Biology 20

Unit C: Photosynthesis and cellular respiration

Glycolysis and the Krebs cycle

The sugar splits before the loop

- A glucose hexagon in the cytosol leads to two pyruvate circles.
- NADH is marked in the cytosol and again by the matrix loop.

Cytosol first, matrix second

- Glycolysis in the cytosol forms pyruvate and NADH.
- The Krebs cycle turns in the mitochondrial matrix.
- That loop releases carbon dioxide and forms NADH and FADH.

Key terms

glycolysis

The cytosol pathway that splits glucose into pyruvate and forms NADH.

Krebs cycle

The loop in the mitochondrial matrix that releases carbon dioxide and forms NADH and FADH.

pyruvate

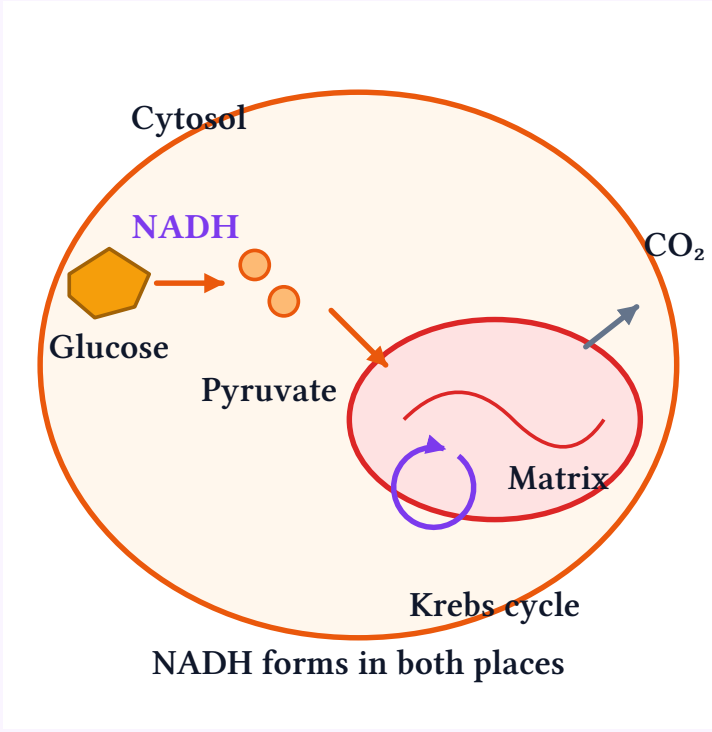
The three-carbon product that leaves glycolysis and can enter the mitochondrion.

FADH

A carrier, formed in the Krebs cycle, that holds reducing power for later ATP production.

Into the matrix

- Pyruvate moves from the cytosol into the mitochondrion.
- The loop drawn in the matrix is the Krebs cycle.
- The caption marks NADH in both places.



NADH forms in both places

Products from one glucose

- One glucose in glycolysis yields two pyruvate molecules.
- The matrix loop then forms NADH and FADH and releases carbon dioxide.

Pea flask comparison

- Germinating peas are the flask expected to warm.
- Dry dormant peas are the matched flask.



Two stages

- Place glycolysis and name its products.
- Place the Krebs cycle and name NADH, FADH, and carbon dioxide.

NADH and $FADH_2$ still lead to ATP

- NADH and FADH are holding reducing power.
- The inner membrane is where that power becomes ATP.

Image credits

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