

# MAPP<sup>®</sup> Report Bibliography

1. Abilify<sup>®</sup> [package insert]. Tokyo, Japan: Otsuka Pharmaceutical Co, Ltd; 2017.
2. Amitriptyline [package insert]. Princeton, NJ: Sandoz Inc; 2016.
3. Anafranil<sup>™</sup> [package insert]. Hazelwood, MO: Mallinckrodt Inc; 2017.
4. Ativan<sup>®</sup> [package insert]. Bridgewater, NJ: Valeant Pharmaceuticals North America LLC; 2016.
5. Celebrex<sup>®</sup> [package insert]. New York, NY: G. D. Searle LLC; 2018.
6. Celexa<sup>®</sup> [package insert]. Madison, NJ: Allergan USA, Inc; 2019.
7. Codeine [package insert]. Eatontown, NJ: West-Ward Pharmaceuticals Corporation; 2018.
8. Coumadin<sup>®</sup> [package insert]. Princeton, NJ: Bristol-Myers Squibb Company; 2017.
9. Norpramine<sup>®</sup> [package insert]. Parsippany, NJ: Validus Pharmaceuticals LLC; 2018.
10. Dolophine<sup>®</sup> [package insert]. Eatontown, NJ: West-Ward Pharmaceuticals Corporation; 2018.
11. Effxor<sup>®</sup> [package insert]. Philadelphia, PA: Pfizer Wyeth Pharmaceuticals, Inc; 2017.
12. FDA Drug Safety Communication: Reduced effectiveness of Plavix (clopidogrel) in patients who are poor metabolizers of the drug. 2010. Accessed 11/5/2013.
13. FDA Drug Safety Communication: Revised recommendations for Celexa (citalopram hydrobromide) related to a potential risk of abnormal heart rhythms with high doses. 2012. Accessed 4/08/2014.
14. FDA Drug Safety Communication: Safety review update of codeine use in children; new Boxed Warning and Contraindication on use after tonsillectomy and/or adenoidectomy. 2013. Accessed 2/18/2014.
15. Haldol<sup>®</sup> [package insert]. Titusville, NJ: Janssen Pharmaceutica; 2017.
16. Lexapro<sup>®</sup> [package insert]. Madison, NJ: Allergan USA, Inc; 2019.
17. Meprobamate [package insert]. Haifa Bay, Israel: Taro Pharmaceutical Industries, Ltd; 2011.
18. Oxycotin<sup>®</sup> [package insert]. Stamford, CT: Purdue Pharma L.P.; 2018.
19. Pamelor<sup>™</sup> [package insert]. Hazelwood, MO: Mallinckrodt Inc; 2014.
20. Paxil<sup>®</sup> [package insert]. Research Triangle Park, NC: GlaxoSmithKline; 2017.
21. Plavix<sup>®</sup> [package insert]. Bridgewater, NJ: Bristol-Myers Squibb/Sanofi Pharmaceuticals Partnership; 2018.
22. Risperdal<sup>®</sup> [package insert]. Gurabo, Puerto Rico: Janssen Ortho, LLC; 2019.
23. Oxazepam [package insert]. Princeton, NJ: Sandoz Inc; 2016.
24. Silenor<sup>®</sup> [package insert]. San Diego, CA: Somaxon Pharmaceuticals, Inc; 2010.
25. Soma<sup>®</sup> [package insert]. Somerset, NJ: Meda Pharmaceuticals Inc; 2018.
26. Strattera<sup>®</sup> [package insert]. Indianapolis, IN: Eli Lilly and Company; 2017.
27. Subsys<sup>®</sup> [package insert]. Chandler, AZ: Insys Therapeutics, Inc; 2016.
28. Tofranil<sup>™</sup> [package insert]. Hazelwood, MO: Mallinckrodt Inc; 2017.
29. Ultracet<sup>®</sup> [package insert]. Gurabo, Puerto Rico: Janssen Ortho, LLC; 2018.
30. Valium<sup>®</sup> [package insert]. San Francisco, CA: Genentech USA, Inc; 2016.
31. Vicodin<sup>®</sup> [package insert]. North Chicago, IL: AbbVie Inc; 2006.
32. Zohydro<sup>™</sup> ER [package insert]. Morristown, NJ: Pernix Therapeutics, LLC; 2018.
33. Zolof<sup>®</sup> [package insert]. New York, NY: Roerig Division of Pfizer Inc; 2017.
34. Abernethy DR, Greenblatt DJ, Ameer B, Shader RI. Probenecid impairment of acetaminophen and lorazepam clearance: direct inhibition of ether glucuronide formation. *J Pharmacol Exp Ther.* Aug 1985;234(2):345-349.
35. Ahlers SJ, Elens LL, van Gulik L, et al. The Val158Met polymorphism of the COMT gene is associated with increased pain sensitivity in morphine-treated patients undergoing a painful procedure after cardiac surgery. *Br J Clin Pharmacol.* Jun 2013;75(6):1506-1515.
36. Anton RF, Oroszi G, O'Malley S, et al. An evaluation of mu-opioid receptor (OPRM1) as a predictor of naltrexone response in the treatment of alcohol dependence: results from the Combined Pharmacotherapies and Behavioral Interventions for Alcohol Dependence (COMBINE) study. *Arch Gen Psychiatry.* Feb 2008;65(2):135-144.
37. Barratt DT, Bandak B, Klepstad P, et al. Genetic, pathological and physiological determinants of transdermal fentanyl pharmacokinetics in 620 cancer patients of the EPOS study. *Pharmacogenet Genomics.* Apr 2014;24(4):185-194.
38. Berthele A, Platzer S, Jochim B, et al. COMT Val108/158Met genotype affects the mu-opioid receptor system in the human brain: evidence from ligand-binding, G-protein activation and preproenkephalin mRNA expression. *Neuroimage.* Oct 15 2005;28(1):185-193.
39. Bertilsson L, Aberg-Wistedt A, Gustafsson LL, Nordin C. Extremely rapid hydroxylation of debrisoquine: a case report with implication for treatment with nortriptyline and other tricyclic antidepressants. *Ther Drug Monit.* 1985;7(4):478-480.
40. Boswell MV, Stauble ME, Loyd GE, et al. The role of hydromorphone and OPRM1 in postoperative pain relief with hydrocodone. *Pain physician.* May-Jun 2013;16(3):E227-235.
41. Bramness JG, Morland J, Sorlid HK, Rudberg N, Jacobsen D. Carisoprodol intoxications and serotonergic features. *Clinical toxicology.* 2005;43(1):39-45.
42. Bramness JG, Skurtveit S, Fauske L, et al. Association between blood carisoprodol:meprobamate concentration ratios and CYP2C19 genotype in carisoprodol-drugged drivers: decreased metabolic capacity in heterozygous CYP2C19\*1/CYP2C19\*2 subjects? *Pharmacogenetics.* Jul 2003;13(7):383-388.
43. Bramness JG, Skurtveit S, Gulliksen M, Breilid H, Steen VM, Morland J. The CYP2C19 genotype and the use of oral contraceptives influence the pharmacokinetics of carisoprodol in healthy human subjects. *European journal of clinical pharmacology.* Aug 2005;61(7):499-506.
44. Bramness JG, Skurtveit S, Morland J. Impairment due to intake of carisoprodol. *Drug and alcohol dependence.* Jun 11 2004;74(3): 311-318.

45. Buire AC, Vitry F, Hoizey G, Lamiable D, Trenque T. Overdose of meprobamate: plasma concentration and Glasgow Coma Scale. *British journal of clinical pharmacology*. Jul 2009;68(1):126-127.
