

# PPD® LABORATORIES

## Bioanalytical Lab Assay List

September 2018



Exploratory Biomarker Methods

Validated Methods





## LIST OF VALIDATED METHODS September 2018

Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
4 $\alpha$ - and 4 $\beta$ -Hydroxycholesterol	Human Plasma	2 to 500 ng/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-20	Richmond	Inactive	LCMSC 546
6-Methoxy-2-Naphthylacetic acid <i>aka Nabumetone metabolite</i>	Human Plasma	0.5 to 100 $\mu$ g/mL	HPLC/FL	0.05 mL	EDTA	-20	Richmond	Inactive	LC 184
3-Hydroxymandelic Acid	Human Urine	100 to 5000 ng/mL	LC/MS/MS	0.05 mL	None	-70	Madison	Inactive	P957
17 $\alpha$ -Ethinyl Estradiol (EE) & Etonogestrel	Human Plasma	2 to 800 pg/mL 25 to 10,000 pg/mL	LC/MS/MS	0.5 mL	KOx / NaF	-70	Richmond Madison	Active	LCMSD 603 P1311
Abacavir & Lamivudine (3TC)	Human Plasma	2.5 to 2500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1165
Abiraterone	Human Plasma	0.2 to 200 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1260
Acetaminophen & Oxycodone	Human Plasma	100 to 15,000 ng/mL 0.100 to 100 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1310
Acetaminophen & Hydrocodone	Human Plasma	100 to 15,000 ng/mL 0.1 to 50 ng/mL	LC/MS/MS	0.3 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1213
	Human Plasma	100 to 15,000 ng/mL 0.1 to 50 ng/mL	LC/MS/MS	0.15 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1305
Acetaminophen & Hydrocodone & Chlorpheniramine	Human Plasma	100 to 50,000 ng/mL 0.1 to 50 ng/mL 0.25 to 125 ng/mL	LC/MS/MS	0.3 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1066

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Acetaminophen (Acetaminophen sulfate) (p-Acetamidophenyl-β-D-glucuronide)	Human Urine	0.2 to 200 µg/mL 0.5 to 500 µg/mL 1 to 1000 µg/mL	LC/MS/MS	0.025 mL	None	-20	Madison	Active	P851
	Human Plasma	0.1 to 50 µg/mL 0.1 to 50 µg/mL 0.5 to 100 µg/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P852
Acyclovir	Human Plasma	5 to 1000 ng/mL	HPLC/FL	0.5 mL	Na Heparin	-20	Richmond	Inactive	LC 189
Adefovir	Human Plasma	0.1 to 50 ng/mL	LC/MS/MS	0.3 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1053
Albendazole (Sulfoxide & Sulfone Metabolites)	Cow Plasma	0.05 to 5 µg/mL	HPLC/UV	0.5 mL	Na Heparin	-20	Madison	Inactive	P562
Albuterol	Human Plasma	2 to 4000 pg/mL	LC/MS/MS	0.5 mL	Na Heparin	-20	Madison	Active	P951
	Human Plasma	0.05 to 25 ng/mL	LC/MS/MS	0.2 mL	Na Heparin	-20	Madison	Active	P1147
	Human Urine	20 to 2000 ng/mL	LC/MS/MS	0.1 mL	None	-20	Madison	Inactive	P465
	Dog Plasma	0.2 to 20 ng/mL	LC/MS/MS	1.0 mL	Na Heparin	-20	Madison	Inactive	P464
	Rat Plasma	0.4 to 400 ng/mL	LC/MS/MS	0.25 mL	Na Heparin	-20	Madison	Inactive	P463
Aliskiren	Human Plasma	0.5 to 500 ng/mL	LC/MS/MS	0.2 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1145
Alprazolam	Human Plasma	0.25 to 40 ng/mL	LC/MS/MS	0.5 mL	Na Heparin	-20	Richmond	Active	LCMS 225
Alprazolam (α-Hydroxyalprazolam) (4-Hydroxyalprazolam)	Human Plasma	0.2 to 40 ng/mL	LC/MS/MS	0.3 mL	Na Heparin	-20	Madison	Inactive	P335

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Ambrisentan (4-Hydroxymethyl ambrisentan)	Human Plasma	1 to 400 ng/mL 0.25 to 100 ng/mL	LC/MS/MS	0.1 mL	Na Citrate	-20	Richmond	Active	LCMSC 498
	Human Plasma	1 to 500 ng/mL 0.25 to 125 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 498.1
	Human Plasma	1 to 500 ng/mL 0.25 to 125 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1513
Amitriptyline (Nortriptyline)	Human Plasma	0.5 to 200 ng/mL	LC/MS/MS	0.25 mL	Na Heparin	-20	Madison	Inactive	P558
	Rabbit Plasma	1 to 500 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	Inactive	P647
Amitriptyline	Human Plasma	0.5 to 200 ng/mL	LC/MS/MS	0.25 mL	Na Heparin	-20	Richmond	Inactive	LCMS 301
Amlodipine	Human Plasma	0.1 to 50 ng/mL	LC/MS/MS	0.2 mL	Na Heparin	-20	Richmond	Inactive	LCMS 151
Amoxicillin	Human Serum	50 to 25,000 ng/mL	LC/MS/MS	0.1 mL	None	-70	Richmond	Inactive	LCMS 141
	Human Plasma	50 to 25,000 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-70	Richmond	Active	LCMSC 141.2
	Dog Plasma	50 to 25,000 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-70	Madison	Active	P1525
	Cat Plasma	50 to 25,000 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-70	Madison	Active	P1540
DL-Amphetamine	Human Plasma	0.5 to 50 ng/mL per enantiomer	LC/MS/MS	0.25 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1523
Apixaban	Human Plasma	5 to 1000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1261
Apremilast	Human Plasma	2 to 1000 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1546



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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Aripiprazole (Dehydroaripiprazole)	Human Plasma	0.5 to 250 ng/mL 0.1 to 50 ng/mL	LC/MS/MS	0.25 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMS 386
Asenapine (Desmethyiasenapine)	Human Plasma	0.05 to 50 ng/mL	LC/MS/MS	0.3 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1120
Atazanavir & Ritonavir	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA K <sub>2</sub> EDTA	-20	Madison Richmond	Active	P1012 LCMSC 210.4
Atenolol	Human Whole Blood	10 to 1000 ng/mL	HPLC/FL	1.0 mL	Na Heparin	-20	Madison	Inactive	P161
Atovaquone	Human Plasma	0.025 to 10 µg/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-20	Richmond	Inactive	LCMS 360
Atorvastatin (Ortho-hydroxyatorvastatin) (Para-hydroxyatorvastatin)	Human Plasma	0.1 to 75 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-70	Richmond	Inactive	LCMS 120
	Human Plasma	0.1 to 75 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-70	Madison	Active	P913
	Human Plasma	0.1 to 75 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1205
	Rat Plasma	0.1 to 75 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-70	Richmond	Inactive	LCMS 120.3
Azacitadine	Human Plasma	1 to 2000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1040
Azelastine Desmethyiazelastine	Human Plasma	1 to 1000 pg/mL 0.1 to 100 pg/ mL	LC/MS/MS	1.0 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1231
Azithromycin	Human Plasma	2.5 to 1000 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-20	Richmond	Inactive	LCMS 168
Azidothymidine (AZT)	Human Plasma	50 to 25,000 ng/mL	HPLC/UV	0.25 mL	Na Heparin	-20	Richmond	Inactive	LC 96
	Human Urine	0.2 to 25 µg/mL	HPLC/UV	1.0 mL	None	-20	Richmond	Inactive	LC 96.1
Baclofen	Human Plasma	1 to 1000 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1341

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Balsalazide	Human Plasma	1 to 1000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1201
(Beclomethasone-17-propionate) (Beclomethasone dipropionate)	Human Plasma	10 to 2500 pg/mL 5 to 1250 pg/mL	LC/MS/MS	0.2 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMSD 333.1
Benazepril (Benazeprilat)	Human Plasma	10 to 1000 ng/mL	LC/MS/MS	0.05 mL	Na <sub>2</sub> EDTA	-20	Richmond	Inactive	LCMS 107
Bicalutamide	Human Plasma	10 to 1250 ng/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMS 318
Bisoprolol	Human Plasma	0.5 to 200 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Richmond	Inactive	LCMSB 501
Boceprevir	Human Plasma	0.01 to 2 µg/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA with 5% phosphoric acid	-20	Madison	Inactive	P1168
Bortezomib	Human Plasma with Formic Acid	0.5 to 500 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-70	Richmond Madison	Active	LCMS 509 P1538
	Human Plasma with Citric Acid	0.5 to 500 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-70	Madison	Active	P1247
Brompheniramine	Human Plasma	0.05 to 20 ng/mL	LC/MS/MS	0.1 mL	Li Heparin	-20	Richmond	Active	LCMSC 436
Budesonide	Human Plasma	10 to 2500 pg/mL	LC/MS/MS	0.25 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P429
Bupivacaine	Human Plasma	1 to 1000 ng/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1306
Buprenorphine (Norbuprenorphine) Naloxone	Human Plasma	20 to 10,000 pg/mL 20 to 10,000 pg/mL 2 to 1000 pg/mL	LC/MS/MS	0.5 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P1160

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Bupropion (Hydroxybupropion) (Erthrohydrobupropion) (Threohydrobupropion)	Human Plasma	0.5 to 200 ng/mL 1 to 400 ng/mL 0.5 to 200 ng/mL 0.5 to 200 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P986
Bupropion (Hydroxybupropion)	Human CSF	0.5 to 200 ng/mL 1 to 400 ng/mL	LC/MS/MS	0.1 mL	None	-70	Madison	Active	P1253
(S)-Bupropion [(S,S)-Hydroxybupropion]	Human Plasma	0.5 to 200 ng/mL 2.5 to 1000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1279
(R)-Bupropion (S)-Bupropion [(R,R)-Hydroxybupropion] [(S,S)-Hydroxybupropion]	Human Plasma	0.5 to 200 ng/mL 2.5 to 1000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1347
Butalbital	Human Plasma	0.05 to 25 µg/mL	HPLC/UV	0.25 mL	Na Heparin	-20	Richmond	Inactive	LC 196
	Human Plasma	0.1 to 10 µg/mL	HPLC/UV	0.5 mL	Na Heparin	-20	Madison	Inactive	P301
Caffeine (1,7-Dimethylxanthine)	Human Plasma	20 to 20,000 ng/mL	LC/MS/MS	0.15 mL	Na Heparin	-20	Richmond	Active	LCMSC 207
	Human Plasma	25 to 25,000 ng/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1560
	Human Urine	50 to 50,000 ng/mL	LC/MS/MS	0.025 mL	None	-20	Madison	Active	P739
Canagliflozin	Human Plasma	5 to 5000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1304

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Candesartan	Human Plasma	0.5 to 400 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 451
	Human Urine	10 to 5000 ng/mL	LC/MS/MS	0.05 mL	None	-20	Richmond	Active	LCMSC 451.1
Carbidopa & Levodopa	Human Plasma	0.5 to 250 ng/mL 5 to 2500 ng/mL	LC/MS/MS	0.2 mL	K <sub>3</sub> EDTA	-70	Madison	Active	P838
	Rat Plasma	25 to 5000 ng/mL 50 to 10,000 ng/mL	LC/MS/MS	0.02 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1420
Carbidopa (3-O-MethylDopa) & Levodopa	Human Plasma	10 to 5000 ng/mL 400 to 25,000 ng/mL 10 to 5000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1571
Carbamazepine (Carbamazepine 10,11 Epoxide)	Human Plasma	0.05 to 50 µg/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Madison	Inactive	P626
Carbamazepine, Free (unbound) (Carbamazepine 10,11 Epoxide)	Human Plasma Ultrafiltrate	0.1 to 20 µg/mL	HPLC/UV	0.25 mL	Na Heparin	-20	Madison	Inactive	P238
(Carbamazepine 10,11 Epoxide)	Human Urine	0.1 to 20 µg/mL	HPLC/UV	0.25 mL	None	-20	Madison	Inactive	P257
(Monohydroxycarbazepine)	Human Plasma	1 to 50 µg/mL	LC/MS/MS	0.05 mL	Na Heparin	-70	Madison	Inactive	P886
Carprofen	Dog Plasma	25 to 25,000 ng/mL	LC/MS/MS	0.03 mL	Li Heparin	-20	Madison	Active	P1082
Carvedilol	Human Plasma	0.1 to 50 ng/mL	LC/MS/MS	0.2 mL	Na Heparin	-20	Madison	Inactive	P789
Cefaclor	Human Plasma	0.1 to 25 µg/mL	HPLC/UV	0.5 mL	Na Heparin	-70	Richmond	Inactive	LC 305
Cefadroxil	Human Serum	0.25 to 50 µg/mL	HPLC/UV	0.10 mL	None	-70	Richmond	Inactive	LC 52
	Human Urine	5 to 1000 µg/mL	HPLC/UV	0.05 mL	None	-20	Richmond	Inactive	LC 52.1



