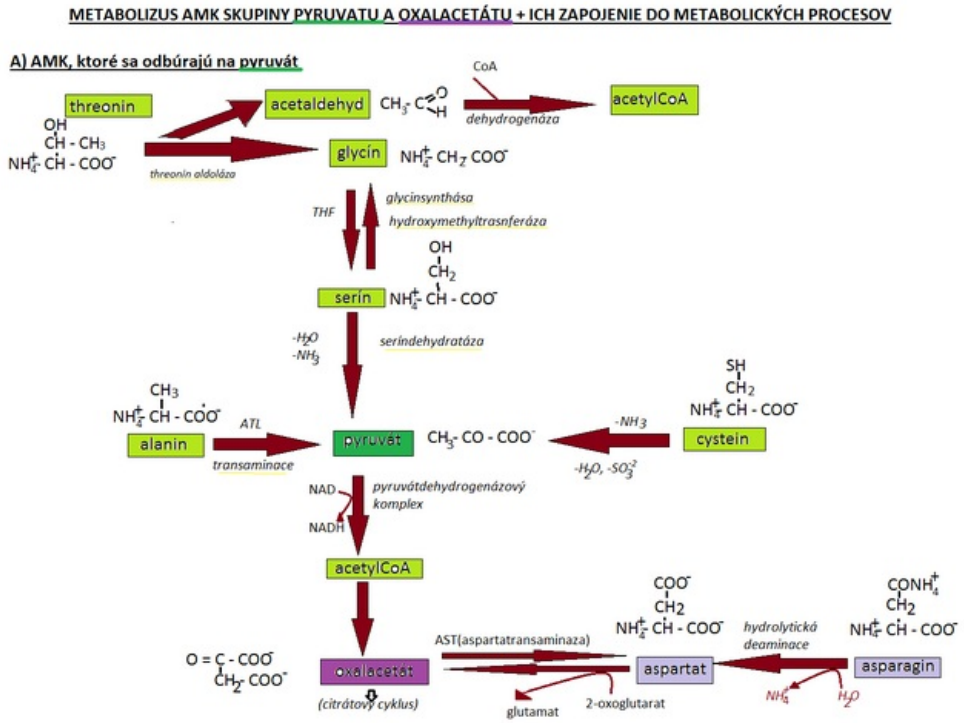
Metabolism of AMK groups of pyruvate and oxaloacetate

Among the AMKs that we classify in the group of ``pyruvate *and* ``*oxalacetate* are: **threonine, glycine, serine , alanine, cysteine, aspartate, asparagine**. Pyruvate and oxaloacetate are important later in the citrate cycle.

Pyruvate group

- *Threonine* is converted to glycine and acetaldehyde by *threoninaldolase*. Acetaldehyde can be further dehydrogenated and converted to acetyl-CoA in the presence of coenzyme A. Acetyl-CoA can be used in β-oxidation.
- '*Glycine* is converted by the enzyme ``serine hydroxymethyltransferase *into serine, which can be converted back by* ``*threoninaldolase* and using THF (*tetrahydrofolate*, group acceptor) glycine.
- '**Serine** is converted to pyruvate in a reaction catalyzed by ``serine dehydratase *and* H_2O *and* NH_4^{+} *are released Vulture>.*
- **Alanine** is transaminated with the help of ALT (*alanine aminotransferase*). In this reaction, the amino group is reversibly transferred from alanine to 2-oxoglutarate to form pyruvate and glutamate.
- **Cysteine** loses NH_3 releasing H_2S or SO_3^{2-} and pyruvate is formed.



Oxalacetate group

- **Asparagine** is converted to **aspartate** by hydrolytic deamination, when H_2O is supplied and NH_4 is released.
- **Aspartate** is converted to oxaloacetate by transamination using AST *(aspartate aminotransferase)*.

Links

Related Articles

- β-oxidation
- Amino Acids
- Pyruvate

References

- ws:Metabolismus AMK skupiny pyruvátu a oxalacetátu
- {{#switch: book

|book =

Incomplete publication citation. MATOUŠ, Bohuslav, et al. *Basics of medical chemistry and biochemistry.* Prague : Galen, 2010. 540 s. 978-80-7262-438-6.

|collection =

Incomplete citation of contribution in proceedings. MATOUŠ, Bohuslav, et al. *Basics of medical chemistry and biochemistry.* Prague : Galen, 2010. 540 s. {{
#if: 978-80-7262-702-8 |978-80-7262-438-6} }
|article =
Incomplete article citation. MATOUŠ, Bohuslav, et al. 2010, year 2010,

|web =

Incomplete site citation. MATOUŠ, Bohuslav, et al. Galen, ©2010.

|cd =

Incomplete carrier citation. MATOUŠ, Bohuslav, et al. Galen, ©2010.

|db =

Incomplete database citation. Galen, ©2010.

|corporate_literature =

MATOUŠ, Bohuslav, et al. *Basics of medical chemistry and biochemistry.* Prague : Galen, 2010. 540 s. 978-80-7262-438-6} }

- {{#switch: book

|book =

Incomplete publication citation. , et alPrague : Karolinum, 0000. 269 s. 978-80-7262-438-6.

|collection =

Incomplete citation of contribution in proceedings. , et al. Prague : Karolinum, 0000. 269 s. {{
#if: 978-80-246-1416-8 |978-80-7262-438-6} }
|article =
Incomplete article citation. , et al. 0000, year 0000,

|web =

Incomplete site citation. , et al. Karolinum, ©0000.

|cd =

Incomplete carrier citation. , et al. Karolinum, ©0000.

|db =

Incomplete database citation. Karolinum, ©0000.

|corporate_literature =

Incomplete citation of company literature. , et al. Prague : Karolinum, 0000. 269 s. 978-80-7262-438-6} }