

**Potentially important pharmacogenetic variants (ranks from <http://www.drugs.com/top200.html>)**

Version 9-4-2009

Rank in "Top 200 Drugs"	Drug	Gene	Effect of Variant	Reference	Clinical Use? Proof? FDA?
Highest priority variants:					
136 (abacavir/lamivudine) 154 (abacavir/lamivudine/zidovudine)	abacavir	<i>HLA-B*5701</i>	life-threatening toxicity	Mallal S, Phillips E, Carosi G, et al. HLA-B*5701 screening for hypersensitivity to abacavir. <i>New Eng. J. Med.</i> 358: 568-579, 2008.	Yes, proven; FDA-recommended; Shin J et al. <i>Pharmacogenetics: from discovery to patient care. Am J Health Syst Pharm.</i> 2009;66:625-37.
180 (warfarin)	warfarin	<i>CYP2C9, VKORC1</i>	reduced or increased maintenance dose	Cooper GM, Johnson JA, Langae TY, et al. A genome-wide scan for common genetic variants with a large influence on warfarin maintenance dose. <i>Blood</i> 112: 1022-1027, 2008.	Yes, unproven; FDA-recommended; Shin J et al. <i>Pharmacogenetics: from discovery to patient care. Am J Health Syst Pharm.</i> 2009;66:625-37.
--	irinotecan	<i>UGT1A1</i>	dose-limiting toxicity	Huang RS, Ratain MJ. Pharmacogenetics and pharmacogenomics of anticancer agents. <i>CA Cancer J Clin.</i> 2009 Jan-Feb;59(1):42-55.	Limited; FDA-recommended; Shin J et al. <i>Pharmacogenetics: from discovery to patient care. Am J Health Syst Pharm.</i> 2009;66:625-37.
--	6-mercaptopurine, azathioprine, thioguanine	<i>TPMT</i>	life-threatening toxicity	Huang RS, Ratain MJ. Pharmacogenetics and pharmacogenomics of anticancer agents. <i>CA Cancer J Clin.</i> 2009 Jan-Feb;59(1):42-55.	Yes, proven; FDA-recommended; Shin J et al. <i>Pharmacogenetics: from discovery to patient care. Am J Health Syst Pharm.</i> 2009;66:625-37.
--	carbamazepine	<i>HLA-B*1502</i> <i>HLA-A*3101</i>	life-threatening toxicity (SJS)	Hung SI, Chung WH, Jee SH, et al. Genetic susceptibility to carbamazepine-induced cutaneous adverse drug reactions. <i>Pharmacogenet. Genomics</i> 16: 297-306, 2006.	FDA-recommended; Shin J et al. <i>Pharmacogenetics: from discovery to patient care. Am J Health Syst Pharm.</i> 2009;66:625-37.
Lower priority variants also for consideration:					
33 (oxycodone)	codeine, tramadol	<i>CYP2D6</i>	reduced efficacy	Stamer UM, Stüber F. The pharmacogenetics of analgesia. <i>Expert Opin Pharmacother.</i> 2007 Oct;8(14):2235-45.	AmpliChip CYP450