Enolase, also known as phosphopyruvate hydratase, is a metalloenzyme responsible for the catalysis of the conversion of 2-phosphoglycerate (2-PG) to phosphoenolpyruvate (PEP), the ninth and penultimate step of glycolysis. The chemical reaction catalyzed by enolase is:

2-phospho-D-glycerate \rightleftharpoons phosphoenolpyruvate + H2O Enolase belongs to the family of lyases, specifically the hydro-lyases, which cleave carbon-oxygen bonds. The systematic name of this enzyme is 2-phospho-D-glycerate hydro-lyase (phosphoenolpyruvate-forming).

The reaction is reversible, depending on environmental concentrations of substrates.

The optimum pH for the human enzyme is 6.5.

Enolase is present in all tissues and organisms capable of glycolysis or fermentation. The enzyme was discovered by Lohmann and Meyerhof in 1934, and has since been isolated from a variety of sources including human muscle and erythrocytes.

In humans, deficiency of ENO1 is linked to hereditary haemolytic anemia while ENO3 deficiency is linked to glycogen storage disease XIII.

see neuron specific enolase

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