

Example	ADME level	Mechanism
(Tetracyclines or quinolones) + multivalent cations (calcium, magnesium, or aluminum)	Absorption	Reduces absorption by the formation of complexes that cannot be absorbed
Itraconazole + antacids	Absorption	Increased pH minimizes the absorption of acidic drugs
Cyclosporine + St. John's wort	Absorption	St. John's wort increases the activity of P-glycoprotein* in the intestinal cells and decreases cyclosporine levels
Phenytoin + valproic acid	Distribution	Both drugs compete for binding sites on albumin
Rifampin + oral contraceptive pills	Metabolism	Rifampin induces Cyt P450, causing decreased estrogen levels
Warfarin + grapefruit juice	Metabolism	Grapefruit juice inhibits Cyt P450, causing increased warfarin levels, which may cause bleeding
Penicillin + probenecid	Elimination	Increased penicillin levels as probenecid competes with penicillin for transporters in the kidney