

Lipids as an energy source

The utilization of lipids for energy production takes place in three basic phases:

1. **Lipid mobilization** - hydrolysis of TAG to MK and glycerol and their transport blood.
2. **Activation of MK** in the cytosol and **their transport** into the matrix mitochondria.
3. **β -oxidation** - breaking down MK into acetyl~CoA, which enters the Krebs cycle, or ketone bodies are formed from it.

Lipid mobilization - lipolysis

The mobilization of stored lipids is enzymatically ensured by **hormone-sensitive lipase'** (*HSL*). It catalyzes the reaction:



The released fatty acids bind to *serum albumin*, which transports them to their destination (e.g. the liver). Glycerol is transported freely dissolved in plasma.

Regulation of lipolysis

As the name suggests, the enzyme is under strict hormonal control. Its activity is stimulated by the phosphorylation of its molecule. *Insulin as an anabolic hormone causes its inhibition, counterregulatory hormones (glucagon, catecholamines) or thyroid hormones on the contrary activate it.*

Reference

- ws:Lipidy jako zdroj energie