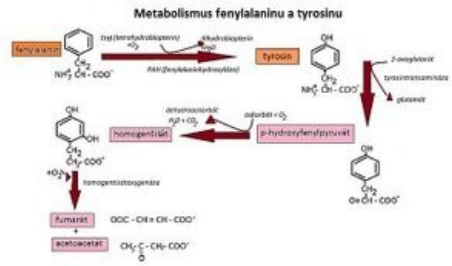
Metabolism of phenylalanine and tyrosine

We classify Phenylalanine and tyrosine among '*aromatic amino acids*. The metabolism of phenylalanine and tyrosine are linked directly to each other. The final products of their catabolism are fumarate and acetoacetate.

Reaction

- *Phenylalanine* is converted in a reaction catalyzed by PAH (*phenylalanine hydroxylase*), with the help of O_2 and THB (*tetrahydrobiopterin*) into **tyrosine** , releasing H_2O and DHB (*dihydrobiopterin*).
- *Tyrosine* is converted by *tyrosine transaminase* to p-hydroxyphenylpyruvate. 2-oxoglutarate enters the reaction and glutamate is released from the reaction.
- **p-hydroxyphenylpyruvate** in the presence of oxygen and with ascorbate gives rise to homogentisate. The reaction releases H_2O, CO_2 and the by-product dehydroascorbate.
- **Homogentisate** is cleaved under the influence of O_2 in a reaction catalyzed by *homogentisate oxygenase* and subsequently, in several steps, **fumarate and acetoacetate *are formed*.**



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Links

Related Articles

- Disorders of aromatic and branched-chain amino acid metabolism
- Metabolism of AMK group pyruvate and oxaloacetate
- Ketones
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