Examples of polymorphisms

Gene	Polymorphism (allele) that alters efficacy of a drug	Activity	Examples of the drugs	Ref.
CYP2C9	CYP2C9*2, *3, *5, and *6 (*5 and *6 are important variants in black population)	Slow metabolizer	Warfarin, phenytoin, amitryptyline, fluoxetine	2
CYP2C19	CP2C19*2 and *3	Slow metabolizer	Diazepam, omeprazole, antidepressants, propranolol, S-mephenytoin, R-warfarin	3
CYP2D6	CYP2D6*3, *4, *5 and *6 CYP2D6*1XN (multiple genes) CYP2D6*2XN (multiple genes)	Slow metabolizer Fast metabolizer Fast metabolizer	A variety of psychoactive and cardiovascular drugs, oxycodone	4
DPYD	DPYD*2A, *5, *6 and *9A	Slow metabolizer	5-fluorouracil (anticancer drug)	5
NAT2	NAT2*4 NAT2*5, *6 and *7	Wild type (rapid metabolizer) Slow metabolizer	Isoniazid, sulfonamides, hydrazine	6, 7, 8
UGT1A1	UGT1A1*28 (mutation in promoter region)	Slow metabolizer	Irinotecan	9
TPMT	TPMT*2, *3A, and *3C	Slow metabolizer	6-mercaptopurine and its prodrug azathioprine	10
Acetylcholinesterase	Mutation in promoter region	Slow metabolizer	Pyridostigmine sensitivity in Alzheimer's disease	11

* (star) designation is used in pharmacogenetics/ pharmacogenomics to indicate a SNP or allele for a gene. The Arabic numeral following the ***** designation indicates a specific SNP. For instance, CYP2D6*3 reads as "sip 2D6 star 3." An individual who carries CYP2D6*3 gene is a slow metabolizer of a variety of psychoactive and cardiovascular drugs.