TCytochrome P450-dependent monooxygenase system and anesthetics.

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摘要

Abstract

The cytochrome P450-dependent monooxygenases constitute the primary enzyme system responsible for the oxidative metabolism of a variety of xenobiotics and endogenous compounds including drugs, carcinogens, fatty acids and hormones. The monooxygenase system consists of multiple forms of P450 enzymes, NADPH-cytochrome reductase and phospholipids. The level sof P450s and associated monooxygenase activities are subject to be regulated by many environmental, physiological, and pathological factors. Inhalation and intravenous anesthetics are all metabolized through these biotransformation enzymes. The pharmacokinetic properties as well as the toxicity of the anesthetics are closely related to the inducing or inhibitory status of the monooxygenase isozymes. To understand the role of cytochrome P450-monooxygenases in drug metabolism is essential for us to handle the drug-to-drug interactions and adverse effects.