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The effects of black pepper on the intestinal absorption and hepatic metabolism of drugs.

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Abstract

INTRODUCTION: There is currently a need for a better understanding of the mechanisms of food-drug interaction as well as the clinical implication to maximize the effectiveness and applicability of black pepper or its active component, piperine, as a bioavailability enhancer in the clinical arena.

AREAS COVERED: This review deals with the effects of black pepper and piperine on drug metabolizing enzymes as well as on intestinal drug absorption. The review provides the reader with a comprehensive update on the potential mechanisms and pharmacokinetic interactions of black pepper and piperine with co-administered medicines. The article also provides a comprehensive update on the current known issues with black pepper and piperine. The information provided is used to assess the clinical significance of black pepper and piperine and optimize their effectiveness as a bioavailability enhancer.

EXPERT OPINION: For black pepper or piperine to be widely applicable in current medical practice, as a combination therapy, the clinical significance of food-drug interactions caused by concurrent use of black pepper or piperine should be carefully assessed with consideration for many compounding factors affecting the clinical outcome of pharmacokinetic interactions (e.g., dose, dosing regimen, genetic variation and species). Furthermore, the effective formulation strategy for the optimization of the pharmacokinetic characteristics of dietary components is crucial to improve their in vivo performance and ultimately maximize their effectiveness as a bioavailability enhancer.

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