

Abstrakt

Cytochromes P450 are an evolutionary very old group of enzymes. It spread into many isoforms that can be found in animals, plants, fungi, bacteria, and some viruses. They play a major role in the first phase of the biotransformation of drugs, environmental pollutants and other xenobiotics. Also for this reason, they belong among the most researched enzymes.

Cytochrome P450 for its function requires an electron donor, such as NADPH:cytochrome P450 oxidoreductase and cytochrome b₅. The alternative reductase involved in this process is NADH:cytochrome b₅ oxidoreductase, which is able to reduce cytochrome b₅. In a eukaryotic cell, all these membrane proteins are found in the endoplasmic reticulum membrane, where they can naturally interact.

This work evaluates the activity of human recombinant cytochrome P450 1A1 against the carcinogenic azo dye Sudan I, specifically it focuses on mapping the formation of major metabolites in relation to the ratio of cytochrome b₅ to NADPH:cytochrome P450 oxidoreductase as well as to NADH:cytochrome b₅ oxidoreductase.

Keywords: cytochrome P450 1A1, NADPH:cytochrome P450 oxidoreductase, cytochrome b₅, NADH:cytochrome b₅ oxidoreductase, Sudan I, HPLC

[In Czech]