

Conversion of glucose to galactose

Galactose is used in the human body for the synthesis of lactose in the lactating mammary gland or in the formation of glycoproteins, proteoglycans and glycolipids.

As mentioned above, the interconversion of glucose to galactose (and back) does not take place in the form of free carbohydrates. These must be activated first.

After the activation of glucose to UDP-1-glucose, its isomerization to UDP-galactose occurs :

UDP-1-glucose ↔ UDP-galactose

(catalyzed by 4-epimerase)

The formed UDP-galactose is a macroergic compound and can be directly used for the synthesis of the aforementioned compounds.

Lactose synthesis takes place **only in lactating mammary gland**.

It combines UDP-galactose with glucose (catalyzed by galactosyltransferase).

Lactation is supported by prolactin - a peptide hormone from the adenohypophysis.

Template:Navbox - přeměna látek a energie v buňce