46. Carbonell N, Verstuyft C, Massard J, et al. CYP2C9\*3 Loss-of-Function Allele Is Associated With Acute Upper Gastrointestinal Bleeding Related to the Use of NSAIDs Other Than Aspirin. *Clin Pharmacol Ther*. Jun 2010;87(6):693-698.
47. Cartwright AL, Wilby KJ, Corrigan S, Ensom MH. Pharmacogenetics of risperidone: a systematic review of the clinical effects of CYP2D6 polymorphisms. *Ann Pharmacother*. Mar 2013;47(3):350-360.
48. Chan AT, Zauber AG, Hsu M, et al. Cytochrome P450 2C9 variants influence response to celecoxib for prevention of colorectal adenoma. *Gastroenterology*. Jun 2009;136(7):2127-2136 e2121
49. Charlier C, Broly F, Lhermitte M, Pinto E, Anseau M, Plomteux G. Polymorphisms in the CYP 2D6 gene: association with plasma concentrations of fluoxetine and paroxetine. *Ther Drug Monit*. Dec 2003;25(6):738-742.
50. Choong E, Polari A, Kamdem RH, et al. Pharmacogenetic study on risperidone long-acting injection: influence of cytochrome P450 2D6 and pregnane X receptor on risperidone exposure and drug-induced side-effects. *Journal of clinical psychopharmacology*. Jun 2013;33(3):289-298.
51. Chung JY, Cho JY, Yu KS, et al. Effect of the UGT2B15 genotype on the pharmacokinetics, pharmacodynamics, and drug interactions of intravenous lorazepam in healthy volunteers. *Clin Pharmacol Ther*. Jun 2005;77(6):486-494.
52. Court MH, Hao Q, Krishnaswamy S, et al. UDP-glucuronosyltransferase (UGT) 2B15 pharmacogenetics: UGT2B15 D85Y genotype and gender are major determinants of oxazepam glucuronidation by human liver. *J Pharmacol Exp Ther*. Aug 2004;310(2):656-665.
53. Crettol S, Deglon JJ, Besson J, et al. Methadone enantiomer plasma levels, CYP2B6, CYP2C19, and CYP2C9 genotypes, and response to treatment. *Clin Pharmacol Ther*. Dec 2005;78(6):593-604.
54. Crews KR, Gaedigk A, Dunnenberger HM, et al. Clinical Pharmacogenetics Implementation Consortium (CPIC) guidelines for codeine therapy in the context of cytochrome P450 2D6 (CYP2D6) genotype. *Clin Pharmacol Ther*. Feb 2012;91(2):321-326.
55. Crews KR, Gaedigk A, Dunnenberger HM, et al. Clinical Pharmacogenetics Implementation Consortium Guidelines for Cytochrome P450 2D6 Genotype and Codeine Therapy: 2014 Update. *Clin Pharmacol Ther*. Apr 2014;95(4):376-382.
56. Dalen P, Alvan G, Wakelkamp M, Olsen H. Formation of meprobamate from carisoprodol is catalysed by CYP2C19. *Pharmacogenetics*. Oct 1996;6(5):387-394.
57. de Leon J, Dinsmore L, Wedlund P. Adverse drug reactions to oxycodone and hydrocodone in CYP2D6 ultrarapid metabolizers. *Journal of clinical psychopharmacology*. Aug 2003;23(4):420-421.
58. de Leon J, Susce MT, Pan RM, Fairchild M, Koch WH, Wedlund PJ. The CYP2D6 poor metabolizer phenotype may be associated with risperidone adverse drug reactions and discontinuation. *J Clin Psychiatry*. Jan 2005;66(1):15-27.
59. Eap CB, Crettol S, Rougier JS, et al. Stereoselective block of hERG channel by (S)-methadone and QT interval prolongation in CYP2B6 slow metabolizers. *Clin Pharmacol Ther*. May 2007;81(5):719-728.
60. Eckhardt K, Li S, Ammon S, Schanzle G, Mikus G, Eichelbaum M. Same incidence of adverse drug events after codeine administration irrespective of the genetically determined differences in morphine formation. *Pain*. May 1998;76(1-2):27-33.
61. Elens L, van Gelder T, Hesselink DA, Haufroid V, van Schaik RH. CYP3A4\*22: promising newly identified CYP3A4 variant allele for personalizing pharmacotherapy. *Pharmacogenomics*. Jan 2013;14(1):47-62.
62. Feng Y, Pollock BG, Ferrell RE, Kimak MA, Reynolds CF, 3rd, Bies RR. Paroxetine: population pharmacokinetic analysis in late-life depression using sparse concentration sampling. *British journal of clinical pharmacology*. May 2006;61(5):558-569.
63. Fleeman N, Dundar Y, Dickson R, et al. Cytochrome P450 testing for prescribing antipsychotics in adults with schizophrenia: systematic review and meta-analyses. *The pharmacogenomics journal*. Feb 2011;11(1):1-14.
64. Gadel S, Crafford A, Regina K, Kharasch ED. Methadone N-demethylation by the common CYP2B6 allelic variant CYP2B6.6. *Drug Metab Dispos*. Apr 2013;41(4):709-713.
65. Gex-Fabry M, Eap CB, Oneda B, et al. CYP2D6 and ABCB1 genetic variability: influence on paroxetine plasma level and therapeutic response. *Ther Drug Monit*. Aug 2008;30(4):474-482.
66. Gilbody S, Lewis S, Lightfoot T. Methylenetetrahydrofolate reductase (MTHFR) genetic polymorphisms and psychiatric disorders: a HuGE review. *Am J Epidemiol*. Jan 1 2007;165(1):1-13.
67. Gilbody S, Lightfoot T, Sheldon T. Is low folate a risk factor for depression? A meta-analysis and exploration of heterogeneity. *J Epidemiol Community Health*. Jul 2007;61(7):631-637.
68. Ginsberg LD, Oubre AY, Daoud YA. L-methylfolate Plus SSRI or SNRI from Treatment Initiation Compared to SSRI or SNRI Monotherapy in a Major Depressive Episode. *Innov Clin Neurosci*. Jan 2011;8(1):19-28.
69. Grasmader K, Verwohlt PL, Rietschel M, et al. Impact of polymorphisms of cytochrome-P450 isoenzymes 2C9, 2C19 and 2D6 on plasma concentrations and clinical effects of antidepressants in a naturalistic clinical setting. *European journal of clinical pharmacology*. Jul 2004;60(5):329-336.
70. Guzey C, Aamo T, Spigset O. Risperidone metabolism and the impact of being a cytochrome P450 2D6 ultrarapid metabolizer. *J Clin Psychiatry*. Aug 2000;61(8):600-601.
71. Guzey C, Spigset O. Low serum concentrations of paroxetine in CYP2D6 ultrarapid metabolizers. *Journal of clinical psychopharmacology*. Apr 2006;26(2):211-212.
72. He X, Hesse LM, Hazarika S, et al. Evidence for oxazepam as an in vivo probe of UGT2B15: oxazepam clearance is reduced by UGT2B15 D85Y polymorphism but unaffected by UGT2B17 deletion. *Br J Clin Pharmacol*. Nov 2009;68(5):721- 730.
73. Henker RA, Lewis A, Dai F, et al. The associations between OPRM 1 and COMT genotypes and postoperative pain, opioid use, and opioid-induced sedation. *Biol Res Nurs*. Jul 2013;15(3):309-317.