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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Celecoxib	Human Plasma	5 to 2000 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Richmond	Active	LCMSD 417
Celiprolol	Human Plasma	10 to 2000 ng/mL	HPLC/UV	1.0 mL	Na Heparin	-20	Richmond	Inactive	LC 30
Cephalexin	Human Plasma	0.1 to 100 µg/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA	-20	Richmond	Inactive	LCMSB 382
Cetirizine	Human Plasma	0.5 to 500 ng/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA	-20	Richmond	Inactive	LCMSB 169
Chlorpheniramine	Human Plasma	0.25 to 50 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Richmond	Active	LCMS 214
Chlorthalidone	Human Plasma	2 to 1000 ng/mL	LC/MS/MS	0.25 mL	Na Heparin	-20	Richmond	Active	LCMS 389.2
	Human Urine	10 to 5000 ng/mL	LC/MS/MS	0.1 mL	None	-20	Richmond	Active	LCMS 389.1
Chlorzoxazone (6-Hydroxychlorzoxazone)	Human Plasma	5 to 5000 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Richmond	Inactive	LCMS 209
Clenbuterol	Horse Plasma	12.5 to 1000 pg/mL	LC/MS/MS	1.0 mL	Na Heparin	-20	Madison	Active	P1119
Cimetidine	Human Urine	5.0 to 5000 µg/mL	HPLC/UV	0.05 mL	None	-20	Richmond	Inactive	LC 358.1
	Human Plasma	0.01 to 10 µg/mL	HPLC/UV	0.5 mL	Na Heparin	-20	Richmond	Inactive	LC 358
Ciprofloxacin	Human Plasma	25 to 10,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMS 176



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Ciprofloxacin & Enrofloxacin	Dog Plasma	10 to 5000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1127
	Cat Plasma	10 to 5000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1256
Citalopram	Human Plasma	1 to 500 ng/mL	LC/MS/MS	0.2 mL	Na Heparin	-20	Richmond	Active	LCMS 332
Citalopram (Desmethylcitalopram)	Human Plasma	1 to 500 ng/mL 0.2 to 100 ng/mL	LC/MS/MS	0.2 mL	Na Heparin	-20	Madison	Inactive	P787
	Human Plasma	1 to 500 ng/mL 0.2 to 100 ng/mL	LC/MS/MS	0.2 mL	Na Heparin	-20	Richmond	Inactive	LCMSB 332.2
Clarithromycin (14-Hydroxycarithromycin)	Human Plasma	20 to 10,000 ng/mL 5 to 2500 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Richmond	Inactive	LCMSB 179
Clavulanic Acid	Cat Plasma	0.1 to 10 µg/mL	LC/MS/MS	0.05 mL	Na Heparin	-70	Madison	Active	P1553
	Dog Plasma	0.1 to 10 µg/mL	LC/MS/MS	0.05 mL	Na Heparin	-70	Madison	Active	P1531
Clopidogrel (Clopidogrel Acid)	Human Plasma	0.2 to 200 ng/mL 10 to 10,000 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMS 271
Clorsulon	Cow Plasma	0.1 to 10 ng/mL	LC/MS/MS	1.0 mL	Na Heparin	-20	Madison	Inactive	P717
Cobicistat	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1211
Cocktail Assay, "Epilepsy"	Human Plasma		LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	Inactive	P837
Carbamazepine		0.1 to 50 µg/mL							
Lamotrigine		0.1 to 20 µg/mL							
Phenobarbital		0.1 to 50 µg/mL							
Phenytoin		0.1 to 30 µg/mL							
Topiramate		0.1 to 50 µg/mL							



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Cocktail Assay, "Antiviral"  Darunavir Lopinavir Raltegravir Ritonavir	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-20	Madison Richmond	Active	P1002
Codeine & Morphine (Morphine-3β-glucuronide) (Morphine-6β-glucuronide)	Human Plasma	1 to 100 ng/mL 0.2 to 20 ng/mL 2 to 200 ng/mL 0.5 to 50 ng/mL	LC/MS/MS	0.25 mL	Na Heparin	-20	Richmond	Active	LCMSC 396
Codeine & Morphine & Guaifenesin	Human Plasma	0.1 to 100 ng/mL 0.2 to 20 ng/mL 2 to 2000 ng/mL	LC/MS/MS	0.3 mL	Na Heparin	-20	Madison	Active	P919
Cortisol (6β-Hydroxycortisol)	Human Urine	1 to 200 ng/mL 6 to 1200 ng/mL	LC/MS/MS	0.1 mL	None	-70	Richmond	Active	LCMSC 355
(6β-Hydroxycortisol) (6β-Hydroxycortisone)	Human Urine	0.5 to 250 ng/mL	LC/MS/MS	0.05mL	None	-70	Richmond	Active	LCMSC 584.1
(6β-Hydroxycortisol) (6β-Hydroxycortisone)	Human Plasma	0.5 to 250 ng/mL	LC/MS/MS	0.05mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMSC 584
Cortisol <i>aka Hydrocortisone</i> Cortisone	Human Urine	1 to 250 ng/mL	LC/MS/MS	0.05 mL	None	-70	Richmond	Active	LCMSC 472
	Human Serum	1 to 500 ng/mL 0.5 to 250 ng/mL	LC/MS/MS	0.05 mL	None	-70	Richmond	Active	LCMSD 472.1
	Human Plasma	1 to 500 ng/mL 0.5 to 250 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMSD 472.2



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5- $\alpha$ -Tetrahydrocortisol (5- $\alpha$ -THF) 5- $\beta$ -Tetrahydrocortisol (5- $\beta$ -THF) Tetrahydrocortisone (THE)	Human Urine	20 to 5000 ng/mL	LC/MS/MS	0.05 mL	None	-70	Richmond	Active	LCMSC 471
Creatine (Creatinine)	Human Urine	5 to 250 $\mu$ g/mL 100 to 5000 $\mu$ g/mL	LC/MS/MS	0.025 mL	None	-20	Richmond	Active	LCMS 635
Cyclophosphamide	Human Plasma	0.25 to 50 $\mu$ g/mL	HPLC/UV	0.25 mL	Na Heparin	-20	Richmond	<b>Inactive</b>	LC 232
Cyclosporin	Human Whole Blood	5 to 5000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 582
	Human Whole Blood	2 to 2000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond Madison	Active	LCMSC 582.1 P1429
D4T	Human Plasma	0.025 to 25 $\mu$ g/mL	HPLC/UV	0.5 mL	Na Heparin	-20	Richmond	<b>Inactive</b>	LC 211
Dabigatran, Total	Human Plasma	1 to 500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1270
Dabigatran	Human Plasma	0.5 to 250 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1266
Dalfampridine	Human Plasma	0.2 to 50 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1161
Dalteparin using Factor Xa	Human Plasma	0.04 to 0.5 IU/mL	Chromogenic	0.05 mL	Na Citrate	-70	Richmond	<b>Inactive</b>	ICD 324
Dalteparin using Factor IIa	Human Plasma	0.03 to 0.16 IU/mL	Chromogenic	0.02 mL	Na Citrate	-70	Richmond	<b>Inactive</b>	ICD 325
Danazol	Human Plasma	2 to 200 ng/mL	HPLC/UV	1.0 mL	Na Heparin	-20	Richmond	<b>Inactive</b>	LC 18
Darunavir See "Cocktail Assay Antiviral"	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-20	Madison Richmond	Active	P1002

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Daunorubicin (Daunorubicinol)	Human Plasma	5 to 200 ng/mL	HPLC/FL	0.5 mL	Na Heparin	-20	Richmond	Inactive	LC 301
Dasatinib (Deshydroxyethyl dasatinib)	Human Plasma	0.2 to 200 ng/mL 0.05 to 50 ng/mL	LC/MS/MS	0.25 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1027
Decitabine	Human Plasma	0.5 to 250 ng/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1276
Deferasirox	Human Plasma	0.1 to 100 µg/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1223
Deracoxib	Dog Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1094
Desipramine (2-Hydroxydesipramine)	Human Plasma	0.25 to 100 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Richmond	Inactive	LCMS 103
	Human Urine	10 to 2500 ng/mL 100 to 25,000 ng/mL	LC/MS/MS	0.05 mL	None	-70	Richmond	Active	LCMS 103.1
	Human Plasma	0.25 to 100 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	Active	P644

## LIST OF VALIDATED METHODS September 2018

Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Dexamethasone	Human Plasma	0.5 to 500 ng/mL	LC/MS/MS	0.2 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMS 328
	Human Plasma	0.5 to 500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSD 328
	Human Plasma	0.05 to 50 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 328.1
	Human Plasma	0.5 to 500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1604
	SD Rat Plasma	0.05 to 50 ng/mL	LC/MS/MS	0.03 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P1516
	Dog Plasma	0.05 to 50 ng/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P1517
	Dog Plasma	1 to 1000 ng/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P1526
Dexlansoprazole	Human Plasma	5 to 5000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1026
Dextromethorphan	Human Plasma	10 to 5000 pg/mL	LC/MS/MS	0.5 mL	Na Heparin	-20	Madison	Active	P732
Dextromethorphan (Dextrorphan)	Dog Plasma	2.5 to 500 ng/mL	HPLC/FL	0.2 mL	Na Heparin	-20	Madison	Inactive	P423
	Rat Plasma	5 to 1000 ng/mL	HPLC/FL	0.1 mL	Na Heparin	-20	Madison	Inactive	P422
	Human Plasma	0.05 to 50 ng/mL 0.8 to 800 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	Active	P668
Dextromethorphan, Total** & Unconjugated (Dextrorphan) (3-methoxymorphinan) (3-hydroxymorphinan)	Human Urine	0.001 to 1 µg/mL 0.020 to 20 µg/mL 0.001 to 1 µg/mL 0.01 to 10 µg/mL	LC/MS/MS	0.05 mL	None	-20	Madison	Active	P600
Dextromethorphan & Guaifenesin	Human Plasma	0.01 to 5 ng/mL 8 to 4000 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	Active	P1285



## LIST OF VALIDATED METHODS September 2018

Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Dextromethorphan & Pseudoephedrine	Human Plasma	10 to 5000 pg/mL 0.8 to 400 ng/mL	LC/MS/MS	0.5 mL	Na Heparin	-20	Madison	Active	P617
Dextromethorphan (Dextrophan) & Pseudoephedrine	Human Plasma	0.200 to 200 ng/mL 2.50 to 2500 ng/mL 2.50 to 2500 ng/mL	LC/MS/MS	0.025 mL	Na Heparin	-20	Richmond	Active	LCMSC 690
Diazepam (N-Desmethyldiazepam)	Human Plasma	2 to 1000 ng/mL 1 to 500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMS 466
Diclofenac	Human Plasma	0.1 to 100 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-70	Richmond	Active	LCMSC 368
	Human Plasma	0.1 to 100 ng/mL	LC/MS/MS	0.25 mL	Na Heparin	-20	Madison	Inactive	P1121
Dienogest	Human Plasma	0.2 to 200 ng/mL	LC/MS/MS	0.2 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1063
Digoxin	Human Plasma	0.1 to 50 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Richmond Madison	Active	LCMSC 455 P1419
	Human Plasma	0.1 to 50 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 455.1
	Human Plasma	0.05 to 50 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSD 455.2
	Human Plasma	0.01 to 10 ng/mL	LC/MS/MS	0.15 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSD 455.3
	Human Urine	0.2 to 200 ng/mL	LC/MS/MS	0.25 mL	None	-20	Richmond	Active	LCMSD 455.4
Diltiazem (Desacetyldiltiazem) (Desmethyldiltiazem)	Human Plasma	0.1 to 200 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-70	Madison	Inactive	P1634
Diphenhydramine	Human Plasma	0.2 to 200 ng/mL	LC/MS/MS	0.25 mL	K <sub>3</sub> EDTA	-20	Madison	Inactive	P912

