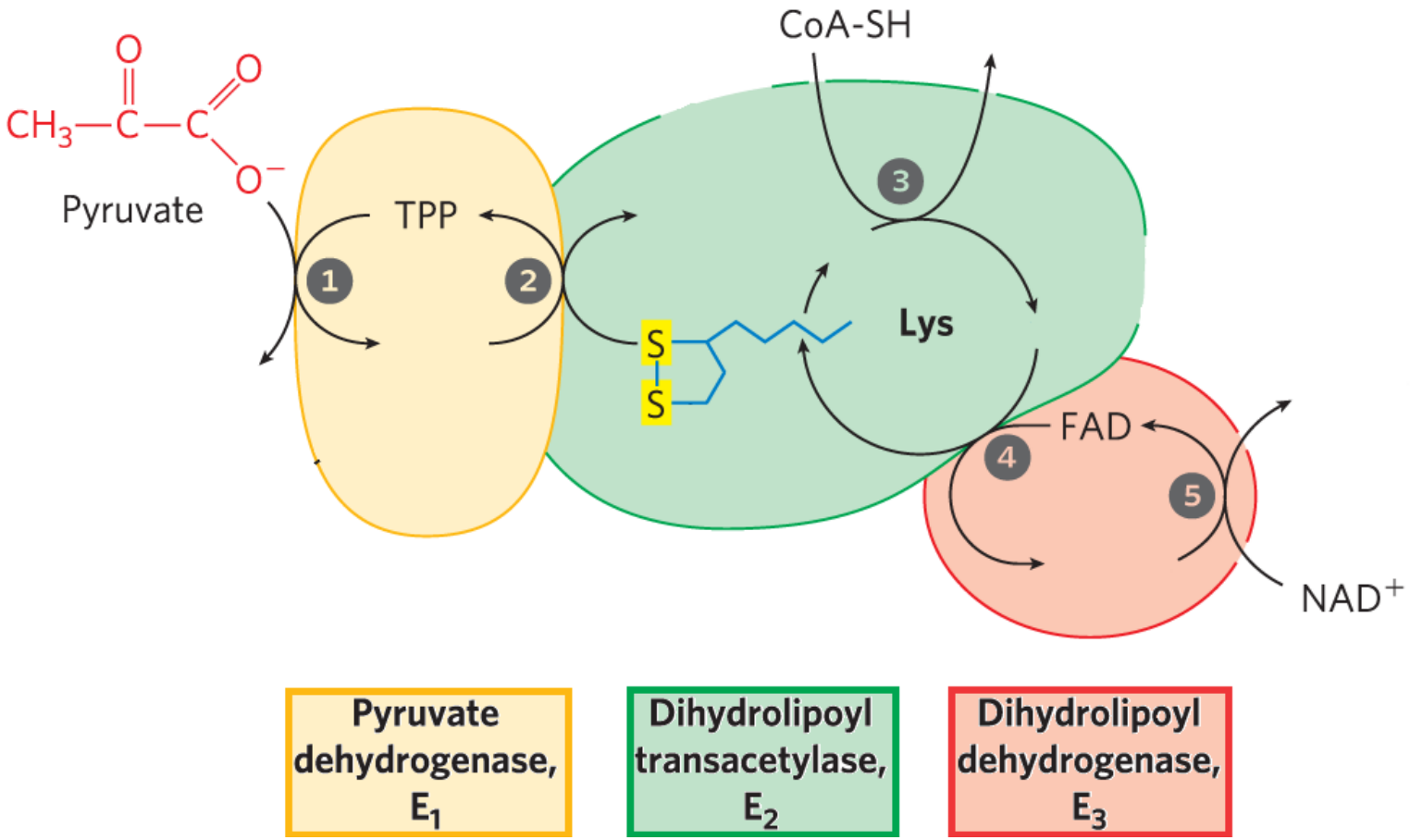
3. Using the figure below fill in the missing products and reactants as pyruvate is converted into acetyl CoA by the PDH complex.



4. PDH Complex has five different cofactors, many of which are derived from vitamins. Next to each cofactor below list the vitamin it is derived from and draw the structure of the vitamin.

   Thiamine pyrophosphate
   Vitamin: _____
   Structure:

   Flavin adenine dinucleotide
   Vitamin: _____
   Structure:

   Nicotinamide adenine dinucleotide
   Vitamin: _____
   Structure:

   Coenzyme A
   Vitamin: _____
   Structure: