

# GENERAL FEATURES OF METABOLISM

## CATABOLISM

Carbohydrates  
Protein Fat

(degradation)  
(oxidation)  
(exergonic)

Carbohydrate phosphates  
 $\alpha$ -Ketoacids  
Amino acids  
Acyl-CoAs

## ANABOLISM

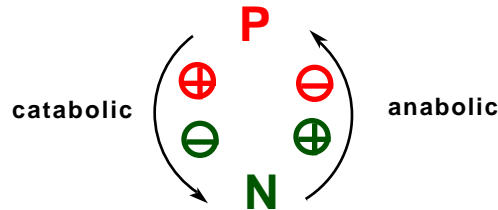
Proteins Polysaccharides  
Lipids Nucleic acids  
Membranes  
Organelles  
Cells



oxidation of metabolites,  
reduction of coenzymes



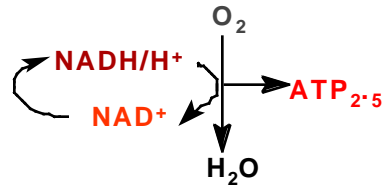
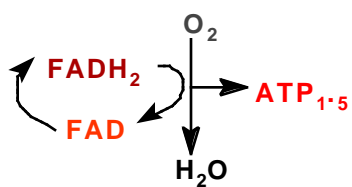
## RECIPROCAL REGULATION



reduction of metabolites,  
oxidation of NADPH

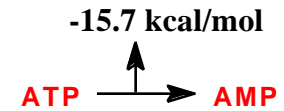
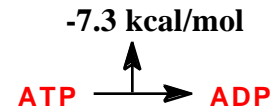


irreversible opposing steps



energy storage

oxidative phosphorylation



energy supply

reaction coupling