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Dipyridamole	Human Plasma	20 to 20,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMS 625
Docetaxel	Human Plasma	10 to 5000 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Richmond	Inactive	LCMSB 216
Dolutegravir	Human Plasma	20 to 20,000 ng/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-20	Madison Richmond	Active	P1297 LCMSD 726
Donepezil	Human Plasma	0.2 to 50 ng/mL	LC/MS/MS	0.2 mL	Na Heparin	-20	Richmond	Active	LCMS 203
	Human Plasma	0.2 to 100 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	Active	P983
	Rat Plasma	0.5 to 250 ng/mL	LC/MS/MS	0.02 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1054
Donepezil & Memantine	Human Plasma	0.1 to 50 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1258
Doxazosin	Human Plasma	0.05 to 50 ng/mL	HPLC/FL	1.0 mL	Na Heparin	-20	Richmond	Inactive	LC 266
Doxepin (Desmethyldoxepin)	Human Plasma	0.5 to 250 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	Inactive	P815
Doxorubicin	Human Plasma	1 to 200 ng/mL	HPLC/FL	0.5 mL	Na Heparin	-70	Richmond	Inactive	LC 252
	Human Plasma	50 to 50,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1386
Doxycycline	Human Plasma	0.1 to 10 µg/mL	LC/MS/MS	0.025 mL	Na Heparin	-20	Richmond Madison	Active	LCMS 511 P1325
Dronedarone (N-Desbutyl Dronedarone)	Human Plasma	0.5 to 300 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1150



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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Drospirenone & 17 $\alpha$ -Ethinyl Estradiol (EE)	Human Plasma	0.5 to 200 ng/mL 2 to 800 pg/mL	LC/MS/MS	0.5 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 545
Duloxetine	Human Plasma	0.2 to 200 ng/mL	LC/MS/MS	0.5 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P882
Dutasteride & Tamsulosin	Human Plasma	0.025 to 25 ng/mL	LC/MS/MS	0.2 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1068
Dutasteride & Tamsulosin	Human Serum	25 to 25,000 pg/mL	LC/MS/MS	0.1 mL	None	-20	Madison	Active	P1130
Efavirenz	Human Plasma	0.1 to 25 $\mu$ g/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond Madison	Inactive Active	LCMSB 517 P1326
	Human Whole Blood	0.1 to 25 $\mu$ g/mL	DBS by LC/MS/MS	0.1-0.3 mL	K <sub>2</sub> EDTA	Room Temp	Richmond	Inactive	LCMSB 517.1
Eicosapentaenoic Acid & Docosahexaenoic Acid (EPA & DHA)	Human Plasma	10 to 5000 ng/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 618
Eicosapentaenoic Acid & Docosahexaenoic Acid (EPA & DHA), Total	Human Plasma	2 to 200 $\mu$ g/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 619
Eicosapentaenoic Acid Ethyl Ester Docosahexaenoic Acid Ethyl Ester (EPA-EE & DHA-EE)	Human Plasma	0.25 to 250 ng/mL	LC/MS/MS	0.5 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMSD 633
Eltrombopag	Human Plasma	100 to 50,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMS 723
Elvitegravir	Human Plasma	0.5 to 500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1455

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Emtricitabine & Tenofovir	Human Plasma	20 to 4000 ng/mL 5 to 1000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 468
	Human Plasma	20 to 4000 ng/mL 5 to 1000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P947
Enalapril (Enalaprilat)	Human Plasma	0.25 to 100 ng/mL	LC/MS/MS	0.25 mL	Na Heparin	-20	Madison	Inactive	P435
	Human Plasma	0.5 to 250 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Richmond	Inactive	LCMS 31
	Dog Plasma	0.25 to 400 ng/mL	LC/MS/MS	0.25 mL	Na Heparin	-20	Madison	Inactive	P532
Enoxaparin using Factor IIA	Human Plasma	0.03 to 0.16 IU/mL	Chromogenic	0.05 mL	Na Citrate	-70	Richmond	Inactive	ICD 327
Enoxaparin using Factor XA	Human Plasma	0.04 to 0.5 IU/mL	Chromogenic	0.05 mL	Na Citrate	-70	Richmond	Inactive	ICD 326
Enrofloxacin & Ciprofloxacin	Dog Plasma	10 to 5000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1127
	Cat Plasma	10 to 5000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1256
Enzalutamide (N-desmethyl enzalutamide)	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1342
Epinephrine	Human Plasma	0.05 to 8 ng/mL	HPLC/FL	1.0 mL	K <sub>3</sub> EDTA	-20	Madison	Inactive	P981



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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Erlotinib	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Richmond	Active	LCMSC 390
	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 390.1
	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.025 mL	Na Heparin	-20	Madison	Active	P1008
	Human Plasma	5 to 5000 ng/mL	LC/MS/MS	0.025 mL	Na Heparin	-20	Madison	Active	P1016
Erythromycin	Human Plasma	0.2 to 20 µg/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond Madison	Active	LCMS 463
Estazolam	Human Plasma	0.1 to 30 ng/mL	LC/MS/MS	1.0 mL	Na Heparin	-20	Madison	Inactive	P336
17β-Estradiol, Total**	Human Serum	0.025 to 10 ng/mL	LC/MS/MS	0.1 mL	None	-70	Richmond	Inactive	LCMS 295
17β-Estradiol & Estrone	Human Serum	1 to 1000 pg/mL 5 to 5000 pg/mL	LC/MS/MS	0.5 mL	None	-20	Richmond	Active	LCMSC 350.2
	Human Serum	1 to 1000 pg/mL 5 to 5000 pg/mL	LC/MS/MS	0.25 mL	None	-70	Madison	Active	P1290
Estrone, Total**	Human Serum	20 to 5000 pg/mL	LC/MS/MS	0.5 mL	None	-70	Richmond	Inactive	LCMSC 351.3
Ethanol	Human Plasma	20 to 1000 µg/mL	GC/FID	0.1 mL	KOx / NaF	-20	Richmond	Active	GC 89
Etonogestrel & 17α-Ethinyl Estradiol (EE)	Human Plasma	25 to 10,000 pg/mL 2 to 800 pg/mL	LC/MS/MS	0.5 mL	KOx / NaF	-70	Richmond Madison	Active	LCMSD 603 P1311
17α-Ethinyl Estradio (EE) & Drospirenone	Human Plasma	2 to 800 pg/mL 0.5 to 200 ng/mL	LC/MS/MS	0.5 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 545
17α-Ethinyl Estradiol (EE) & Norethindrone	Human Plasma	2 to 500 pg/mL 50 to 25,000 pg/mL	LC/MS/MS	0.5 mL	Na Heparin	-20	Richmond	Active	LCMSC 255

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
17 $\alpha$ -Ethinyl Estradiol (EE) & Norgestrel	Human Plasma	2 to 500 pg/mL 50 to 25,000 pg/mL	LC/MS/MS	0.5 mL 0.25 mL	KOx / NaF	-70	Richmond Madison	Active	LCMSC 256 P1627
17 $\alpha$ -Ethinyl Estradiol 3-Sulfate	Human Plasma	50 to 10,000 pg/mL	LC/MS/MS	0.25 mL	Na Heparin	-20	Richmond	Active	LCMSC 398
Etodolac	Human Plasma	0.2 to 50 $\mu$ g/mL	HPLC/UV	1.0 mL	Na Heparin	-20	Richmond	<b>Inactive</b>	LC 193
Etoposide	Human Plasma	0.02 to 20 $\mu$ g/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMS 515
Etoricoxib	Human Plasma	5 to 2500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P971
Etravirine & Ritonavir	Human Plasma	0.5 to 500 ng/mL 10 to 10,000 ng/mL	LC/MS/MS	0.2 mL	K <sub>2</sub> EDTA	-20	Madison Richmond	Active	P1031
Exenatide	Human Plasma with Aprotinin	10 to 1000 pg/mL	LC/MS/MS	0.3 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMSD 566
	Rat Plasma	50 to 5000 pg/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMSF 566.1
Everolimus	Human Whole Blood	0.2 to 200 ng/mL	LC/MS/MS	0.5 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1022
Ezetimibe	Human Plasma	0.2 to 100 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 439
	Human Plasma	0.2 to 100 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P945
Ezetimibe, Total	Human Plasma	1.0 to 500 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 440
	Human Plasma	1.0 to 500 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P944
Famotidine	Human Plasma	5 to 250 ng/mL	HPLC/UV	1.0 mL	Na Heparin	-20	Madison	<b>Inactive</b>	P255

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Fenofibric Acid	Human Plasma	0.05 to 30 µg/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Richmond	Inactive	LCMSB 235
	Human Plasma	0.05 to 30 µg/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Madison	Active	P1043
Fentanyl	Human Plasma	25 to 10,000 pg/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Richmond	Inactive	LCMSB 186.5
	Human Plasma	5 to 2000 pg/mL	LC/MS/MS	0.25 mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMSC 186.4
	Human Plasma	5 to 5000 pg/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1405
	Human Serum	10 to 2000 pg/mL	LC/MS/MS	0.1 mL	None	-20	Madison	Inactive	P869
	Dog Plasma	40 to 40,000 pg/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P966
	Artificial CSF	2 to 800 pg/mL	LC/MS/MS	0.15 mL	None	-20	Madison	Active	P1382
	Göttingen Minipig Plasma	5 to 5000 pg/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P1491
Fentanyl (Norfentanyl)	Mouse Plasma	0.04 to 40 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P637
	Rat Plasma	0.04 to 40 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Madison	Inactive	P823
	Rabbit Plasma	0.04 to 40 ng/mL	LC/MS/MS	0.2 mL	K <sub>2</sub> EDTA	-20	Madison	Inactive	P636
	Human Plasma	5 to 2000 pg/mL	LC/MS/MS	0.15 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1159
Fentanyl (Norfentanyl) (DespropionylFentanyl)	Human Plasma	10 to 500 pg/mL	LC/MS/MS	0.5 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P624



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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Fexofenadine	Human Plasma	0.5 to 500 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	Active	P1365
	Human Urine	0.05 to 10 µg/mL	LC/MS/MS	0.02 mL	None	-20	Madison	Inactive	P746
Fluconazole	Human Plasma	20 to 10,000 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Madison	Active	P791
Fingolimod	Human Whole Blood	0.025 to 10 ng/mL	LC/MS/MS	1.0 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P1224
Fingolimod Phosphate	Human Whole Blood	0.05 to 2.5 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1225
Firocoxib	Dog Plasma	1 to 500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1490
	Dog Plasma	2.5 to 2500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1529
Flucytosine	Human Plasma	50 to 50,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1125
Flunixin	Horse Plasma	10 to 5000 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-70	Madison	Active	P1138
Fluoxetine (Norfluoxetine)	Human Plasma	0.25 to 100 ng/mL	LC/MS/MS	0.2 mL	Na Heparin K <sub>2</sub> EDTA	-20	Richmond Madison	Active	LCMS 52 P1563
Flurbiprofen	Human Plasma	50 to 25,000 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1498
Fluticasone Propionate	Human Plasma	1.0 to 500 pg/mL	LC/MS/MS	1.0 mL	KOx / NaF	-20	Madison	Active	P817

\*Inactive methods may require additional time and/or fees prior to reactivation

\*\*Total = Unconjugated + Conjugated Drug. Unless specifically noted, the free or unconjugated drug is measured.

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Fluticasone Furoate	Human Plasma	0.2 to 40 pg/mL	LC/MS/MS	1.0 mL	KOx / NaF	-20	Madison	Active	P1084
Fluticasone Propionate & Salmeterol	Human Plasma	1 to 200 pg/mL	LC/MS/MS	1.0 mL	KOx / NaF	-20	Madison	Active	P988
	Human Plasma	0.5 to 200 pg/mL	LC/MS/MS	0.5 mL	KOx / NaF	-20	Madison	Active	P1197
Fluvoxamine	Human Plasma	0.5 to 500 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	<b>Inactive</b>	P658
Formoterol	Human Plasma	0.5 to 250 pg/mL	LC/MS/MS	0.5 mL	Li Heparin with Eserine hemisulfate	-20	Madison	Active	P860
	Human Urine	6.0 to 1200 pg/mL	LC/MS/MS	0.1 mL	None	-20	Madison	Active	P883
	Human Plasma	0.5 to 250 pg/mL	LC/MS/MS	0.5 mL	K <sub>3</sub> EDTA with Eserine hemisulfate	-20	Madison	Active	P1296
Furosemide	Human Plasma	5 to 5000 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Richmond	Active	LCMS 317.1
	Human Plasma	5 to 5000 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	Active	P1518
	Human Urine	0.2 to 50 µg/mL	LC/MS/MS	0.2 mL	None	-20	Richmond	Active	LCMS 317
GS331007 & Sofosbuvir	Human Plasma	10 to 5000 ng/mL 5 to 2500 ng/mL	LC/MS/MS	0.05 mL	Na F/KO	-70	Madison	Active	P1300

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Gabapentin	Human Plasma	0.05 to 10 µg/mL	LC/MS/MS	0.2 mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMS 359
	Human Plasma	0.05 to 10 µg/mL	LC/MS/MS	0.2 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P1522
	Human Plasma	50 to 50,000 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Richmond	Active	LCMS 359.3
Galanthamine	Human Plasma	0.1 to 100 ng/mL	LC/MS/MS	0.25 mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMSC 312
Gatifloxacin	Human Plasma	0.025 to 10 µg/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA	-20	Richmond	Inactive	LCMSB 285
Gefitinib	Human Plasma	0.5 to 500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMS 522
Gemfibrozil	Human Plasma	0.05 to 25 µg/mL	HPLC/FL	0.5 mL	Na Heparin	-20	Richmond	Inactive	LC 56
	Human Plasma	0.05 to 50 µg/mL	HPLC/UV	0.5 mL	Na Heparin and EDTA	-20	Madison	Inactive	P115
Glimepiride	Human Plasma	2 to 1000 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMS 266
Glipizide	Human Plasma	1 to 500 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-20	Richmond	Inactive	LCMS 137
Glyburide	Human Plasma	1 to 500 ng/mL	LC/MS/MS	0.25 mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMS 159
Glyburide <i>Lower range for pediatric studies</i>	Human Plasma	0.10 to 50 ng/mL	LC/MS/MS	0.25 mL	K <sub>3</sub> EDTA	-20	Richmond	Inactive	LCMS 159.1
Guaifenesin	Human Plasma	8 to 4000 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Madison	Active	P1172
	Human Plasma	2 to 2000 ng/mL	LC/MS/MS	0.075 mL	Na Heparin	-20	Madison	Active	P973
	Human Plasma	2 to 2000 ng/mL	LC/MS/MS	0.075 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1465
Guaifenesin & Dextromethorphan	Human Plasma	8 to 4000 ng/mL 0.01 to 5 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	Active	P1285



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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Guaifenesin & Codeine & Morphine	Human Plasma	2 to 2000 ng/mL 0.1 to 100 ng/mL 0.2 to 20 ng/mL	LC/MS/MS	0.3 mL	Na Heparin	-20	Madison	Active	P919
Haloperidol	Human Plasma	0.025 to 10 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-70	Richmond	Active	LCMSC 95
Herceptin	Human Serum	0.5 to 200 µg/mL	GYROS	0.25 mL	None	-70	Richmond	Active	ICD 178
Hydrochlorothiazide	Human Plasma	2 to 200 ng/mL	LC/MS/MS	0.25 mL	Na Heparin	-20	Richmond	Active	LCMSD 205.5
	Human Urine	0.1 to 25 µg/mL	LC/MS/MS	0.25 mL	None	-20	Richmond	Active	LCMSD 205.3
Hydrocodone (Hydromorphone)	Human Plasma	0.1 to 100 ng/mL 0.05 to 50 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Richmond Madison	Active	LCMSC 492 P1437
	Rat Plasma	0.2 to 200 ng/mL 0.1 to 100 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMSC 492.1
Hydrocodone (Hydromorphone)	Dog Plasma	10 to 1000 ng/mL 2 to 200 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMSC 492.2
	Rabbit Plasma	0.2 to 200 ng/mL 0.1 to 100 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMSC 492.3
	Mouse Plasma	0.2 to 200 ng/mL 0.1 to 100 ng/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMSC 492.8
Hydrocodone (Hydromorphone)	Human Dialysate	0.02 to 20 ng/mL 0.01 to 10 ng/mL	LC/MS/MS	0.3 mL	None	-20	Richmond	Active	LCMSD 492.5
	Human Urine	10 to 10,000 ng/mL 5 to 5000 ng/mL	LC/MS/MS	0.25 mL	None	-20	Richmond	Active	LCMSC 492.4

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Hydrocodone (Hydromorphone) (Norhydrocodone)	Human Plasma	0.1 to 100 ng/mL 0.05 to 50 ng/mL 0.1 to 100 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 492.6
	Human Urine	10 to 10,000 ng/mL 5 to 5000 ng/mL 10 to 10,000 ng/mL	LC/MS/MS	0.025 mL	None	-20	Richmond	Active	LCMSC 492.7
	Human Plasma	0.1 to 100 ng/mL 0.05 to 50 ng/mL	LC/MS/MS	0.5 mL	K <sub>3</sub> EDTA	-20	Madison	Inactive	P623
	Hamster Plasma	1 to 400 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Madison	Inactive	P659
Hydrocodone & Acetaminophen	Human Plasma	0.1 to 50 ng/mL 100 to 15,000 ng/mL	LC/MS/MS	0.3 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1213
	Human Plasma	0.1 to 50 ng/mL 100 to 15,000 ng/mL	LC/MS/MS	0.15 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1305
Hydrocodone & Acetaminophen & Chlorpheniramine	Human Plasma	0.1 to 50 ng/mL 100 to 50,000 ng/mL 0.25 to 125 ng/mL	LC/MS/MS	0.3 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1066
Ibuprofen	Human Plasma	0.2 to 50 µg/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Richmond Madison	Active	LCMSC 409 P1431
Ibuprofen Enantiomers	Human Plasma	0.1 to 25 µg/mL 0.1 to 25 µg/mL	LC/MS/MS	0.1 mL 0.05 mL	Na Heparin	-20	Richmond Madison	Inactive Active	LCMSB 561 P1609
IFN Gamma	Human Serum	31.3 to 1000 pg/mL	ELISA	0.2 mL	None	-70	Richmond	Inactive	ICD 278
IGF-1	Human Serum	10 to 1000 ng/mL	LC/MS/MS	0.1 mL	None	-70	Richmond	Active	LCMSC 558



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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
IL-1 $\beta$	Human Serum	7.82 to 250 pg/mL	ELISA	0.4 mL	None	-20	Richmond	Inactive	ICD 151
IL-2	Human Serum	62.5 to 2000 pg/mL	ELISA	0.2 mL	None	-20	Richmond	Inactive	ICD 150
IL-4	Human Serum	31.3 to 2000 pg/mL	ELISA	0.1 mL	None	-70	Richmond	Inactive	ICD 277
IL-6	Human Serum	5 to 320 pg/mL	ELISA	0.2 mL	None	-20	Richmond	Inactive	ICD 141
IL-10	Human Serum	10 to 500 pg/mL	ELISA	0.3 mL	None	-20	Richmond	Inactive	ICD 142
Iloperidone (P-88)	Human Plasma	0.01 to 5 ng/mL	LC/MS/MS	0.3 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1158
Imatinib	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1010
Ipilimumab	Human Plasma	1 to 100 $\mu$ g/mL	LC/MS/MS	0.03 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMSF 872
Irbesartan	Human Plasma	2.5 to 2500 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-20	Richmond	Inactive	LCMSB 232
Ipratropium	Human Plasma	1 to 400 pg/mL	LC/MS/MS	0.25 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1476
Isopropamide	Human Plasma	0.05 to 10 ng/mL	LC/MS/MS	0.5 mL	Na Heparin	-20	Madison	Inactive	P409
Itraconazole (2-Hydroxyitraconazole)	Human Plasma	0.5 to 500 ng/mL	LC/MS/MS	0.2 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1079
	Human Plasma	20 to 5000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1374
Ivermectin	Dog Plasma	0.05 to 25 ng/mL	LC/MS/MS	0.2 mL	Na Heparin	-20	Madison	Active	P1254

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Ivermectin B1a	Horse Plasma	0.5 to 50 ng/mL	HPLC/FL	0.5 mL	Na Heparin	-20	Madison	Inactive	P575
	Horse Serum	0.50 to 50 ng/mL 0.84 to 1.68 ng/mL	HPLC/FL	2.0 mL	None	-20	Madison	Inactive	P389
	Pig Plasma	0.50 to 100 ng/mL	HPLC/FL	0.5 mL	Na Heparin	-20	Madison	Inactive	P646
	Cow Plasma	0.50 to 100 ng/mL	HPLC/FL	0.5 mL	Na Heparin	-20	Madison	Inactive	P479
	Dog Plasma	0.50 to 50 ng/mL	HPLC/FL	0.5 mL	Na Heparin	-20	Madison	Inactive	P457
	Dog Plasma	0.10 to 10 ng/mL	HPLC/FL	0.5 mL	Na Heparin	-20	Madison	Inactive	P715
Ivermectin B1b	Horse Plasma	0.10 to 10 ng/mL	HPLC/FL	0.5 mL	Na Heparin	-20	Madison	Inactive	P621
Ketamine (Norketamine)	Human Serum	5 to 5000 ng/mL 2.5 to 2500 ng/mL	LC/MS/MS	0.2 mL	None	-20	Madison	Inactive	P627
	Rabbit Plasma	10 to 10,000 ng/mL 5 to 5000 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	Inactive	P648
	Rat Plasma	0.5 to 500 ng/mL	LC/MS/MS	0.025 mL	Na Heparin	-20	Madison	Active	P1179
	Human Plasma	0.5 to 500 ng/mL	LC/MS/MS	0.2 mL	Na Heparin	-20	Madison	Inactive	P663
S-Ketamine & R-Ketamine S-Norketamine & R-Norketamine	Cat Plasma	20 to 8000 ng/mL 10 to 4000 ng/mL	LC/MS/MS	50 µL	Na Heparin	-20	Madison	Inactive	P703
	Rat Plasma	5 to 1000 ng/mL 1 to 200 ng/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1163

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Ketoconazole	Human Plasma	0.1 to 20 µg/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Richmond	Inactive	LCMSB 202
	Human Plasma	0.1 to 20 µg/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-20	Richmond	Inactive	LCMSB 202.1
	Human Plasma	25 to 2500 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Richmond	Inactive	LCMSB 202.2
Ketoprofen	Human Plasma	1 to 500 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Richmond	Inactive	LCMSB 162
	Human Plasma	0.1 to 50 ng/mL	LC/MS/MS	0.4 mL	Na Heparin	-20	Madison	Active	P747
	Minipig Plasma	0.1 to 50 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	Active	P821
Ketoprofen, and Total**	Human Plasma	1.0 to 1000 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Madison	Active	P767
	Human Urine	5 to 5000 ng/mL	LC/MS/MS	0.025 mL	None	-20	Madison	Active	P768
Ketoprofen Enantiomers	Human Plasma	0.5 to 250 ng/mL	LC/MS/MS	0.2 mL	Na Heparin	-20	Madison	Active	P782
Ketorolac	Human Plasma	0.025 to 25 µg/mL	HPLC/UV	0.25 mL	Na Heparin	-20	Richmond	Inactive	LC 207
Lacosamide	Human Plasma	0.1 to 20 µg/mL	LC/MS/MS	0.05mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1134
Lamivudine (3TC) & Abacavir	Human Plasma	2.5 to 2500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1165
Lamotrigine See Cocktail Assay "Epilepsy"	Human Plasma	0.1 to 20 µg/mL	LC/MS/MS	0.1 mL	Na Heparin	-70	Madison	Inactive	P837
Lansoprazole	Human Plasma	2 to 2000 ng/mL	LC/MS/MS	0.05mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMS 178
	Human Plasma	2 to 2000 ng/mL	LC/MS/MS	0.05mL	K <sub>3</sub> EDTA	-20	Madison	Active	P896
Laropiprant	Human Plasma	0.01 to 10 µM	LC/MS/MS	0.15 mL	Na Heparin	-20	Madison	Active	P1124

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Ledipasvir	Human Plasma	0.5 to 200 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1393
Letrozole	Human Plasma	0.5 to 200 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1287
Leucovorin Diastereomers (6S-5-Methyltetrahydrofolic Acid Diastereomers)	Human Serum requires 1 mg/mL ascorbic acid treatment	0.5 to 250 µg/mL 0.1 to 50 µg/mL	LC/MS/MS	0.05 mL	None	-70	Richmond	<b>Inactive</b>	LCMSC 387
Leuprolide	Human Serum	0.025 to 25 ng/mL	LC/MS/MS	0.2 mL	None	-20	Richmond	Active	LCMSC 245.1
Levetiracetam	Human Plasma	0.05 to 50 µg/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P811
Levodopa & Carbidopa	Human Plasma	5 to 2500 ng/mL 0.5 to 250 ng/mL	LC/MS/MS	0.2 mL	K <sub>3</sub> EDTA	-70	Madison	Active	P838
	Rat Plasma	50 to 10,000 ng/mL 25 to 5000 ng/mL	LC/MS/MS	0.02 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1420
Levodopa & Carbidopa (3-O-MethylDopa)	Human Plasma	10 to 5000 ng/mL 10 to 5000 ng/mL 400 to 25,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1571
Levofloxacin	Human Serum	25 to 15,000 ng/mL	HPLC/UV	0.5 mL	None	-20	Richmond	<b>Inactive</b>	LC 287
	African Green Monkey Plasma	0.03 to 15 µg/mL	HPLC/UV	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond	<b>Inactive</b>	LC 287.1
	Rabbit Plasma	0.1 to 50 µg/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-20	Richmond	<b>Inactive</b>	LCMSB 554