74. Herrlin K, Yasui-Furukori N, Tybring G, Widen J, Gustafsson LL, Bertilsson L. Metabolism of citalopram enantiomers in CYP2C19/CYP2D6 phenotyped panels of healthy Swedes. *British journal of clinical pharmacology*. Oct 2003;56(4):415-421.

75. Hicks JK, Sangkuhl K, Swen JJ, et al. Clinical pharmacogenetics implementation consortium guideline (CPIC) for CYP2D6 and CYP2C19 genotypes and dosing of tricyclic antidepressants: 2016 update. *Clinical pharmacology and therapeutics*. 2017;102(1):37-44.
76. Hodgson K, Tansey K, Dernovsek MZ, et al. Genetic differences in cytochrome P450 enzymes and antidepressant treatment response. *Journal of psychopharmacology*. Feb 2014;28(2):133-141.
77. Hoiseith G, Majid U, Morland J, Bramness JG, Molden E. CYP2C19 genetics in fatal carisoprodol intoxications. *European journal of clinical pharmacology*. Nov 2012;68(11):1561-1565.
78. Huezo-Diaz P, Perroud N, Spencer EP, et al. CYP2C19 genotype predicts steady state escitalopram concentration in GENDEP. *Journal of psychopharmacology*. Mar 2012;26(3):398-407.
79. Hung CC, Chiou MH, Huang BH, et al. Impact of genetic polymorphisms in ABCB1, CYP2B6, OPRM1, ANKK1 and DRD2 genes on methadone therapy in Han Chinese patients. *Pharmacogenomics*. Nov 2011;12(11):1525-1533
80. Inomata S, Nagashima A, Itagaki F, et al. CYP2C19 genotype affects diazepam pharmacokinetics and emergence from general anesthesia. *Clin Pharmacol Ther*. Dec 2005;78(6):647-655.
81. Jensen KB, Lonsdorf TB, Schalling M, Kosek E, Ingvar M. Increased sensitivity to thermal pain following a single opiate dose is influenced by the COMT val(158)met polymorphism. *PLoS One*. 2009;4(6):e6016.
82. Kandasamy M, Srinivas P, Subramaniam K, et al. Differential outcomes from metabolic ratios in the identification of CYP2D6 phenotypes--focus on venlafaxine and O-desmethylvenlafaxine. *European journal of clinical pharmacology*. Sep 2010;66(9):879-887
83. Kaplan HL, Busto UE, Baylon GJ, et al. Inhibition of cytochrome P450 2D6 metabolism of hydrocodone to hydromorphone does not importantly affect abuse liability. *J Pharmacol Exp Ther*. Apr 1997;281(1):103-108.
84. Kim E, Yu KS, Cho JY, et al. Effects of DRD2 and CYP2D6 genotypes on delta EEG power response to aripiprazole in healthy male volunteers: a preliminary study. *Hum Psychopharmacol*. Dec 2006;21(8):519-528.
85. Kim JR, Seo HB, Cho JY, et al. Population pharmacokinetic modelling of aripiprazole and its active metabolite, dehydroaripiprazole, in psychiatric patients. *British journal of clinical pharmacology*. Dec 2008;66(6):802-810.
86. Kirchheiner J, Keulen JT, Bauer S, Roots I, Brockmoller J. Effects of the CYP2D6 gene duplication on the pharmacokinetics and pharmacodynamics of tramadol. *Journal of clinical psychopharmacology*. Feb 2008;28(1):78-83.
87. Kirchheiner J, Stormer E, Meisel C, Steinbach N, Roots I, Brockmoller J. Influence of CYP2C9 genetic polymorphisms on pharmacokinetics of celecoxib and its metabolites. *Pharmacogenetics*. Aug 2003;13(8):473-480.
88. Kitzmiller JP, Sullivan DM, Phelps MA, Wang D, Sadee W. CYP3A4/5 combined genotype analysis for predicting statin dose requirement for optimal lipid control. *Drug Metabol Drug Interact*. 2013;28(1):59-63.
89. Klepstad P, Fladvad T, Skorpen F, et al. Influence from genetic variability on opioid use for cancer pain: a European genetic association study of 2294 cancer pain patients. *Pain*. May 2011;152(5):1139-1145.
90. Koren G, Cairns J, Chitayat D, Gaedigk A, Leeder SJ. Pharmacogenetics of morphine poisoning in a breastfed neonate of a codeine-prescribed mother. *Lancet*. Aug 19 2006;368(9536):70
91. Kowarik MC, Einhauser J, Jochim B, et al. Impact of the COMT Val(108/158) Met polymorphism on the mu-opioid receptor system in the human brain: mu-opioid receptor, met-enkephalin and beta-endorphin expression. *Neurosci Lett*. Jan 11 2012;506(2):214-219.
92. Kratochvil CJ, Newcorn JH, Arnold LE, et al. Atomoxetine alone or combined with fluoxetine for treating ADHD with comorbid depressive or anxiety symptoms. *Journal of the American Academy of Child and Adolescent Psychiatry*. Sep 2005;44(9):915-924.
93. Kubo M, Koue T, Maune H, Fukuda T, Azuma J. Pharmacokinetics of aripiprazole, a new antipsychotic, following oral dosing in healthy adult Japanese volunteers: influence of CYP2D6 polymorphism. *Drug Metab Pharmacokin*. Oct 2007;22(5):358-366.
94. Lam YW, Gaedigk A, Ereshefsky L, Alfaro CL, Simpson J. CYP2D6 inhibition by selective serotonin reuptake inhibitors: analysis of achievable steady-state plasma concentrations and the effect of ultrarapid metabolism at CYP2D6. *Pharmacotherapy*. Aug 2002;22(8):1001-1006.
95. Landau R, Liu SK, Blouin JL, Carvalho B. The effect of OPRM1 and COMT genotypes on the analgesic response to intravenous fentanyl labor analgesia. *Anesth Analg*. Feb 2013;116(2):386-391.
96. Lee SA, Lee JK, Heo K. Coma probably induced by lorazepam-valproate interaction. *Seizure : the journal of the British Epilepsy Association*. Mar 2002;11(2):124-125.
97. Lessard E, Yessine MA, Hamelin BA, O'Hara G, LeBlanc J, Turgeon J. Influence of CYP2D6 activity on the disposition and cardiovascular toxicity of the antidepressant agent venlafaxine in humans. *Pharmacogenetics*. Aug 1999;9(4):435-443.
98. Levran O, Peles E, Hamon S, Randesi M, Adelson M, Kreek MJ. CYP2B6 SNPs are associated with methadone dose required for effective treatment of opioid addiction. *Addict Biol*. Jul 2013;18(4):709-716.
99. Lin C, Somberg T, Molnar J, Somberg J. The effects of chiral isolates of methadone on the cardiac potassium channel IKr. *Cardiology*. 2009;113(1):59-65.
100. Llerena A, Berecz R, Penas-Lledo E, Suveges A, Farinas H. Pharmacogenetics of clinical response to risperidone. *Pharmacogenomics*. Jan 2013;14(2):177-194.
101. Lundblad MS, Ohlsson S, Johansson P, Lafolie P, Eliasson E. Accumulation of celecoxib with a 7-fold higher drug exposure in individuals homozygous for CYP2C9\*3. *Clin Pharmacol Ther*. Mar 2006;79(3):287-288.
102. Madadi P, Hildebrandt D, Gong IY, et al. Fatal hydrocodone overdose in a child: pharmacogenetics and drug interactions. *Pediatrics*. Oct 2010;126(4):e986-989.
103. Madadi P, Ross CJ, Hayden MR, et al. Pharmacogenetics of neonatal opioid toxicity following maternal use of codeine during breastfeeding: a case-control study. *Clin Pharmacol Ther*. Jan 2009;85(1):31-35.
104. Malhi H, Atac B, Daly AK, Gupta S. Warfarin and celecoxib interaction in the setting of cytochrome P450 (CYP2C9) polymorphism with bleeding complication. *Postgrad Med J*. Feb 2004;80(940):107-109.

105. Marsala SZ, Gioulis M, Ceravolo R, Tinazzi M. A systematic review of catechol-O-methyltransferase inhibitors: efficacy and safety in clinical practice. *Clin Neuropharmacol.* Jul-Aug 2012;35(4):185-190.
106. Martinez C, Blanco G, Ladero JM, et al. Genetic predisposition to acute gastrointestinal bleeding after NSAIDs use. *Br J Pharmacol.* Jan 2004;141(2):205-208.
107. McAlpine DE, O’Kane DJ, Black JL, Mrazek DA. Cytochrome P450 2D6 genotype variation and venlafaxine dosage. Mayo Clinic proceedings. *Mayo Clinic.* Sep 2007;82(9):1065-1068.
108. Michelson D, Read HA, Ruff DD, Witcher J, Zhang S, McCracken J. CYP2D6 and clinical response to atomoxetine in children and adolescents with ADHD. *Journal of the American Academy of Child and Adolescent Psychiatry.* Feb 2007;46(2):242-251.
109. Mrazek DA, Biernacka JM, O’Kane DJ, et al. CYP2C19 variation and citalopram response. *Pharmacogenetics and genomics.* Jan 2011;21(1):1-9.
110. Mura E, Govoni S, Racchi M, et al. Consequences of the 118A>G polymorphism in the OPRM1 gene: translation from bench to bedside? *J Pain Res.* 2013;6:331-353.
111. Nazki FH, Sameer AS, Ganaie BA. Folate: metabolism, genes, polymorphisms and the associated diseases. *Gene.* Jan 1 2014;533(1):11- 20.
112. Oosterhuis M, Van De Kraats G, Tenback D. Safety of aripiprazole: high serum levels in a CYP2D6 mutated patient. *The American journal of psychiatry.* Jan 2007;164(1):175.
113. Oroszi G, Anton RF, O’Malley S, et al. OPRM1 Asn40Asp predicts response to naltrexone treatment: a haplotype-based approach. *Alcohol Clin Exp Res.* Mar 2009;33(3):383-393
114. Oslin DW, Berrettini W, Kranzler HR, et al. A functional polymorphism of the mu-opioid receptor gene is associated with naltrexone response in alcohol-dependent patients. *Neuropsychopharmacology.* Aug 2003;28(8): 1546-1552.
115. Otton SV, Schadel M, Cheung SW, Kaplan HL, Busto UE, Sellers EM. CYP2D6 phenotype determines the metabolic conversion of hydrocodone to hydromorphone. *Clin Pharmacol Ther.* Nov 1993;54(5):463-472.
116. Panagiotidis G, Arthur HW, Lindh JD, Dahl ML, Sjoqvist F. Depot haloperidol treatment in outpatients with schizophrenia on monotherapy: impact of CYP2D6 polymorphism on pharmacokinetics and treatment outcome. *Ther Drug Monit.* Aug 2007;29(4):417-422.
117. Papakostas GI, Shelton RC, Zajecka JM, et al. L-methylfolate as adjunctive therapy for SSRlresistant major depression: results of two randomized, double-blind, parallel-sequential trials. *Am J Psychiatry.* Dec 1 2012;169(12): 1267-1274.
118. Patsopoulos NA, Ntzani EE, Zintzaras E, Ioannidis JP. CYP2D6 polymorphisms and the risk of tardive dyskinesia in schizophrenia: a metaanalysis. *Pharmacogenetics and genomics.* Mar 2005;15(3):151-158.
119. Pilotto A, Seripa D, Franceschi M, et al. Genetic susceptibility to nonsteroidal anti-inflammatory drug-related gastroduodenal bleeding: role of cytochrome P450 2C9 polymorphisms. *Gastroenterology.* Aug 2007;133(2):465-471.
120. Pirmohamed M, Burnside G, Eriksson N, et al. A randomized trial of genotype-guided dosing of warfarin. *N Engl J Med.* Dec 12 2013;369(24):2294-2303.
121. Poulsen L, Brosen K, Arendt-Nielsen L, Gram LF, Elbaek K, Sindrup SH. Codeine and morphine in extensive and poor metabolizers of sparteine: pharmacokinetics, analgesic effect and side effects. *European journal of clinical pharmacology.* 1996;51(3-4):289-295.
122. Prieto-Perez R, Ochoa D, Cabaleiro T, et al. Evaluation of the relationship between polymorphisms in CYP2C8 and CYP2C9 and the pharmacokinetics of celecoxib. *J Clin Pharmacol.* Dec 2013;53(12):1261-1267.
123. Qin XP, Xie HG, Wang W, et al. Effect of the gene dosage of CgammaP2C19 on diazepam metabolism in Chinese subjects. *Clin Pharmacol Ther.* Dec 1999;66(6):642-646.
124. Rakvag TT, Klepstad P, Baar C, et al. The Val158Met polymorphism of the human catechol-Omethyltransferase (COMT) gene may influence morphine requirements in cancer pain patients. *Pain.* Jul 2005;116(1-2):73-78.
125. Rakvag TT, Ross JR, Sato H, Skorpen F, Kaasa S, Klepstad P. Genetic variation in the catechol-Omethyltransferase (COMT) gene and morphine requirements in cancer patients with pain. *Molecular pain.* 2008;4:64.
126. Ravyn D, Ravyn V, Lowney R, Nasrallah HA. CYP450 pharmacogenetic treatment strategies for antipsychotics: a review of the evidence. *Schizophr Res.* Sep 2013;149(1-3):1-14.
127. Ray LA, Miranda R, Jr., Tidey JW, et al. Polymorphisms of the mu-opioid receptor and dopamine D4 receptor genes and subjective responses to alcohol in the natural environment. *J Abnorm Psychol.* Feb 2010;119(1):115-125.
128. Reidy GF, Mehta I, Murray M. Inhibition of oxidative drug metabolism by orphenadrine: in vitro and in vivo evidence for isozyme-specific complexation of cytochrome P-450 and inhibition kinetics. *Molecular pharmacology.* May 1989;35(5):736-743.
129. Rudberg I, Mohebi B, Hermann M, Refsum H, Molden E. Impact of the ultrarapid CYP2C19\*17 allele on serum concentration of escitalopram in psychiatric patients. *Clin Pharmacol Ther.* Feb 2008;83(2):322-327.
130. Sadhasivam S, Chidambaran V. Pharmacogenomics of opioids and perioperative pain management. *Pharmacogenomics.* Nov 2012;13(15):1719-1740.
131. Samer CF, Daali Y, Wagner M, et al. Genetic polymorphisms and drug interactions modulating CYP2D6 and CYP3A activities have a major effect on oxycodone analgesic efficacy and safety. *British journal of pharmacology.* Jun 2010;160(4):919-930.
132. Sangkuhl K, Klein TE, Altman RB. PharmGKB summary: citalopram pharmacokinetics pathway. *Pharmacogenetics and genomics.* Nov 2011;21(11):769-772.
133. Scordo MG, Spina E, Facciola G, Avenoso A, Johansson I, Dahl ML. Cytochrome P450 2D6 genotype and steady state plasma levels of risperidone and 9-hydroxyrisperidone. *Psychopharmacology.* Dec 1999;147(3):300-305.
