Phosphorylation

Prerequisites

Knowledge of glycolysis

Concept of sugar metabolism

Concepts of Kreb's cycle

RECAP

Glycolysis takes place in mitochondria

Various enzymes are involved

Electron transfer takes place along with protons

Learning Outcomes

Metabolism of different metabolites

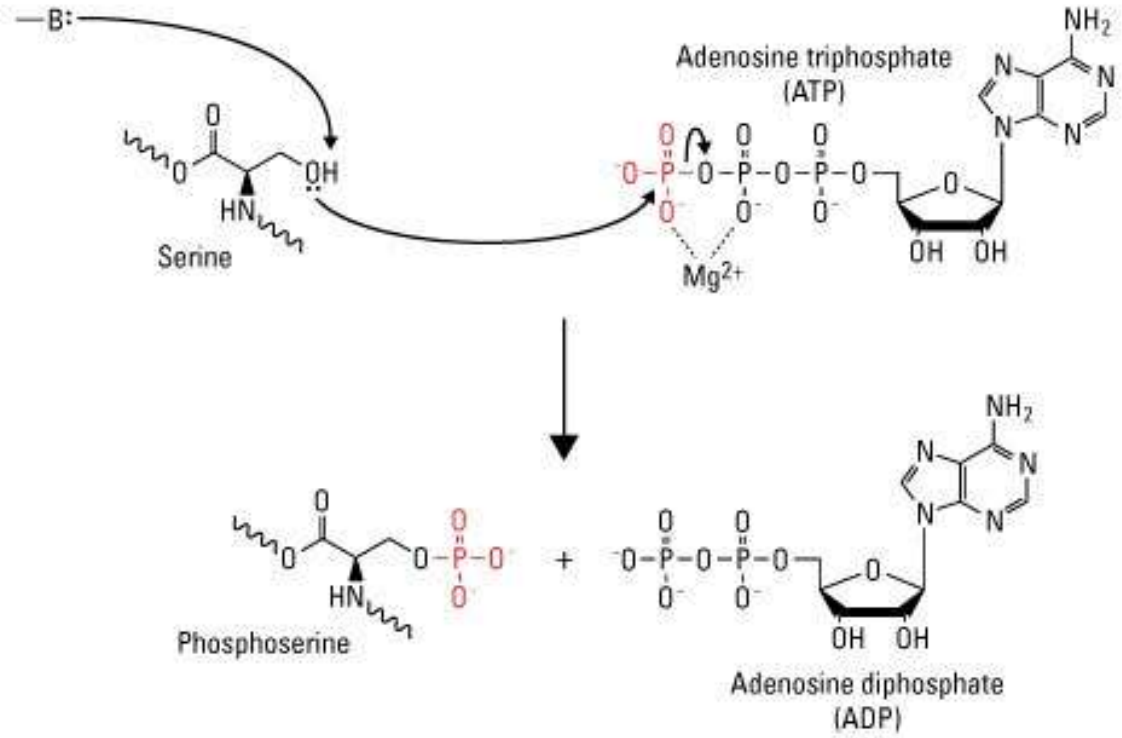
Phosphorylation

Agents of Electron transfer

Energy generation

Overview of Kreb's Cycle/Citric Acid Cycle

- It is the attachment of phosphoryl group in different processes taking place in the cell
- Protein phosphorylation is especially important for their function; for example, this modification alters the function of almost half of the enzymes present in *Saccharomyces cerevisiae*, thereby regulating their function.
- Phosphorylation of sugars is often the first stage in their catabolism