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Lidocaine	Pig Plasma	2 to 500 ng/mL	HPLC/UV	0.25 mL	Na Heparin	-20	Madison	Inactive	P634
	Rat Plasma	1 to 1000 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Madison	Inactive	P667
	Human Plasma	0.2 to 200 ng/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P871
	Hanford Minipig Plasma	0.5 to 500 ng/mL	LC/MS/MS	0.03 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1504
Linagliptin	Human Plasma	0.05 to 50 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 642
Liraglutide	Human Plasma	1 to 500 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-70	Richmond Madison	Active	LCMSD 631 P1623
Lisdexamfetamine (d-amphetamine)	Human Plasma	0.1 to 100 ng/mL 0.2 to 200 ng/mL	LC/MS/MS	0.4 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1051
Lisinopril	Human Plasma	0.5 to 400 ng/mL	LC/MS/MS	0.2 mL	Na Heparin	-20	Madison	Active	P1206
	Human Urine	25 to 25,000 ng/mL	LC/MS/MS	0.025 mL	None	-20	Madison	Inactive	P694
	Rat Plasma	1.0 to 1000 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	Inactive	P673
Loperamide	Human Plasma	10 to 10,000 pg/mL	LC/MS/MS	0.5 mL	Na Heparin	-20	Madison	Inactive	P557
	Human Plasma	10 to 10,000 pg/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Richmond	Inactive	LCMSC 310
Lopinavir See Cocktail Assay "Antiviral"	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-20	Madison Richmond	Active	P1002
Loratadine (Descarboethoxyloratadine) (3-OHDescarboethoxyloratadine)	Human Plasma	0.025 to 10 ng/mL	LC/MS/MS	0.25 mL	Na Heparin	-20	Richmond Madison	Active	LCMS 188.1 P1391
Lorazepam	Human Plasma	0.5 to 50 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Richmond	Active	LCMSC 142

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Lorazepam, Total**	Human Plasma	2.5 to 500 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Richmond	Inactive	LCMSB 294
Losartan (Acid Metabolite)	Human Plasma	0.5 to 500 ng/mL	LC/MS/MS	0.15 mL	Na Heparin	-20	Richmond	Active	LCMSC 208
	Human Urine	5 to 2000 ng/mL 2 to 2000 ng/mL	LC/MS/MS	0.1 mL	None	-20	Richmond	Inactive	LCMSC 208.1
	Human Urine	2 to 2000 ng/mL	LC/MS/MS	0.05 mL	None	-20	Madison	Active	P1556
Lovastatin (Lovastatin Acid)	Human Plasma	0.05 to 12.5 ng/mL 0.1 to 25 ng/mL	LC/MS/MS	0.25 mL	Na Heparin	-70	Richmond	Inactive	LCMS 267
	Human Plasma	0.05 to 50 ng/mL	LC/MS/MS	0.25 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1240
Lurasidone	Human Plasma	0.1 to 100 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1221
Meclocycline	Human Plasma	25 to 10,000 ng/mL	HPLC/UV	0.2 mL	K <sub>2</sub> EDTA	-20	Richmond	Inactive	LC 337
Medroxyprogesterone Acetate	Human Serum	0.02 to 5 ng/mL	LC/MS/MS	0.25 mL	None	-20	Richmond	Active	LCMSC 198
	Rabbit Plasma	0.025 to 5 ng/mL	LC/MS/MS	0.2 mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMSD 198.1
Memantine	Human Plasma	0.5 to 50 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1200
	Human Plasma	2 to 1000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1093
Memantine & Donepezil	Human Plasma	0.1 to 50 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1258
Mesalamine (N-acetyl-5-aminosalicylic acid)	Human Plasma	2 to 1000 ng/mL 5 to 2500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1191



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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Metformin	Human Plasma	2 to 1000 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Richmond	Active	LCMS 153
	Human Plasma	2 to 2000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond Madison	Inactive Active	LCMS 153.5 P1350
	Human Urine	10 to 10,000 µg/mL	HPLC/UV	0.05 mL	None	-20	Richmond	Inactive	LC 251.1
	Dog Plasma	1 to 1000 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-20	Richmond	Inactive	LCMSB 153.4
Methadone	Human Plasma	0.1 to 50 ng/mL	LC/MS/MS	0.2 mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMS 323
	Human Plasma	2 to 1000 ng/mL	LC/MS/MS	0.025 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P1414
	Human Urine	25 to 1000 ng/mL	HPLC/UV	1.0 mL	None	-20	Richmond	Inactive	LC 238.2
Methadone Enantiomers	Human Plasma	5 to 1000 ng/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMSC 323.1
	Human Plasma	0.1 to 50 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMSC 323.2
Methotrexate (7-Hydroxymethotrexate)	Human Plasma	1 to 1000 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Richmond Madison	Active	LCMSC 380.1 P1322
	Human Urine	0.05 to 25 µg/mL	LC/MS/MS	0.05 mL	None	-20	Richmond	Inactive	LCMSC 380.2
Methylphenidate	Human Plasma	0.25 to 25 ng/mL	LC/MS/MS	0.10 mL	Na Heparin	-20	Richmond	Inactive	LCMSB 187
	Human Plasma	0.1 to 100 ng/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA	-70	Richmond	Active	LCMS 230.1
	Human Plasma	0.1 to 30 ng/mL	LC/MS/MS	0.1 mL	Na Heparin or K <sub>2</sub> EDTA	-20	Madison	Inactive	P689
Methylphenidate (Ritalinic Acid)	Beagle Plasma	0.10 to 100 ng/mL 2.0 to 2000 ng/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMS 230

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Methylphenidate Enantiomers (Ritalinic Acid Enantiomers)	Human Plasma	0.05 to 50 ng/mL (D) 0.01 to 10 ng/mL (L) 1.0 to 1000 ng/mL (D) 1.0 to 1000 ng/mL (L)	LC/MS/MS	0.2 mL	Na Heparin	-20	Madison	Inactive	P779
Methylphenidate Enantiomers	Human Plasma	0.05 to 50 ng/mL (D) 0.01 to 10 ng/mL (L)	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P1234
Methylprednisone & Prednisone (Prednisolone)	Human Plasma	1 to 1000 ng/mL 0.5 to 500 ng/mL 0.5 to 500 ng/mL	LC/MS/MS	0.3 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1149
Methyltestosterone	Human Plasma	5 to 30,000 pg/mL	LC/MS/MS	0.5 mL	K <sub>3</sub> EDTA	-20	Richmond	Inactive	LCMSC 349
	Human Plasma	0.05 to 25 ng/mL	LC/MS/MS	0.5 mL	K <sub>3</sub> EDTA	-20	Richmond	Inactive	LCMSC 242
Metoprolol	Human Plasma	5 to 1000 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Madison	Active	P940
	Human Plasma	0.2 to 200 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	Active	P1255
Metoprolol ( $\alpha$ -Hydroxymetoprolol)	Human Plasma	0.2 to 200 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Madison	Active	P1335
Metronidazole (1-Hydroxymetronidazole)	Human Plasma	10 to 1000 ng/mL	HPLC/UV	0.5 mL	Na Heparin	-20	Madison	Inactive	P686
Mevalonic Acid	Human Plasma	0.5 to 20 ng/mL	LC/MS/MS	0.5 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P758
	Human Urine	25 to 1000 ng/mL	LC/MS/MS	0.25 mL	None	-20	Madison	Inactive	P759

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Midazolam (1-Hydroxy midazolam)	Human Plasma	0.1 to 100 ng/mL	LC/MS/MS	0.3 mL	Na Heparin	-20	Richmond	Active	LCMSC 97
	Human Plasma	0.1 to 100 ng/mL	LC/MS/MS	0.15 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1626
	Human Urine	0.05 to 50 ng/mL 1 to 1000 ng/mL	LC/MS/MS	0.2 mL	None	-20	Madison	Inactive	P678
	Human Urine	0.05 to 50 ng/mL 2 to 2000 ng/mL	LC/MS/MS	0.2 mL	None	-20	Madison	Inactive	P870
(1-HydroxyMidazolam, Total**)	Human Urine	1 to 1000 ng/mL	LC/MS/MS	0.2 mL	None	-20	Richmond	Inactive	LCMS 228
Milbemycin Oxime (A3) (A4)	Cat Plasma	2 to 2000 ng/mL 4 to 4000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1303
	Dog Plasma	2 to 2000 ng/mL 4 to 4000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1318
Milnacipran	Human Plasma	1 to 1000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1081
Minocycline	Human Plasma	0.02 to 10 µg/mL	HPLC/UV	0.5 mL	Na Heparin	-20	Richmond	Inactive	LC 63
	Human Serum	0.02 to 10 µg/mL	HPLC/UV	0.5 mL	None	-20	Richmond	Inactive	LC 63.1
	Human Saliva	0.02 to 10 µg/mL	HPLC/UV	0.5 mL	None	-20	Richmond	Inactive	LC 63.5
	Human Crevicular Fluid	10 to 2000 ng/µL	HPLC/UV	1.0 µL	None	-20	Richmond	Inactive	LC 360
Mirtazapine	Human Plasma	0.05 to 100 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Richmond	Inactive	LCMS 145

## LIST OF VALIDATED METHODS September 2018

Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
MMAE	Cyno Monkey Plasma	10 to 2000 pg/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMSD 844
	Human Plasma	10 to 2000 pg/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMSX 844.1
	Rat Plasma	10 to 2000 pg/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMSX 844.2
Mometasone Furoate	Human Plasma	0.25 to 25 pg/mL	LC/MS/MS	1.0 mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMSD 345.1
	Dog Plasma	10 to 1000 pg/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSD 345.4
	Rat Plasma	10 to 1000 pg/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSD 345.3
Montelukast	Human Plasma	5 to 1000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-80	Richmond	Active	LCMSC 385
Morphine (Morphine-3β-D-glucuronide) (Morphine-6β-D-glucuronide)	Human Plasma	0.1 to 25 ng/mL 2 to 500 ng/mL 0.5 to 125 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1286
	Human Plasma	0.1 to 50 ng/mL 3 to 1500 ng/mL 1 to 500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1642
Morphine (Morphine-3β-glucuronide) (Morphine-6β-glucuronide)	Human Plasma	0.5 to 50 ng/mL 10 to 1000 ng/mL 2 to 200 ng/mL	LC/MS/MS	0.25 mL	Na Heparin	-20	Richmond	Inactive	LCMS 454
Morphine (Morphine-6β-D-glucuronide)	Human Plasma	0.3 to 120 ng/mL 0.9 to 360 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1294
Morphine (Morphine-3β-glucuronide) (Morphine-6β-glucuronide) Codeine	Human Plasma	0.2 to 20 ng/mL 2 to 200 ng/mL 0.5 to 50 ng/mL 1 to 100 ng/mL	LC/MS/MS	0.25 mL	Na Heparin	-20	Richmond	Active	LCMSC 396

\*Inactive methods may require additional time and/or fees prior to reactivation

\*\*Total = Unconjugated + Conjugated Drug. Unless specifically noted, the free or unconjugated drug is measured.