134. Scott SA, Sangkuhl K, Shuldiner AR, et al. PharmGKB summary: very important pharmacogene information for cytochrome P450, family 2, subfamily C, polypeptide 19. *Pharmacogenet Genomics.* Feb 2012;22(2):159-165.
135. Scott SA, Sangkuhl K, Stein CM, et al. Clinical Pharmacogenetics Implementation Consortium guidelines for CYP2C19 genotype and clopidogrel therapy: 2013 update. *Clin Pharmacol Ther.* Sep 2013;94(3):317-323.



136. Shams ME, Arneth B, Hiemke C, et al. CYP2D6 polymorphism and clinical effect of the antidepressant venlafaxine. *Journal of clinical pharmacy and therapeutics*. Oct 2006;31(5):493-502.
137. Shaw K, Amstutz U, Hildebrand C, et al. VKORC1 and CYP2C9 genotypes are predictors of warfarin-related outcomes in children. *Pediatr Blood Cancer*. Jan 29 2014.
138. Shelton RC, Sloan Manning J, Barentine LW, Tipa EV. Assessing Effects of L-Methylfolate in Depression Management: Results of a Real-World Patient Experience Trial. *Prim Care Companion CNS Disord*. 2013;15(4).
139. Sia AT, Lim Y, Lim EC, et al. A118G single nucleotide polymorphism of human mu-opioid receptor gene influences pain perception and patient-controlled intravenous morphine consumption after intrathecal morphine for postcesarean analgesia. *Anesthesiology*. Sep 2008;109(3):520-526.
140. Sim SC, Nordin L, Andersson TM, et al. Association between CYP2C19 polymorphism and depressive symptoms. *American journal of medical genetics. Part B, Neuropsychiatric genetics : the official publication of the International Society of Psychiatric Genetics*. Sep 2010;153B(6):1160-1166.
141. Sorich MJ, Polasek TM, Wiese MD. Systematic review and meta-analysis of the association between cytochrome P450 2C19 genotype and bleeding. *Thromb Haemost*. Jul 2012;108(1):199-200.
142. Spina E, Gitto C, Avenoso A, Campo GM, Caputi AP, Perucca E. Relationship between plasma desipramine levels, CYP2D6 phenotype and clinical response to desipramine: a prospective study. *European journal of clinical pharmacology*. 1997;51(5):395-398.
143. Stamer UM, Lehnen K, Hothker F, et al. Impact of CYP2D6 genotype on postoperative tramadol analgesia. *Pain*. Sep 2003;105(1-2):231-238.
144. Stamer UM, Musshoff F, Kobilya M, Madea B, Hoeft A, Stuber F. Concentrations of tramadol and O-desmethyltramadol enantiomers in different CYP2D6 genotypes. *Clin Pharmacol Ther*. Jul 2007;82(1):41-47.
145. Stamer UM, Stuber F, Muders T, Musshoff F. Respiratory depression with tramadol in a patient with renal impairment and CYP2D6 gene duplication. *Anesth Analg*. Sep 2008;107(3):926-929.
146. Stamer UM, Zhang L, Book M, Lehmann LE, Stuber F, Musshoff F. CYP2D6 genotype dependent oxycodone metabolism in postoperative patients. *PLoS One*. 2013;8(3):e60239.
147. Stamer UM, Zhang L, Stuber F. Personalized therapy in pain management: where do we stand? *Pharmacogenomics*. Jun 2010;11(6):843-864.
148. Stauble ME, Moore AW, Langman LJ, et al. Hydrocodone in postoperative personalized pain management: pro-drug or drug? *Clin Chim Acta*. Feb 15 2014;429:26-29.
149. Stempak D, Bukaveckas BL, Linder M, Koren G, Baruchel S. Cytochrome P450 2C9 genotype: impact on celecoxib safety and pharmacokinetics in a pediatric patient. *Clin Pharmacol Ther*. Sep 2005;78(3):309-310.
150. Stingl JC, Brockmoller J, Viviani R. Genetic variability of drug-metabolizing enzymes: the dual impact on psychiatric therapy and regulation of brain function. *Molecular psychiatry*. Mar 2013;18(3):273-287.
151. Suzuki T, Mihara K, Nakamura A, et al. Effects of the CYP2D6\*10 allele on the steady-state plasma concentrations of aripiprazole and its active metabolite, dehydroaripiprazole, in Japanese patients with schizophrenia. *Ther Drug Monit*. Feb 2011;33(1):21-24.
152. Suzuki Y, Tsuneyama N, Fukui N, et al. Impact of the ABCB1 gene polymorphism on plasma 9-hydroxyrisperidone and active moiety levels in Japanese patients with schizophrenia. *Journal of clinical psychopharmacology*. Jun 2013;33(3):411-414.
153. Swen JJ, Nijenhuis M, de Boer A, et al. Pharmacogenetics: from bench to byte--an update of guidelines. *Clin Pharmacol Ther*. May 2011;89(5):662-673.
154. Tammimaki A, Mannisto PT. Catechol-O-methyltransferase gene polymorphism and chronic human pain: a systematic review and meta-analysis. *Pharmacogenet Genomics*. Sep 2012;22(9):673-691.
155. Tang C, Shou M, Rushmore TH, et al. In-vitro metabolism of celecoxib, a cyclooxygenase-2 inhibitor, by allelic variant forms of human liver microsomal cytochrome P450 2C9: correlation with CYP2C9 genotype and in-vivo pharmacokinetics. *Pharmacogenetics*. Apr 2001;11(3):223-235.
156. Ter Laak MA, Temmink AH, Koeken A, van 't Veer NE, van Hattum PR, Cobbaert CM. Recognition of impaired atomoxetine metabolism because of low CYP2D6 activity. *Pediatr Neurol*. Sep 2010;43(3):159-162.
157. Veeffkind AH, Haffmans PM, Hoencamp E. Venlafaxine serum levels and CYP2D6 genotype. *Ther Drug Monit*. Apr 2000;22(2):202-208.
158. Ververs FF, Voorbij HA, Zwarts P, et al. Effect of cytochrome P450 2D6 genotype on maternal paroxetine plasma concentrations during pregnancy. *Clinical pharmacokinetics*. 2009;48(10):677-683.
159. Volpicelli JR, Alterman AI, Hayashida M, O'Brien CP. Naltrexone in the treatment of alcohol dependence. *Arch Gen Psychiatry*. Nov 1992;49(11):876-880.
160. Vuilleumier PH, Stamer UM, Landau R. Pharmacogenomic considerations in opioid analgesia. *Pharmacogenomics and personalized medicine*. 2012;5:73-87.
161. Wade RL, Kindermann SL, Hou Q, Thase ME. Comparative assessment of adherence measures and resource use in SSRI/SNRI-treated patients with depression using second-generation antipsychotics or L-methylfolate as adjunctive therapy. *J Manag Care Pharm*. Jan 2014;20(1):76-85.
162. Walter C, Lotsch J. Meta-analysis of the relevance of the OPRM1 118A>G genetic variant for pain treatment. *Pain*. Dec 2009;146(3):270-275.
163. Wang G, Zhang H, He F, Fang X. Effect of the CYP2D6\*10 C188T polymorphism on postoperative tramadol analgesia in a Chinese population. *European journal of clinical pharmacology*. Nov 2006;62(11):927-931.
164. Wang JH, Liu ZQ, Wang W, et al. Pharmacokinetics of sertraline in relation to genetic polymorphism of CYP2C19. *Clin Pharmacol Ther*. Jul 2001;70(1):42-47.
