

## Fermentation

- I. NAD<sup>+</sup> Regeneration
  - A. Fermentation
  - B. lactic acid
    - 1. lactate dehydrogenase
  - C. Ethanol
    - 1. step 1 = pyruvate decarboxylase
      - 1) thiamine pyrophosphate
    - 2. step 2 = alcohol dehydrogenase
      - a. Zn ion
      - b. liver
  - D. Propionic acid
    - 1. org = *Propionibacterium freudenreichii*
  - E. Butanol & acetone