## LIST OF VALIDATED METHODS September 2018

Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Morphine & Codeine & Guafenesin	Human Plasma	0.2 to 20 ng/mL 0.1 to 100 ng/mL 2 to 2000 ng/mL	LC/MS/MS	0.3 mL	Na Heparin	-20	Madison	Active	P919
Moxifloxacin	Human Plasma	25 to 5000 ng/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA	-20	Richmond Madison	<b>Inactive</b> Active	LCMSB 276 P1317
Naloxone & Buprenorphine (Norbuprenorphine)	Human Plasma	2 to 1000 pg/mL 20 to 10,000 pg/mL 20 to 10,000 pg/mL	LC/MS/MS	0.5 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P1160
Naloxone, Total	Human Plasma	0.1 to 100 ng/mL	LC/MS/MS	0.2 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P1096
Naltrexone 6β-naltrexol & Oxycodone	Human Plasma	0.1 to 100 ng/mL 0.5 to 500 ng/mL 0.1 to 100 ng/mL	LC/MS/MS	0.15 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1193
Naltrexone 6β-naltrexol	Human Plasma	0.01 to 2 ng/mL 0.1 to 20 ng/mL	LC/MS/MS	0.5 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1230
	Human Plasma	5 to 5000 pg/mL	LC/MS/MS	0.2 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1404
	Göttingen Minipig Plasma	5 to 1000 pg/mL 5 to 100 pg/mL	LC/MS/MS	0.2 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P1493
Naproxen	Human Plasma	0.1 to 100 µg/mL	LC/MS/MS	0.05 mL	Na Heparin Li Heparin	-20	Richmond Madison	Active	LCMS 486 P1618
Navelbine aka Vinorelbine	Human Plasma	2 to 500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMS 539
Nevirapine	Human Plasma	25 to 10,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA	-20	Richmond Madison	Active	LCMS 250 P1330
Niacin <i>aka Vitamin B3, or nicotinic acid</i> (Nicotinuric acid) aka NUA	Human Plasma	2 to 2000 ng/mL	LC/MS/MS	0.25mL	Na Heparin	-70	Richmond	Active	LCMS 264

## LIST OF VALIDATED METHODS September 2018

Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Niacin aka Vitamin B3, or nicotinic acid (Nicotinuric acid) aka NUA	Human Urine	0.02 to 20 µg/mL 0.2 to 200 µg/mL	LC/MS/MS	0.1 mL	None	-20	Richmond	Inactive	LCMSB 264.1
(1-Methyl-Nicotinamide) aka <i>NMA</i> (N-Methyl-2-Pyridone-5-carboxamide) aka <i>2PY</i>	Human Urine	0.5 to 250 µg/mL 2.5 to 250 µg/mL	LC/MS/MS	0.05 mL	None	-20	Richmond	Inactive	LCMS 274.1
(1-Methyl-Nicotinamide) aka <i>NMA</i> (N-Methyl-2-Pyridone-5-carboxamide) aka <i>2PY</i>	Human Plasma	0.1 to 10 µg/mL 0.2 to 20 µg/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Richmond	Inactive	LCMSB 274
(1-Methyl-Nicotinamide) aka <i>NMA</i> (N-Methyl-2-Pyridone-5-carboxamide) aka <i>2PY</i>	Human Plasma	0.1 to 10 µg/mL 0.2 to 20 µg/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Richmond	Inactive	LCMSB 274.2
(1-Methyl-Nicotinamide) aka <i>NMA</i> (N-Methyl-2-Pyridone-5-carboxamide) aka <i>2PY</i> , (N-Methyl-4-Pyridone-3-carboxamide) aka <i>4PY</i>	Rat Plasma	0.1 to 10 µg/mL 0.2 to 20 µg/mL 0.2 to 20 µg/mL	LC/MS/MS	0.025 mL	Li Heparin	-20	Richmond	Active	LCMSC 274.5
(1-Methyl-Nicotinamide) aka <i>NMA</i> (N-Methyl-2-Pyridone-5-carboxamide) aka <i>2PY</i> , (N-Methyl-4-Pyridone-3-carboxamide) aka <i>4PY</i>	Human Urine	1 to 250 µg/mL 2 to 500 µg/mL 2 to 500 µg/mL	LC/MS/MS	0.05 mL	None	-20	Richmond	Active	LCMS 274.6
Nicotine (Cotinine)	Human Plasma	0.5 to 100 ng/mL 2.5 to 500 ng/mL	LC/MS/MS	0.5 mL	Na Heparin	-20	Madison	Inactive	P538
Nilotinib	Human Plasma	2 to 2000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1011
Nizatidine (N-Desmethylnizatidine)	Human Plasma	5 to 5000 ng/mL	HPLC/UV	1.0 mL	Na Heparin	-20	Richmond	Inactive	LC 264

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Norelgestromin <i>aka 17-desacetyl norgestimate</i>	Human Plasma	0.02 to 10 ng/mL	LC/MS/MS	0.5 mL	KOx / NaF	-70	Richmond	Active	LCMSC 372
Norethindrone & 17α-Ethinyl Estradiol (EE)	Human Plasma	50 to 25,000 pg/mL 2 to 500 pg/mL	LC/MS/MS	0.5 mL	Na Heparin	-20	Richmond	Active	LCMSC 255
Norgestrel & 17α-Ethinyl Estradiol (EE)	Human Plasma	50 to 25,000 pg/mL 2 to 500 pg/mL	LC/MS/MS	0.5 mL 0.25 mL	KOx / NaF	-70	Richmond Madison	Active	LCMSC 256 P1627
Octreotide	Human Plasma	0.025 to 25 ng/mL	LC/MS/MS	0.2 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 296
	Human Serum	0.0286 to 28.6 ng/mL	LC/MS/MS	0.2 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 296.4
	Monkey Plasma with Aprotinin	5 to 250 ng/mL	LC/MS/MS	0.2 mL	K <sub>3</sub> EDTA	-70	Richmond	Active	LCMSC 296.2
	Monkey Plasma with Aprotinin	0.1 to 25 ng/mL	LC/MS/MS	0.2 mL	K <sub>3</sub> EDTA	-70	Richmond	Active	LCMSC 296.1
	Rabbit Plasma	1 to 100 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-70	Richmond	Active	LCMSC 296.3
Olanzapine (Desmethyloanzapine)	Human Plasma	0.025 to 25 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Richmond	<b>Inactive</b>	LCMS 84
Olopatadine	Human Plasma	0.05 to 60 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 697
Omeprazole	Human Plasma	1 to 1000 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Richmond	<b>Inactive</b>	LCMSB 131
	Horse Plasma	1 to 1000 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Madison	Active	P1025
Omeprazole (5-Hydroxyomeprazole) (Omeprazole sulphone)	Human Plasma	1 to 1000 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	<b>Inactive</b>	P749

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Omeprazole (5-Hydroxyomeprazole)	Human Plasma	1 to 1000 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-70	Richmond	Active	LCMSC 131.2
	Human Plasma	1 to 1000 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Madison	Active	P1009
Omeprazole Acetylsalicylic Acid (Salicylic Acid)	Human Plasma	4 to 2000 ng/mL 20 to 10,000 ng/mL 100 to 50,000 ng/mL	LC/MS/MS	0.075 mL	NaF / KOx	-70	Madison	Active	P1353
Ondansetron	Human Plasma	0.5 to 250 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA / K <sub>2</sub> EDTA	-20	Madison	Active	P1434
Oxaprozin	Human Plasma	0.5 to 500 µg/mL	HPLC/UV	0.1 mL	Na Heparin	-20	Richmond	Inactive	LC243
Oxcarbazepine	Human Plasma	0.1 to 5 µg/mL	LC/MS/MS	0.1 mL	Na Heparin	-70	Madison	Active	P850
(Monohydroxyoxcarbaz- epine <i>aka MHD</i> )	Human Plasma	1 to 50 µg/mL	LC/MS/MS	0.05 mL	Na Heparin	-70	Madison	Inactive	P886
Oxybutynin Enantiomers (Desethyloxybutynin enantiomers)	Human Plasma	0.5 to 200 ng/mL	LC/MS/MS	0.2 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMS 411
Oxybutynin	Human Plasma	0.05 to 25 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1301
Oxycodone	Human Plasma	0.1 to 100 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1140
Oxycodone (noroxycodone) (oxymorphone) (noroxymorphone)	Human Plasma	0.02 to 10 ng/mL 0.02 to 10 ng/mL 0.02 to 10 ng/mL 0.05 to 10 ng/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P1227
Oxycodone & Acetaminophen	Human Plasma	0.1 to 100 ng/mL 100 to 15,000 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1310



## LIST OF VALIDATED METHODS September 2018

Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Oxycodone & Naltrexone 6β-naltrexol	Human Plasma	0.1 to 100 ng/mL 0.5 to 500 ng/mL	LC/MS/MS	0.15 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1193
Oxymorphone	Human Plasma	10 to 1000 pg/mL	LC/MS/MS	0.5 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P820
Oxymorphone (6-OH-oxymorphone)	Human Plasma	0.025 to 5 ng/mL 0.01 to 2 ng/mL	LC/MS/MS	0.25 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1148
	Human Plasma	0.1 to 10 ng/mL	LC/MS/MS	0.25 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P930
Paclitaxel (Taxol ®)	Human Plasma	0.1 to 100 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMSC 163.2
	Human Plasma	10 to 5000 ng/mL	LC/MS/MS	0.25 mL	Na Heparin	-70	Richmond	Active	LCMSC 163.4
Paclitaxel (Taxol ®), Unbound	Human Plasma Ultrafiltrate	1 to 1000 ng/mL	LC/MS/MS	0.35 mL	Na Heparin	-70	Richmond	Active	LCMSC 637.3
Paclitaxel (Taxol ®), Total**	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.25 mL	Na Heparin	-70	Richmond	Active	LCMSC 637.1
Paliperidone <i>Aka 9-hydroxyrisperidone</i>	Human Plasma	0.1 to 60 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1019
Paroxetine	Human Plasma	0.25 to 50 ng/mL	LC/MS/MS	0.2 mL	Na Heparin	-20	Richmond	Active	LCMS 161
	Human Plasma	0.25 to 50 ng/mL	LC/MS/MS	0.2 mL	Na Heparin K <sub>3</sub> EDTA	-20	Madison	Active	P776
Pazopanib	Human Plasma	1 to 500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1101
Pemoline	Human Plasma	25 to 5000 ng/mL	HPLC/UV	0.2 mL	Na Heparin	-20	Richmond	Inactive	LC258
Pentoxifylline (Hydroxypentifylline) (Carboxypropylpentifylline)	Human Plasma	5 to 1000 ng/mL 10 to 2000 ng/mL 10 to 2000 ng/mL	HPLC/UV	0.5 mL	Na Heparin	-20	Madison	Inactive	P348



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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Perampanel	Human Plasma	2 to 2000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1299
Phenethylamine	Human Urine	1.13 to 501 ng/mL	LC/MS/MS	0.2 mL	None	-20	Madison	Inactive	P655
Phenobarbital See Cocktail Assay "Epilepsy"	Human Plasma	0.1 to 50 µg/mL	LC/MS/MS	0.1 mL	Na Heparin	-70	Madison	Inactive	P837
Phenteramine & Topiramate	Human Plasma	0.1 to 100 ng/mL 5 to 5000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1194
Phenylbutazone	Horse Plasma	0.1 to 40 µg/mL	HPLC/UV	0.25 mL	Na Heparin	-20	Madison	Inactive	P554
Phenylephrine, Total**	Human Plasma	5 to 1000 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-70	Madison	Inactive	P806
	Human Plasma	1 to 1000 ng/mL	LC/MS/MS	0.05 mL	Li Heparin	-70	Richmond Madison	Inactive Active	LCMS 257
	Human Urine	100 to 5000 ng/mL	LC/MS/MS	0.05 mL	None	-70	Madison	Active	P958
Phenylephrine (Phenylephrine Glucuronide)	Human Urine	2 to 200 ng/mL	LC/MS/MS	0.2 mL	None	-70	Madison	Active	P956
(3-Hydroxymandelic acid)	Human Urine	100 to 5000 ng/mL	LC/MS/MS	0.05 mL	None	-70	Madison	Inactive	P957
Phenylephrine	Human Plasma	10 to 2500 pg/mL	LC/MS/MS	0.25 mL	Li Heparin	-70	Richmond	Active	LCMSC 392.1
	Human Plasma	10 to 2500 pg/mL	LC/MS/MS	0.25 mL	K <sub>3</sub> EDTA	-70	Madison	Active	P898
	Human Plasma	10 to 2500 pg/mL	LC/MS/MS	0.15 mL	Li Heparin	-70	Madison	Active	P1436

\*Inactive methods may require additional time and/or fees prior to reactivation

\*\*Total = Unconjugated + Conjugated Drug. Unless specifically noted, the free or unconjugated drug is measured.