165. Whyte EM, Romkes M, Mulsant BH, et al. CYP2D6 genotype and venlafaxine-XR concentrations in depressed elderly. *International journal of geriatric psychiatry*. Jun 2006;21(6):542-549.
166. Zhang YA, Reviriego J, Lou YQ, Sjoqvist F, Bertilsson L. Diazepam metabolism in native Chinese poor and extensive hydroxylators of S-mephenytoin: interethnic differences in comparison with white subjects. *Clin Pharmacol Ther*. Nov 1990;48(5):496-502.
167. Zhou SF, Liu JP, Chowbay B. Polymorphism of human cytochrome P450 enzymes and its clinical impact. *Drug Metab Rev*. 2009;41(2):89-295.

168. Zourkova A, Ceskova E, Hadasova E, Ravcukova B. Links among paroxetine-induced sexual dysfunctions, gender, and CYP2D6 activity. *Journal of sex & marital therapy*. Jul-Sep 2007;33(4):343-355.
169. Zubieta JK, Heitzeg MM, Smith YR, et al. COMT val158met genotype affects mu-opioid neurotransmitter responses to a pain stressor. *Science*. Feb 21 2003;299(5610):1240-1243.
170. Zwisler ST, Enggaard TP, Noehr-Jensen L, et al. The antinociceptive effect and adverse drug reactions of oxycodone in human experimental pain in relation to genetic variations in the OPRM1 and ABCB1 genes. *Fundam Clin Pharmacol*. Aug 2010;24(4):517-524.
171. Zwisler ST, Enggaard TP, Noehr-Jensen L, et al. The hypoalgesic effect of oxycodone in human experimental pain models in relation to the CYP2D6 oxidation polymorphism. *Basic & clinical pharmacology & toxicology*. Apr 2009;104(4): 335-344.
172. Johnson JA, Caudle KE, Gong L, et al. Clinical Pharmacogenetics Implementation Consortium (CPIC) Guideline for Pharmacogenetics-Guided Warfarin Dosing: 2017 Update. *Clinical pharmacology and therapeutics*. 2017;102(3):397-404.
173. Tegretol® [package insert]. East Hanover, NJ: Novartis Pharmaceuticals Corporation; 2018.
174. Prozac® [package insert]. Indianapolis, IN: Lilly USA, LLC; 2017.
175. Trintellix® [package insert]. Deerfield, IL: Takeda Pharmaceuticals America, Inc; 2018.
176. Clozaril® [package insert]. Rosemont, PA: HLS Therapeutics; 2017.
177. Trileptal® [package insert]. East Hanover, NJ: Novartis Pharmaceuticals Corporation; 2018.
178. Dilantin® [package insert]. New York, NY: Parke-Davis Division of Pfizer Inc; 2018.
179. Cerebyx® [package insert]. New York, NY: Pfizer Labs Division of Pfizer Inc; 2017.
180. Areberg J, Petersen KB, Chen G, Naik H. Population Pharmacokinetic Meta-Analysis of Vortioxetine in Healthy Individuals. *Basic Clin. Pharmacol. Toxicol*. Apr 26 2014.
181. Beach SR, Kostis WJ, Celano CM, et al. Metaanalysis of selective serotonin reuptake inhibitor-associated QTc prolongation. *J. Clin. Psychiatry*. May 2014;75(5):e441-449.
182. Bloch KM, Sills GJ, Pirmohamed M, Alfirevic A. Pharmacogenetics of antiepileptic drug-induced hypersensitivity. *Pharmacogenomics*. Apr 2014;15(6):857-868.
183. Cajanus K, Kaunisto MA, Tallgren M, Jokela R, Kalso E. How much oxycodone is needed for adequate analgesia after breast cancer surgery: Effect of the OPRM1 118A>G polymorphism. *J. Pain*. Sep 16 2014.
184. Candiotti KA, Yang Z, Buric D, et al. Catechol-omethyltransferase polymorphisms predict opioid consumption in postoperative pain. *Anesth. Analg*. Nov 2014;119(5):1194-1200.
185. Caudle KE, Rettie AE, Whirl-Carrillo M, et al. Clinical Pharmacogenetics Implementation Consortium Guidelines for CYP2C9 and HLA-B Genotypes and Phenytoin Dosing. *Clinical pharmacology and therapeutics*. Nov 2014;96(5):542-548.
186. Chang M, Tybring G, Dahl ML, Lindh JD. Impact of cytochrome P450 2C19 polymorphisms on citalopram/escitalopram exposure: a systematic review and meta-analysis. *Clin. Pharmacokinet*. Sep 2014;53(9):801-811.
187. Chen G, Lee R, Hojer AM, Buchbjerg JK, Serenko M, Zhao Z. Pharmacokinetic drug interactions involving vortioxetine (Lu AA21004), a multimodal antidepressant. *Clin. Drug Investig*. Oct 2013;33(10):727-736.
188. Das C, Mendez G, Jagasia S, Labbate LA. Second-generation antipsychotic use in schizophrenia and associated weight gain: a critical review and meta-analysis of behavioral and pharmacologic treatments. *Ann. Clin. Psychiatry*. Aug 2012;24(3):225-239.
189. Dubnov G, Fogelman R, Merlob P. Prolonged QT interval in an infant of a fluoxetine treated mother. *Arch. Dis. Child*. Sep 2005;90(9):972-973.
190. Ellingrod VL, Perry PJ, Ringold JC, et al. Weight gain associated with the -759C/T polymorphism of the 5HT2C receptor and olanzapine. *Am. J. Med. Genet. B Neuropsychiatr. Genet*. Apr 5 2005;134B(1):76-78.
191. Gasso P, Rodriguez N, Mas S, et al. Effect of CYP2D6, CYP2C9 and ABCB1 genotypes on fluoxetine plasma concentrations and clinical improvement in children and adolescent patients. *Pharmacogenomics J*. Oct 2014;14(5):457-462.
192. Godlewska BR, Olajosy-Hilkesberger L, Ciwoniuk M, et al. Olanzapine-induced weight gain is associated with the -759C/T and -697G/C polymorphisms of the HTR2C gene. *Pharmacogenomics J*. Aug 2009;9(4):234-241.
193. Grover S, Kukreti R. HLA alleles and hypersensitivity to carbamazepine: an updated systematic review with meta-analysis. *Pharmacogenet. Genomics*. Feb 2014;24(2):94-112.
194. Hendset M, Molden E, Knappe M, Hermann M. Serum concentrations of risperidone and aripiprazole in subgroups encoding CYP2D6 intermediate metabolizer phenotype. *Ther. Drug Monit*. Feb 2014;36(1):80-85.
195. Hwang IC, Park JY, Myung SK, Ahn HY, Fukuda K, Liao Q. OPRM1 A118G Gene Variant and Postoperative Opioid Requirement: A Systematic Review and Meta-analysis. *Anesthesiology*. Oct 2014;121(4):825-834.
196. Laika B, Leucht S, Heres S, Schneider H, Steimer W. Pharmacogenetics and olanzapine treatment: CYP1A2\*1F and serotonergic polymorphisms influence therapeutic outcome. *Pharmacogenomics J*. Feb 2010;10(1):20-29.
197. Leckband SG, Kelsoe JR, Dunnenberger HM, et al. Clinical Pharmacogenetics Implementation Consortium guidelines for HLA-B genotype and carbamazepine dosing. *Clin. Pharmacol. Ther*. Sep 2013;94(3):324-328.
198. Li X, Yu K, Mei S, et al. HLA-B\*1502 Increases the Risk of Phenytoin or Lamotrigine Induced Stevens- Johnson Syndrome/Toxic Epidermal Necrolysis: Evidence from a Meta-analysis of Nine Casecontrol Studies. *Drug research*. May 28 2014.
199. Miller DD, Ellingrod VL, Holman TL, Buckley PF, Arndt S. Clozapine-induced weight gain associated with the 5HT2C receptor -759C/T polymorphism. *Am. J. Med. Genet. B Neuropsychiatr. Genet*. Feb 5 2005;133B(1):97-100.
200. Nicholson WT, Fornea CM. Clinical Perspective on the Clinical Pharmacogenetics Implementation Consortium Updated 2014 Guidelines for CYP2D6 and Codeine. *Clin. Chem*. Oct 9 2014.
201. Opgen-Rhein C, Brandl EJ, Muller DJ, et al. Association of HTR2C, but not LEPR or INSIG2, genes with antipsychotic-induced weight gain in a German sample. *Pharmacogenomics*. Jun 2010;11(6):773-780.

202. Penas-Lledo EM, Trejo HD, Dorado P, et al. CYP2D6 ultrarapid metabolism and early dropout from fluoxetine or amitriptyline monotherapy treatment in major depressive patients. *Mol. Psychiatry*. Jan 2013;18(1):8-9.
203. Reynolds GP, Zhang Z, Zhang X. Polymorphism of the promoter region of the serotonin 5-HT<sub>2C</sub> receptor gene and clozapine-induced weight gain. *Am. J. Psychiatry*. Apr 2003;160(4):677-679.
204. Sicard MN, Zai CC, Tiwari AK, et al. Polymorphisms of the HTR<sub>2C</sub> gene and antipsychotic-induced weight gain: an update and meta-analysis. *Pharmacogenomics*. Nov 2010;11(11):1561-1571.
205. Tangamornsuksan W, Chaiyakunapruk N, Somkrua R, Lohitnavy M, Tassaneeyakul W. Relationship between the HLA-B\*1502 allele and carbamazepine-induced Stevens-Johnson syndrome and toxic epidermal necrolysis: a systematic review and meta-analysis. *JAMA dermatology*. Sep 2013;149(9):1025-1032.
206. Templeman LA, Reynolds GP, Arranz B, San L. Polymorphisms of the 5-HT<sub>2C</sub> receptor and leptin genes are associated with antipsychotic drug-induced weight gain in Caucasian subjects with a first-episode psychosis. *Pharmacogenet. Genomics*. Apr 2005;15(4):195-200.
207. Yip VL, Marson AG, Jorgensen AL, Pirmohamed M, Alfirevic A. HLA genotype and carbamazepine-induced cutaneous adverse drug reactions: a systematic review. *Clin. Pharmacol. Ther.* Dec 2012;92(6):757-765.
208. Zhang JP, Lencz T, Malhotra AK. D<sub>2</sub> receptor genetic variation and clinical response to antipsychotic drug treatment: a meta-analysis. *Am. J. Psychiatry*. Jul 2010;167(7):763-772.
209. Baber M, Chaudhry S, Kelly L, et al. The pharmacogenetics of codeine pain relief in the postpartum period. *Pharmacogenomics J*. Mar 10 2015.
210. Fijal BA, Guo Y, Li SG, et al. CYP2D6 predicted metabolizer status and safety in adult patients with attention-deficit hyperactivity disorder participating in a large placebo-controlled atomoxetine maintenance of response clinical trial. *J. Clin. Pharmacol*. Apr 28 2015.
211. Gupta A, Zheng L, Ramanujam V, Gallagher J. Novel use of pharmacogenetic testing in the identification of CYP2C9 polymorphisms related to NSAID-induced gastropathy. *Pain Med*. Jan 13 2015.
212. Hicks JK, Bishop JR, Sangkuhl K, et al. Clinical Pharmacogenetics Implementation Consortium (CPIC) Guideline for CYP2D6 and CYP2C19 genotypes and dosing of selective serotonin reuptake inhibitors. *Clin. Pharmacol. Ther.* May 13 2015.
213. Lassen D, Damkier P, Brosen K. The pharmacogenetics of tramadol. *Clin. Pharmacokinet*. Apr 25 2015.
214. Madan A, Walker CR, Weinstein B, Fowler JC. Pharmacogenomics in practice: a case report of personalized inpatient psychiatric care. *Pharmacogenomics*. Apr 2015;16(5):433-439.
215. Orliaguet G, Hamza J, Couloigner V, et al. A case of respiratory depression in a child with ultrarapid CYP2D6 metabolism after tramadol. *Pediatrics*. Mar 2015;135(3):e753-755.
216. Haufroid, V., M. Mourad, V. Van Kerckhove, J. Wawrzyniak, M. De Meyer, D.C. Eddour, J. Malaise, D. Lison, J.P. Squifflet, and P. Wallemacq. 2004. The effect of CYP3A5 and MDR1 (ABCB1) polymorphisms on cyclosporine and tacrolimus dose requirements and trough blood levels in stable renal transplant patients. *Pharmacogenetics*. 14:147-154.
217. Takashina, Y., T. Naito, Y. Mino, T. Yagi, K. Ohnishi, and J. Kawakami. 2012. Impact of CYP3A5 and ABCB1 gene polymorphisms on fentanyl pharmacokinetics and clinical responses in cancer patients undergoing conversion to a transdermal system. *Drug Metab. Pharmacokinet*. 27:414-421.
218. Tanaka, N., T. Naito, T. Yagi, M. Doi, S. Sato, and J. Kawakami. 2014. Impact of CYP3A5\*3 on plasma exposure and urinary excretion of fentanyl and norfentanyl in the early postsurgical period. *Ther. Drug Monit*. 36:345-352.
219. Anectine® [package insert]. Princeton, NJ: Sandoz Inc; 2018.
220. Maynard G. Preventing hospital-associated venous thromboembolism: a guide for effective quality improvement, 2nd ed. Rockville, MD: Agency for Healthcare Research and Quality; October 2015. AHRQ Publication No. 16-0001-EF.
221. Abohelaika S, Wynne H, Avery P, Kamali F. Influence of CYP2C9 polymorphism on the fall in International Normalized Ratio in patients interrupting warfarin therapy before elective surgery. *Journal of thrombosis and haemostasis : JTH*. 2015;13(8):1436-1440.
222. Abohelaika S, Wynne H, Cope L, Kamali F. The impact of genetics on the management of patients on warfarin awaiting surgery. *Age and ageing*. 2015;44(4):721-722.
223. Bartels CF, Jensen FS, Lockridge O, et al. DNA mutation associated with the human butyrylcholinesterase K-variant and its linkage to the atypical variant mutation and other polymorphic sites. *American journal of human genetics*. 1992;50(5):1086-1103.
224. Bretlau C, Sorensen MK, Vedersoe AL, Rasmussen LS, Gatke MR. Response to succinylcholine in patients carrying the K-variant of the butyrylcholinesterase gene. *Anesthesia and analgesia*. 2013;116(3):596-601.
225. Candiotti KA, Birnbach DJ, Lubarsky DA, et al. The impact of pharmacogenomics on postoperative nausea and vomiting: do CYP2D6 allele copy number and polymorphisms affect the success or failure of ondansetron prophylaxis? *Anesthesiology*. 2005;102(3):543-549.
