

Role of cytochrome P450 enzymes in the metabolism of antineoplastic drugs

Papel de las enzimas citocromo p450 en el metabolismo de fármacos antineoplásicos: Situación actual y perspectivas terapéuticas

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Cytochrome P450 enzymes are very important to metabolize anti-carcinogenic agents. Therefore, understanding the role of these enzymes and their allele variants in the bioactivation or detoxification of drugs could greatly benefit antineoplastic pharmacotherapy. The aim of this manuscript is to give information about metabolizing enzymes for antineoplastic agents and to relate the current situation in antitumoral pharmacotherapy with recent knowledge about cytochrome P450 enzymes. This is crucial for the future perspectives towards personalized pharmacotherapy. We summarize the role of cytochrome P450 enzymes in the resistance and bioactivation of several antitumor agents, their induction and repression mechanisms and the effect of genetic polymorphisms on variability of drug metabolism. The understanding of genetic variability will help to develop new research lines on innovative therapeutic possibilities. © 2009 Sociedad Médica de Santiago.