**Shaded entries are NEW to our list**

## LIST OF VALIDATED METHODS September 2018

Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Phenylpropanolamine	Human Plasma	5 to 1000 ng/mL	HPLC/UV	0.5 mL	Na Heparin	-20	Richmond	Inactive	LC 181
	Human Plasma	5 to 500 ng/mL	HPLC/UV	1.0 mL	EDTA	-20	Madison	Inactive	P002
Phenytoin, Total**	Human Plasma	20 to 5000 ng/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-20	Richmond	Inactive	LCMSB 418
	Human Plasma	20 to 10,000 ng/mL	LC/MS/MS	0.025 mL	K <sub>3</sub> EDTA	-20	Richmond	Inactive	LCMSB 418.1
	Human Plasma	20 to 10,000 ng/mL	LC/MS/MS	0.025 mL	Na Heparin	-20	Richmond	Active	LCMSC 418.2
Phenytoin Phenytoin, Total **	Human Plasma	0.05 to 15 µg/mL 0.1 to 30 µg/mL	LC/MS/MS	0.05 mL 0.025 mL	K <sub>2</sub> EDTA	-20	Madison	Inactive	P639
(5-Hydroxyphenytoin)	Human Plasma	0.1 to 20 µg/mL	HPLC/UV	1.0 mL	Na Heparin	-20	Madison	Inactive	P281
Phenytoin (5-Hydroxyphenytoin)	Human Urine	0.1 to 40 µg/mL	HPLC/UV	0.5 mL	None	-20	Madison	Inactive	P642
(5-Hydroxyphenytoin), Total**	Human Urine	1 to 200 µg/mL	HPLC/UV	0.05 mL	None	-20	Madison	Inactive	P643
Pioglitazone	Human Plasma	25 to 2500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1085
Pioglitazone MIII, MIV Pioglitazone	Human Plasma	1 to 1000 ng/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1596
Pioglitazone Keto Pioglitazone (MIII), Hydroxy Pioglitazone (MIV)	Human Plasma	25 to 2500 ng/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1215

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Pitavastatin (Pitavastatin Lactone)	Human Plasma	1 to 200 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1187
	Dog Plasma	1 to 200 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1503
	Rat Plasma	1 to 200 ng/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1545
Pravastatin	Human Plasma	0.5 to 250 ng/mL	LC/MS/MS	0.25 mL	Na Heparin	-20	Richmond	<b>Inactive</b>	LCMS 47
Praziquantel	Dog Plasma	10 to 4000 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Madison	Active	P989
	Dog Plasma	2 to 2000 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Madison	Active	P1065
	Cat Plasma	10 to 4000 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Madison	Active	P831
Prednisone (Prednisolone)	Human Plasma	0.5 to 1000 ng/mL	LC/MS/MS	0.3 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P955
	Rat Plasma	0.25 to 250 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P984
Prednisone & Methylprednisolone (Prednisolone)	Human Plasma	0.5 to 500 ng/mL 1 to 1000 ng/mL 0.5 to 500 ng/mL	LC/MS/MS	0.3 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1149
Pregabalin	Human Plasma	20 to 20,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond Madison	Active	LCMSC 487 P1392
	Human Plasma	20 to 10,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1402
Procainamide (N-Acetylprocainamide)	Human Plasma	0.025 to 10 µg/mL	HPLC/UV	0.25 mL	Na Heparin	-20	Richmond	<b>Inactive</b>	LC 306

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Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Progesterone	Human Plasma	0.05 to 50 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMSC 431
	Rabbit Plasma	0.5 to 50 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMSC 431.1
Proguanil	Human Plasma	0.5 to 500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMS 530
Propranolol	Human Plasma	1 to 600 ng/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA	-70	Madison	Active	P1544
Propranolol (4-Hydroxypropranolol)	Human Plasma with Ascorbic Acid	0.5 to 250 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-70	Richmond	<b>Inactive</b>	LCMSB 191
	Human Urine with Ascorbic Acid	1 to 250 ng/mL	LC/MS/MS	0.25 mL	None	-70	Richmond	<b>Inactive</b>	LCMSB 191.1
Propranolol, Total** (4-Hydroxypropranolol)	Human Plasma	2 to 600 ng/mL	LC/MS/MS	0.25 mL	Na Heparin	-70	Richmond	<b>Inactive</b>	LCMSB 281.2
	Human Plasma	2 to 600 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-70	Richmond	Active	LCMS 281.3
	Human Plasma	2 to 600 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-70	Madison	Active	P1520
Pseudoephedrine	Human Plasma	2.5 to 500 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Richmond	<b>Inactive</b>	LCMSB 201
	Human Plasma	2 to 2500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1470
Pseudoephedrine & Dextromethorphan	Human Plasma	0.8 to 400 ng/mL 10 to 5000 pg/mL	LC/MS/MS	0.5 mL	Na Heparin	-20	Madison	Active	P617
Pseudoephedrine & Dextromethorphan (Dextrorphan)	Human Plasma	2.50 to 2500 ng/mL 0.200 to 200 ng/mL 2.50 to 2500 ng/mL	LC/MS/MS	0.025 mL	Na Heparin	-20	Richmond	Active	LCMSC 690



## LIST OF VALIDATED METHODS September 2018

Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Quetiapine	Human Plasma	1 to 1000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond	Inactive	LCMSB 430
Quinidine	Human Plasma	25 to 5000 ng/mL	HPLC/FL	0.5 mL	Na Heparin	-20	Richmond	Inactive	LC 330.1
Raltegravir See "Cocktail Assay Antiviral"	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-20	Madison Richmond	Active	P1002
Raltegravir & Ritonavir	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1087
Ramipril (Ramiprilat)	Human Plasma	0.05 to 50 ng/mL	LC/MS/MS	0.25 mL	K <sub>3</sub> EDTA	-70	Richmond	Inactive	LCMS 311
Ranitidine	Human Plasma	2.5 to 2500 ng/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA	-20	Madison	Inactive	P873
Ranolazine	Human Plasma	2 to 2000 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P934
Ranolazine (RS-94827 Metabolite)	Human Plasma	2 to 2000 ng/mL	LC/MS/MS	0.25 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1015
Repaglinide	Human Plasma	0.2 to 200 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMS 460
	Human Plasma	0.2 to 200 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1510
Ribavirin	Human Plasma	5 to 5000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMS 510
Rifabutin (25-O-Desacetylriofabutin)	Human Plasma	2 to 800 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P587
Rifampin	Human Plasma	0.1 to 10 µg/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Madison	Active	P941
Rilpivirine (E-isomeric form)	Human Plasma	0.5 to 250 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Madison	Active	P1496



## LIST OF VALIDATED METHODS September 2018

Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Risperidone (9-Hydroxyrisperidone)	Human Plasma	0.1 to 60 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1019
	Human Plasma	0.1 to 60 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	Active	P1411
	Human Serum	0.1 to 30 ng/mL	LC/MS/MS	1.0 mL	None	-20	Madison	Inactive	P361
	Human Urine	1 to 300 ng/mL	LC/MS/MS	0.2 mL	None	-20	Madison	Active	P1034
Ritonavir	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.05 mL	Na Heparin	-70	Richmond	Inactive	LCMS 210.2
Ritonavir See Cocktail Assay "Antiviral"	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-20	Madison Richmond	Active	P1002
Ritonavir & Atazanavir	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA K <sub>2</sub> EDTA	-20	Madison Richmond	Active	P1012 LCMSC 210.4
Ritonavir & Etravirine	Human Plasma	10 to 10,000 ng/mL 0.5 to 500 ng/mL	LC/MS/MS	0.2 mL	K <sub>2</sub> EDTA	-20	Madison Richmond	Active	P1031
Ritonavir & Tipranavir	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1020
Ritonavir & Raltegravir	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1087

\*Inactive methods may require additional time and/or fees prior to reactivation

\*\*Total = Unconjugated + Conjugated Drug. Unless specifically noted, the free or unconjugated drug is measured.



## LIST OF VALIDATED METHODS September 2018

Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Rivaroxaban	Human Plasma	0.5 to 500 ng/mL	LC/MS/MS	0.25 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1014
	Human Plasma	0.5 to 500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1488
	Cyno Monkey Plasma	1 to 500 ng/mL	LC/MS/MS	0.05 mL	Na Citrate	-20	Madison	Active	P1110
Rizatriptan	Human Plasma	0.2 to 200 ng/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P845
Rivastigmine	Human Plasma	0.2 to 20 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1162
Roflumilast (Roflumilast N-Oxide)	Human Plasma	0.05 to 25 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSD 664
Ropinirole	Human Plasma	10 to 5000 pg/mL	LC/MS/MS	0.2 mL	Na Heparin	-20	Madison	Inactive	P736
	Minipig Plasma	10 to 5000 pg/mL	LC/MS/MS	0.2 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P1080
Ropinirole N-Despropylropinirole	Human Plasma	10 to 5000 pg/mL	LC/MS/MS	0.2 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1088
Ropinirole N-Despropylropinirole	Human Plasma	0.03 to 30 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1139
Rosiglitazone (N-Desmethylrosiglitazone)	Human Plasma	1 to 500 ng/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMS 322.1
Rosiglitazone	Human Plasma	2 to 1000 ng/mL	LC/MS/MS	0.05 mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMS 322
	Rat Plasma	2 to 1000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMS 322.2
Rosuvastatin (N-Desmethylrosuvastatin)	Human Plasma	0.1 to 100 ng/mL 0.05 to 50 ng/mL	LC/MS/MS	0.25 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P922
	Human Plasma	0.1 to 100 ng/mL 0.05 to 50 ng/mL	LC/MS/MS	0.25 mL	K <sub>3</sub> EDTA	-70	Richmond	Active	LCMS 393.3



## LIST OF VALIDATED METHODS September 2018

Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Rotigotine	Human Plasma	2 to 1000 pg/mL	LC/MS/MS	0.2 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1209
Rufinamide	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1136
Ruxolitinib	Human Plasma	1 to 500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1302
Acetylsalicylic Acid (Salicylic Acid)	Human Plasma	0.02 to 10 µg/mL 0.1 to 50 µg/mL	LC/MS/MS	0.05 mL	KOx / NaF	-70	Richmond	Active	LCMSC 425
Acetylsalicylic Acid (Salicylic Acid) Omeprazole	Human Plasma	20 to 10,000 ng/mL 100 to 50,000 ng/mL 4 to 2000 ng/mL	LC/MS/MS	0.075 mL	KOx / NaF	-70	Madison	Active	P1353
Salmeterol	Human Plasma	1 to 100 pg/mL	LC/MS/MS	1.0 mL	KOx / NaF	-20	Madison	Active	P798
Salmeterol & Fluticasone Propionate	Human Plasma	1 to 200 pg/mL	LC/MS/MS	1.0 mL	KOx / NaF	-20	Madison	Active	P988
Salmon Calcitonin	Human Plasma	5 to 500 pg/mL	LC/MS/MS	0.3 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMSD 540.1
Saxagliptin (5-hydroxysaxagliptin)	Human Plasma	0.1 to 100 ng/mL 0.2 to 200 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-70	Madison Richmond	Active	P1174.01
Selegiline (N-Desmethylselegiline) (Amphetamine) (Methamphetamine) (Phenethylamine)	Human Plasma	0.01 to 5 ng/mL 0.04 to 20 ng/mL 0.05 to 25 ng/mL 0.05 to 25 ng/mL 0.01 to 5 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	Active	P985
Sertraline	Human Plasma	0.2 to 200 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	Active	P1644
Sertraline (Desmethylsertraline)	Human Plasma	0.5 to 200 ng/mL	LC/MS/MS	0.25 mL	Na Heparin	-20	Richmond	Inactive	LCMSB 98.1
Sildenafil (Desmethylsildenafil)	Human Plasma	1 to 1000 ng/mL	LC/MS/MS	0.25 mL	Na Heparin & K <sub>3</sub> EDTA	-70	Richmond	Inactive	LCMS 231