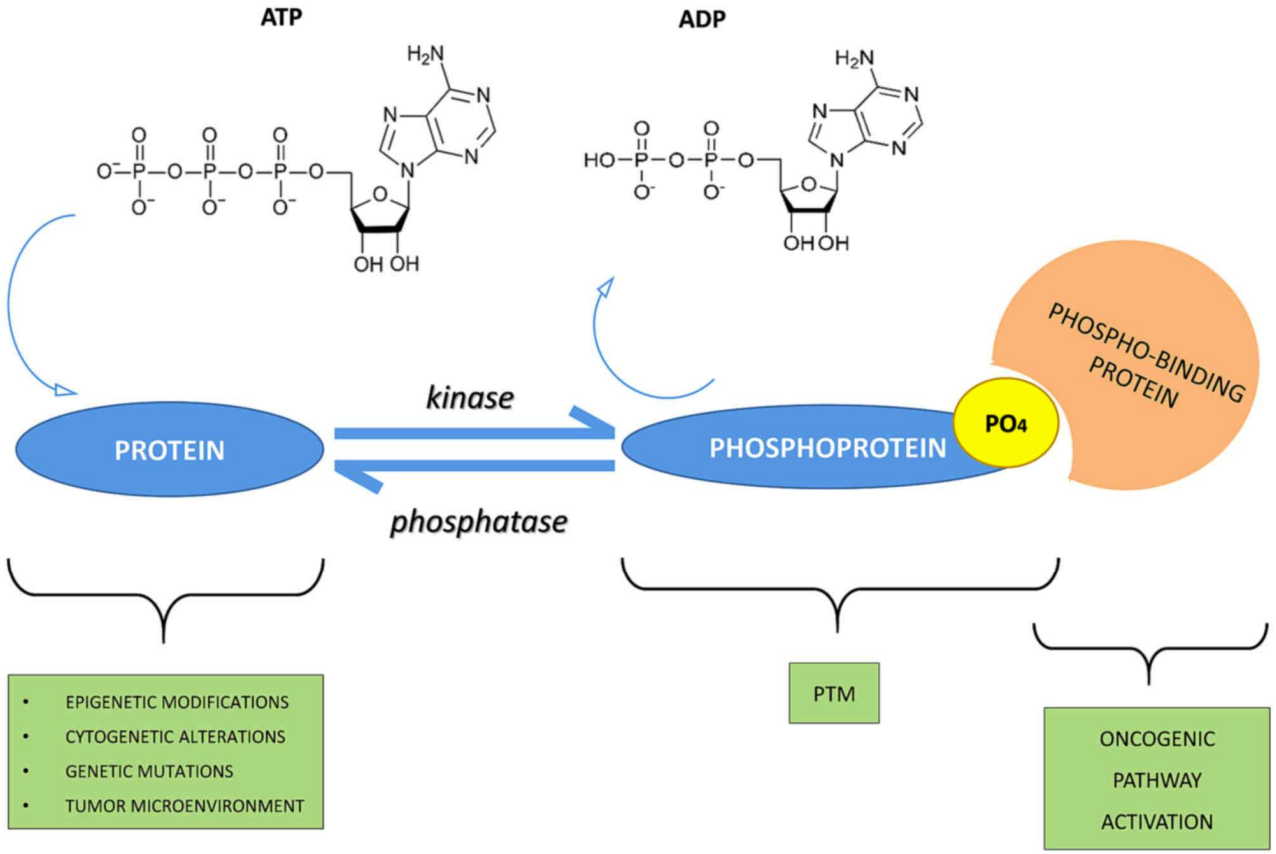

—B:
Serine
Adenosine triphosphate
(ATP)
Mg^{2+}
Phosphoserine
Adenosine diphosphate
(ADP)

Phosphorylation

- Phosphorylation allows cells to accumulate sugars because the phosphate group prevents the molecules from diffusing back across their transporter. .
- Phosphorylation of glucose is a key reaction in sugar metabolism because many sugars are first converted to glucose before they are metabolized further.
- Phosphorylation of glucose is imperative in processes within the body. For example, phosphorylating glucose is necessary for insulin-dependent mechanistic target of rapamycin pathway activity within the heart.

School of Basic & Applied Sciences

Course Code : BSCC3001 **Course Name: BIOMOLECULES**



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THANK YOU