226. de Jonge H, Elens L, de Loor H, van Schaik RH, Kuypers DR. The CYP3A4\*22 C>T single nucleotide polymorphism is associated with reduced midazolam and tacrolimus clearance in stable renal allograft recipients. *The pharmacogenomics journal*. 2015;15(2):144-152.
227. Ehrenforth S, Nemes L, Mannhalter C, et al. Impact of environmental and hereditary risk factors on the clinical manifestation of thrombophilia in homozygous carriers of factor V:G1691A. *Journal of thrombosis and haemostasis: JTH*. 2004;2(3):430-436.
228. Elens L, Nieuweboer A, Clarke SJ, et al. CYP3A4 intron 6 C>T SNP (CYP3A4\*22) encodes lower CYP3A4 activity in cancer patients, as measured with probes midazolam and erythromycin. *Pharmacogenomics*. 2013;14(2):137-149.
229. Gould MK, Garcia DA, Wren SM, et al. Prevention of VTE in nonorthopedic surgical patients: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. *Chest*. 2012;141(2 Suppl):e227S-277S.
230. Grody WW, Griffin JH, Taylor AK, Korf BR, Heit JA, Group AFVLW. American College of Medical Genetics consensus statement on factor V Leiden mutation testing. *Genetics in medicine: official journal of the American College of Medical Genetics*. Mar-Apr 2001;3(2):139-148.

231. Kaiser R, Sezer O, Papias A, et al. Patient-tailored antiemetic treatment with 5-hydroxytryptamine type 3 receptor antagonists according to cytochrome P-450 2D6 genotypes. *Journal of clinical oncology: official journal of the American Society of Clinical Oncology*. 2002;20(12):2805-2811.
232. Levano S, Ginz H, Siegemund M, et al. Genotyping the butyrylcholinesterase in patients with prolonged neuromuscular block after succinylcholine. *Anesthesiology*. 2005;102(3):531-535.
233. Okubo M, Murayama N, Shimizu M, Shimada T, Guengerich FP, Yamazaki H. CYP3A4 intron 6 C>T polymorphism (CYP3A4\*22) is associated with reduced CYP3A4 protein level and function in human liver microsomes. *The Journal of toxicological sciences*. 2013;38(3):349-354.
234. Seng KY, Hee KH, Soon GH, et al. CYP3A5\*3 and bilirubin predict midazolam population pharmacokinetics in Asian cancer patients. *Journal of clinical pharmacology*. 2014;54(2):215-224.
235. Soliday FK, Conley YP, Henker R. Pseudocholinesterase deficiency: a comprehensive review of genetic, acquired, and drug influences. *AANA journal*. 2010;78(4):313-320.
236. Wahlander K, Larson G, Lindahl TL, et al. Factor V Leiden (G1691A) and prothrombin gene G20210A mutations as potential risk factors for venous thromboembolism after total hip or total knee replacement surgery. *Thrombosis and haemostasis*. 2002;87(4):580-585.
237. Wong M, Balleine RL, Collins M, Liddle C, Clarke CL, Gurney H. CYP3A5 genotype and midazolam clearance in Australian patients receiving chemotherapy. *Clinical pharmacology and therapeutics*. 2004;75(6):529-538.
238. Yen T, Nightingale BN, Burns JC, Sullivan DR, Stewart PM. Butyrylcholinesterase (BChE) genotyping for post-succinylcholine apnea in an Australian population. *Clinical chemistry*. 2003;49(8):1297-1308.
239. American Society of Plastic Surgeons VTE Task Force: Risk Assessment and Prevention. 2011. Accessed 9/30/2016
240. Bell GC, Caudle KE, Whirl-Carrillo M, Gordon RJ, Hikino K, Prows CA, Gaedigk A, Agundez JAG, Sadhasivam S, Klein TE, Schwab M. Clinical Pharmacogenetics Implementation Consortium (CPIC) Guideline for CYP2D6 Genotype and Use of Ondansetron and Tropisetron. *Clinical pharmacology and therapeutics*. 2016; Accepted Author Manuscript. doi:10.1002/cpt.598.
241. Zuo P, Haberer LJ, Fang L, Hunt TL, Ridgway D, Russo MW. Integration of modeling and simulation to support changes to ondansetron dosing following a randomized, double-blind, placebo-, and active-controlled thorough QT study. *The Journal of Clinical Pharmacology*. 2014; 54: 1221–1229.
242. Nachimuthu S, Assar MD, Schussler JM. Drug-induced QT interval prolongation: mechanisms and clinical management. *Therapeutic Advances in Drug Safety*. 2012;3(5):241-253.
243. Gan TJ, Diemunsch P, Habib AS, Kovac A, Kranke P, Meyer TA, Watcha M, Chung F, Angus S, Apfel CC, Bergese SD, Candiotti KA, Chan MT, Davis PJ, Hooper VD, Lagoo-Deenadayalan S, Myles P, Nezat G, Philip BK, Tramèr MR. Consensus guidelines for the management of postoperative nausea and vomiting. *Anesthesia and Analgesia*. 2014 Jan;118(1):85-113.
244. Luvox® [package insert]. Baudette, MN: ANI Pharmaceuticals, Inc; 2017.
245. Rexulti® [package insert]. Tokyo, Japan: Otsuka Pharmaceutical Co, Ltd; 2018.
246. Suboxone® [package insert]. North Chesterfield, VA: Indivior Inc; 2018.
247. Ishigooka J, Iwashita S, Higashi K, Liew EL, Tadori Y. Pharmacokinetics and Safety of Brexpiprazole Following Multiple-Dose Administration to Japanese Patients With Schizophrenia. *Journal of clinical pharmacology*. 2018;58(1):74-80.
248. Markovic M, Gallipani A, Patel KH, Maroney M. Brexpiprazole. *Ann Pharmacother*. 2017;51(4):315-322.
249. McCance-Katz EF, Moody DE, Morse GD, et al. Interaction between buprenorphine and atazanavir or atazanavir/ritonavir. *Drug Alcohol Depend*. 2007;91(2-3):269-278.
250. McCance-Katz EF, Moody DE, Morse GD, et al. Interactions between buprenorphine and antiretrovirals. I. The nonnucleoside reverse-transcriptase inhibitors efavirenz and delavirdine. *Clin Infect Dis*. 2006;43 Suppl 4:S224-234.
251. McCance-Katz EF, Moody DE, Prathikanti S, Friedland G, Rainey PM. Rifampin, but not rifabutin, may produce opiate withdrawal in buprenorphine-maintained patients. *Drug Alcohol Depend*. 2011;118(2-3):326-334.
252. Smith DM, Weitzel KW, Elsey AR, et al. CYP2D6-guided opioid therapy improves pain control in CYP2D6 intermediate and poor metabolizers: a pragmatic clinical trial. *Genet Med*. 2019.
253. Suzuki Y, Sawamura K, Someya T. Polymorphisms in the 5-hydroxytryptamine 2A receptor and CytochromeP4502D6 genes synergistically predict fluvoxamine-induced side effects in Japanese depressed patients. *Neuropsychopharmacology : official publication of the American College of Neuropsychopharmacology*. 2006;31(4):825-831.
254. Suzuki Y, Sugai T, Fukui N, et al. CYP2D6 genotype and smoking influence fluvoxamine steady-state concentration in Japanese psychiatric patients: lessons for genotype-phenotype association study design in translational pharmacogenetics. *Journal of psychopharmacology*. 2011;25(7):908-914.
255. Watanabe J, Suzuki Y, Fukui N, et al. Dose-dependent effect of the CYP2D6 genotype on the steady-state fluvoxamine concentration. *Therapeutic drug monitoring*. 2008;30(6):705-708.



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