

Use of ketones

Ketones are products of the breakdown of fatty acids under certain metabolic conditions (e.g. starvation). Ketones include acetoacetate, beta-hydroxybutyrate, and acetone. They are created only in the liver and are used by extrahepatic tissues as a temporary source of energy.

Chemical processes

Ketones are **polar** and are therefore freely transported **in the plasma**. Their utilization occurs only **extrahepatically**, because hepatocytes do not contain the enzyme required for their activation. First, **β -hydroxybutyrate is oxidized to acetoacetate**, which is subsequently activated by the transfer of coenzyme A from succinyl~CoA. Acetocetyl~CoA is **converted to AcCoA** (part of β -oxidation, catalyzed by thiolase), which enters the Krebs cycle.

Use of ketones by individual organs

Cardiac muscle, skeletal muscle and renal cortex **prefer ketone** oxidation over glucose oxidation. During starvation, the brain adapts **to the burning of ketones** - during long-term starvation, up to **50 %** of its energy requirements are covered by the oxidation of ketones.

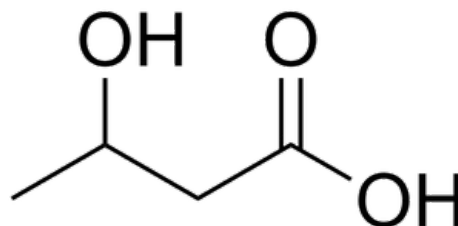
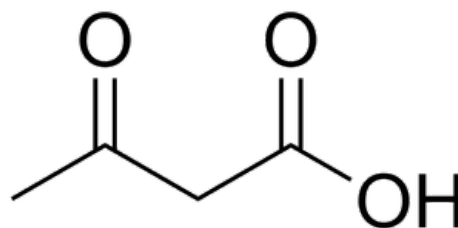
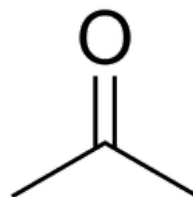
Links

Related Articles

- Ketones
- Ketones in the urine
- Ketones in the urine/determination

External links

- Ketolátky (česká wikipedie) (<https://cs.wikipedia.org/wiki/Ketol%C3%A1tky%7C>)



Scheme of individual ketones - acetone, acetoacetate and beta-hydroxybutyrate