

Metabolic Pathways

Biology

Anabolism and catabolism, and how pathways are regulated.

Catabolism

- Breaks large molecules down
- Releases energy
- Respiration, digestion, glycolysis
- Generally oxidative
- Produces ATP and reduced coenzymes

Anabolism

- Builds large molecules
- Consumes energy
- Protein synthesis, photosynthesis
- Generally reductive
- Uses ATP and reduced coenzymes

THE DIFFERENCE THAT MATTERS

End-product inhibition regulates most pathways: the final product inhibits an early enzyme, usually allosterically.

Regulating the first committed step avoids wasting intermediates. It is the standard control point in every pathway.