## LIST OF VALIDATED METHODS September 2018

Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Simvastatin (Simvastatin Acid)	Human Plasma	0.1 to 50 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-70	Madison	Active	P980
Sitagliptin	Human Plasma	1 to 500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1133
Sofosbuvir & GS331007	Human Plasma	5 to 2500 ng/mL 10 to 5000 ng/mL	LC/MS/MS	0.05 mL	Na F/KO	-70	Madison	Active	P1300
Solifenacin	Human Plasma	0.1 to 25 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P950
Sotalol	Human Plasma	10 to 2000 ng/mL	HPLC/FL	0.5 mL	EDTA	-20	Madison	Inactive	P403
Sparfloxacin	Human Plasma	0.025 to 20 µg/mL	HPLC/UV	0.5 mL	Na Heparin	-20	Richmond	Inactive	LC 332
Sufentanil	Human Plasma	1 to 250 pg/mL	LC/MS/MS	0.5 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMSC 239
	Human Urine	5 to 1000 pg/mL	LC/MS/MS	0.25 mL	None	-70	Richmond	Active	LCMSC 239.1
Sumatriptan	Human Plasma	0.2 to 100 ng/mL	LC/MS/MS	0.25 mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMS 174
	Pig Plasma	0.2 to 100 ng/mL	LC/MS/MS	0.25 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMS 174.3
	Mouse Plasma	0.2 to 100 ng/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 174.4
Sunitinib (N-Desethylsunitinib)	Human Plasma	0.1 to 50 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond Madison	Active	LCMSC 457 P1612
Tacrolimus	Human Whole Blood	0.25 to 100 ng/mL	LC/MS/MS	0.25 mL	K <sub>3</sub> EDTA	-20	Richmond Madison	Inactive Active	LCMS 356 P1384
	Human Whole Blood	0.1 to 100 ng/mL	LC/MS/MS	0.25 mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMSC 356.2
	Human Whole Blood	10 to 4000 pg/mL	LC/MS/MS	0.25 mL	K <sub>3</sub> EDTA	-20	Madison	Active	P1399
	Dog Plasma	0.05 to 25 ng/mL	LC/MS/MS	0.5 mL	Na Heparin	-20	Madison	Inactive	P750

## LIST OF VALIDATED METHODS September 2018

Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Tacrolimus	Pig Plasma	0.05 to 25 ng/mL	LC/MS/MS	0.5 mL	Na Heparin	-20	Madison	Inactive	P969
Tamsulosin	Human Plasma	0.05 to 25 ng/mL	LC/MS/MS	0.5 mL	Na Heparin	-20	Madison	Inactive	P682
Tamsulosin & Dutasteride	Human Plasma	0.025 to 25 ng/mL	LC/MS/MS	0.2 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1068
Tapentadol	Human Plasma	0.5 to 500 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1129
Telaprevir	Human Plasma	0.1 to 20 µg/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1153
(S)-Telaprevir	Human Plasma	0.1 to 20 µg/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA with 5% H <sub>3</sub> PO <sub>4</sub>	-20	Madison	Active	P1177
Telmisartan	Human Plasma	2 to 1000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 408
Tenofovir & Emtricitabine	Human Plasma	5 to 1000 ng/mL 20 to 4000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 468
	Human Plasma	5 to 1000 ng/mL 20 to 4000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P947
Terazosin	Human Plasma	0.5 to 200 ng/mL	HPLC/FL	0.3 mL	Na Heparin	-20	Richmond	Inactive	LC 270
Teriparatide	Human Plasma	10 to 500 pg/mL	LC/MS/MS	0.2 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMSF 661
	Rat Plasma	200 to 20,000 pg/mL	LC/MS/MS	0.05 mL	Na Heparin	-70	Richmond	Active	LCMSE 661.1
Terfenadine (Fexofenadine)	Human Plasma	0.05 to 50 ng/mL 0.5 to 500 ng/mL	LC/MS/MS	0.5 mL	Na Heparin	-20	Madison	Inactive	P473
Terconazole	Balb/c Mouse Plasma	1 to 100 ng/mL	LC/MS/MS	0.025 mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMSC 217.1

## LIST OF VALIDATED METHODS September 2018

Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Testosterone (Dihydrotestosterone)	Human Serum	50 to 10,000 pg/mL 10 to 5000 pg/mL	LC/MS/MS	0.15 mL	None	-20	Richmond	<b>Inactive</b>	LCMSC 260.6
	Human Serum	25 to 12,500 pg/mL 10 to 5000 pg/mL	LC/MS/MS	0.25 mL	None	-70	Richmond	Active	LCMSD 260.9
	Human Serum	0.1 to 50 ng/mL 0.05 to 10 ng/mL	LC/MS/MS	0.25 mL	None	-20	Richmond	Active	LCMSC 260.10
	Human Serum	0.1 to 50 ng/mL 0.05 to 10 ng/mL	LC/MS/MS	0.1 mL	None	-20	Madison	Active	P1614
	Rabbit Serum	25 to 12,500 pg/mL 50 to 10,000 pg/mL	LC/MS/MS	0.25 mL	None	-20	Richmond	Active	LCMSD 260.7
Testosterone, Free (unbound)	Human Serum Ultrafiltrate	1 to 200 pg/mL	LC/MS/MS	0.2 mL UF from 0.5 mL serum	None	-20	Richmond Madison	Active	LCMSC 247
Theophylline	Human Plasma	0.05 to 25 µg/mL	HPLC/UV	0.5 mL	Na Heparin	-20	Richmond	<b>Inactive</b>	LC 9
	Human Serum	0.05 to 25 µg/mL	HPLC/UV	0.5 mL	None	-20	Richmond	<b>Inactive</b>	LC 9.1
Ticagrelor (Deshydroxyethylticagrelor)	Human Plasma	10 to 1000 ng/mL 5 to 500 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1238
Tiotropium	Human Plasma	0.507 to 203 pg/mL	LC/MS/MS	0.5 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1086
	Human Plasma	0.2 to 100 pg/mL	LC/MS/MS	0.5 mL	K <sub>2</sub> EDTA	-70	Madison	Active	P1250
Tipranavir & Ritonavir	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1020
TNF-α	Human Serum	15.6 to 1000 pg/mL	ELISA	0.4 mL	None	-20	Richmond	<b>Inactive</b>	ICD 134

## LIST OF VALIDATED METHODS September 2018

Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Tobramycin	Human Plasma	10 to 400 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	Inactive	P790
	Human Urine	100 to 20,000 ng/mL	LC/MS/MS	0.05 mL	None	-20	Madison	Inactive	P769
Tolbutamide	Human Plasma	0.1 to 100 µg/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Richmond	Inactive	LCMSB 226
Tolbutamide (Carboxytolbutamide) (4-Hydroxytolbutamide)	Human Urine	5 to 1000 ng/mL 0.6 to 300 µg/mL 0.3 to 150 µg/mL	LC/MS/MS	0.02 mL	None	-20	Madison	Active	P738
	Human Plasma	0.1 to 100 µg/mL 5 to 5000 ng/mL 2.5 to 2500 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	Active	P737
Topiramate	Human Plasma	10 to 10,000 ng/mL	LC/MS/MS	0.1mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMS 470
	Human Plasma	5 to 5000 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1144
Topiramate (See Cocktail Assay "Epilepsy")	Human Plasma	0.1 to 50 µg/mL	LC/MS/MS	0.1 mL	Na Heparin	-70	Madison	Inactive	P837
Topiramate & Phenteramine	Human Plasma	5 to 5000 ng/mL 0.1 to 100 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1194
Trametinib	Human Plasma	0.25 to 100 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 671
Trepstinil	Human Plasma	0.025 to 10 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1313
	Rat Plasma	0.1 to 50 ng/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1439

## LIST OF VALIDATED METHODS September 2018

Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Triamcinolone	Human Plasma	0.01 to 2.5 ng/mL	LC/MS/MS	0.25 mL	K <sub>3</sub> EDTA	-70	Richmond	Inactive	LCMSC 315
	Human Plasma	1 to 1000 ng/mL	LC/MS/MS	0.1 mL	K <sub>3</sub> EDTA	-70	Richmond	Inactive	LCMS 315.1
Triamterene (Hydroxytriamterene Sulfate)	Human Plasma	0.5 to 100 ng/mL 5 to 1000 ng/mL	HPLC/FL	0.5 mL	Na Heparin	-20	Richmond	Inactive	LC 109
	Human Urine	0.10 to 5 µg/mL 1 to 50 µg/mL	HPLC/FL	0.1 mL	None	-20	Richmond	Inactive	LC 109.1
Triazolam	Human Plasma	0.1 to 25 ng/mL	LC/MS/MS	0.1 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 662
Ulipristal	Human Plasma	0.5 to 250 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1226
	Human Plasma	0.5 to 500 ng/mL	LC/MS/MS	0.025 mL	K <sub>2</sub> EDTA	-20	Madison	Active	P1278
Valganciclovir (Ganciclovir)	Human Plasma	1 to 500 ng/mL 10 to 5000 ng/mL	LC/MS/MS	0.05 mL	Na Citrate	-70	Richmond	Active	LCMSC 410
Valproic Acid	Human Plasma	2 to 100 µg/mL	LC/MS/MS	0.05 mL	Na Heparin	-20	Madison	Active	P885
Vancomycin	Human Plasma	0.1 to 100 µg/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Richmond	Active	LCMSC 645
Venlafaxine (O-Desmethylvenlafaxine)	Human Plasma	2 to 200 ng/mL	LC/MS/MS	0.5 mL 0.2 mL	K <sub>2</sub> EDTA	-20	Richmond Madison	Active	LCMS 531 P1570
Verapamil (Norverapamil)	Human Plasma	1 to 500 ng/mL	HPLC/FL	1.0 mL	Na Heparin	-20	Madison	Inactive	P072
Verapamil Enantiomers (Norverapamil Enantiomers)	Human Plasma	0.5 to 250 ng/mL	LC/MS/MS	0.4 mL	Na Heparin	-20	Madison	Active	P671

## LIST OF VALIDATED METHODS September 2018

Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
Vinorelbine	Human Plasma	2 to 500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	LCMS 539
Voriconazole (Voriconazole-N-Oxide)	Human Plasma	10 to 5000 ng/mL	LC/MS/MS	0.1 mL	Na Heparin	-20	Madison	Active	P968
Warfarin Enantiomers, (unbound)	Human Plasma Ultrafiltrate	0.5 to 25 ng/mL	LC/MS/MS	0.05 mL	EDTA	-20	Madison	Active	P921
Warfarin Enantiomers	Human Serum	5 to 1000 ng/mL	LC/MS/MS	0.5 mL	None	-20	Madison	<b>Inactive</b>	P381
	Human Plasma	5 to 1000 ng/mL	LC/MS/MS	0.25 mL	Na Heparin	-20	Richmond	<b>Inactive</b>	LCMSB 194
	Human Plasma	5 to 1500 ng/mL	LC/MS/MS	0.2 mL	Na Heparin	-20	Madison	Active	P1044
S-warfarin (7-OH-S-warfarin)	Human Plasma	5 to 1500 ng/mL 5 to 1000 ng/mL	LC/MS/MS	0.2 mL	Na Citrate	-20	Madison	Active	P832
Zolpidem	Human Plasma	0.5 to 500 ng/mL	LC/MS/MS	0.05 mL	K <sub>2</sub> EDTA	-20	Madison	<b>Inactive</b>	P844
Zonisamide	Human Plasma	10 to 5000 ng/mL	LC/MS/MS	0.25 mL	K <sub>3</sub> EDTA	-20	Richmond	Active	LCMS 313
	Human Serum	10 to 5000 ng/mL	LC/MS/MS	0.25 mL	None	-20	Richmond	Active	LCMS 313.1



## LIST OF EXPLORATORY BIOMARKER METHODS September 2018

Compound (Metabolite)	Matrix	Calibration Range	Method	Sample Volume	Anti-Coagulant	Storage Temp °C	Lab Site	Method Status*	Method I.D.
AB 1-40 AB 1-42	Human CSF	29.3 to 15,000 pg/mL 2.93 to 1500 pg/mL	MSD	0.05 mL	None	-70	Richmond	Active	ICDBM 29
CXCL4	Human Plasma	0.781 to 50 ng/mL	ELISA	0.02 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	ICDBM 30
Eotaxin-3	Human Plasma	1.95 to 500 pg/mL	MSD	0.1 mL	Na Heparin	-70	Richmond	Active	ICDBM 16
IL-6	Human Plasma	0.35 to 2652 pg/mL	ELLA	0.025 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	ICDBM 32
LIGHT/TNFSF14	Human Plasma	2.14 to 8140 pg/mL	ELLA	0.025 mL	K <sub>2</sub> EDTA	-70	Richmond	Active	ICDBM 38
Periostin	Human Serum	0.0313 to 2 ng/mL	ELISA (Shino-Test)	0.02 mL	None	-70	Richmond	Active	ICDBM 33
pTau	Human CSF	15.61 to 500 pg/mL	ELISA (Innotest)	0.075 mL	None	-70	Richmond	Active	ICDBM 28
sHER-2	Human Serum	12.9 to 7260 pg/mL	ELLA	0.01 mL	None	-70	Richmond	Active	ICDBM 19
TARC (thymus and activation-regulated chemokine)	Human Serum	31.2 to 2000 pg/mL	ELISA	0.1 mL	None	-70	Richmond	Active	ICDBM 15
Tau	Human CSF	18.75 to 1200 pg/mL	ELISA (Innotest)	0.025 mL	None	-70	Richmond	Active	ICDBM 27