

## **ISOENZYME**

Isoenzymes, also known as isozymes, are different forms of enzymes that catalyze the same chemical reaction but have distinct structural or genetic variations. These variations can result from differences in amino acid sequence or gene expression. Isoenzymes are often found in different tissues or developmental stages of an organism and can serve specific functions.

For example, the enzyme lactate dehydrogenase (LDH) exists in multiple isoenzyme forms. LDH is involved in the conversion of lactate to pyruvate, an essential step in energy metabolism. In humans, LDH has two major isoenzyme groups: LDH-1 and LDH-5. LDH-1 is predominantly found in the heart, while LDH-5 is mainly present in the liver. These isoenzymes have slightly different properties and are adapted to the specific physiological conditions of their respective tissues.

Isoenzymes provide an organism with flexibility and efficiency in performing vital biochemical reactions under varying conditions, such as tissue-specific demands or environmental factors.