

Enzymatic synthesis of fluorinated L-phenylalanine marked with hydrogen isotopes

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Enzymes are organic catalysts produced by cells. They can take part in chemical reactions and affect their speed. Enzymatic syntheses have many advantages, among others, no by-products are created, they increase the reaction speed, they consume less energy or do not require complicated apparatus.

The subject of my research is enzymatic synthesis of fluorinated L-phenylalanine. L-phenylalanine (L-2-amino-3-phenylpropionic acid) is an amino acid belonging to aromatic compounds. It has a phenyl ring and belongs to a group of strongly hydrophobic compounds. It is an exogenous amino acid for mammals, which must be supplied with food to the body. This amino acid has found a wide application in the food and pharmaceutical industries for the production of drug used in Parkinson's disease (L-DOPA).

Synthesized fluorophenylalanine was designed as a potential marker for protein synthesis in the human brain by positron emission tomography. Helps in the detection of cancer.