

Table 1. Loci and alleles detected by each assay

Assay (sample sets tested)	Affymetri x DMET (Tier 1)	GenMark eSensor ¹ (Tier 1)	Luminex xTAG (Tier 1)	LifeTech Taqman LDT (Tiers 1 and 2)	Agena Biosciences (Sequenom) iPLEX ADME (Tiers 1 and 2)	Agena Biosciences (Sequenom) CYP2D6, CYP2C9/VKOR C1, CYP2C19, UGT1A1 (Tiers 1 and 2)	Autogenomics CYP2D6, CYP2A4, CYP3A5, NAT2 (Tier 1)
CYP1A1	*2C, *3, *4, *5, *6, *7, *8, *9, *10, G45D, R279W, I286T, F381L, A463G				*2, *3, *4, *5, *6, *7, *8, *9		
CYP1A2	*1A, *1C, *1D, *1F, *1K, *1L, *2, *3, *4, *5, *6, *7, *8, *11, *15, *16				*1A, *1C, *1F, *1K, *1L, *7		
CYP2A6	*2, *4, *6, *7, *8, *9, *11, *13, *17, *20, *28, 387FS				*2, *5, *6, *7, *8, *9, *11, *12, *17, *20, *26, *1X2b, CNV(*4)		
CYP2B6	*2, *3, *4, *5, *6, *7, *8, *11, *12, *13, *14, *15, *16, *18, *19, *20, *21, *22, *26, *27, *28			*6, *18	*2, *6, *8, *13, *16, *28, CNV		
CYP2C8	*1A, *2, *3, *4, *5, *7, *8, *12,			*2, *3, *4	*2, *3, *4, *5, *7, *8		

	L390S, P404A						
CYP2C9	*2, *3, *4, *5, *6, *9, *10, *11, *12, *13, *14, *15, *16, *25, Y358C	*2, *3	*2, *3, *4, *5, *6	*2, *3, *5, *6, *8, *11	*2, *3, *4, *5, *6, *8, *9, *10, *11, *12, *13, *15, *25, *27	*1A, *1B, *1C, *1D, *2A, *2B, *2C, *3A, *3B, *4, *5, *6, *7, *8, *9, *10, *11A, *11B, *12, *13, *14, *15, *16, *17, *18, *19, *20, *21, *22, *23, *24, *25, *26, *27, *28, *29, *30, *31, *32, *33, *34, *35	
CYP2C19	*2A, *2B, *3, *4, *5, *6, *7, *8, *9, *10, *12, *13, *14, *15, *17, 439FS, 241FS, V331I	*2, *3, *4, *5, *6, *7, *8, *9, *10, *13, *17	*2, *3, *4, *5, *6, *7, *8, *9, *10, *17	*2, *3, *4, *6, *8, *17	*1B, *2, *3, *4, *5A, *5B, *6, *7, *8, *12, *17	*1A, *1B, *1C, *2, *2B, *3A, *3B (*20), *4A, *4B, *5A, *5B, *6, *7, *8, *9, *10, *11, *12, *13, *14, *15, *16, *17, *18, *19, *20, *21, *22, *23, *24, *25, *26, *27, *28	

CYP2D6	*2, *3, *4, *5, *6, *7, *8, *9, *10, *11, *12, *14A, *14B, *15, *17, *18, *19, *20, *21, *29, *38, *40, *41, *42, *44, *56A, *56B, *64, S486T		*2, *3, *4, *5, *6, *7, *8, *9, *10, *11, *15, *17, *29, *35, *41, DUP	*2, *3, *4, *5, *6, *7, *9, *10, *17, *29, *41, XN, 1XN, 2XN, 4XN	*2A, *2L, *3, *4, *4M, *5, *6, *7, *8, *9, *10, *11, *12, *14A, *14B, *15, *17, *18, *19, *20, *21A, *21B, *30, *35?, *38, *40, *41, *42, *44, *56A, *56B, *58, *64, *69, CNV	*2, *2A, *2D, *2L, *2M, *3, *4, *4B, *4J, *4K, *4M, *4N;P, *5, *6, *6C, *7, *8, *9, *10A, *10B, *11, *12, *14A, *14B, *15, *17, *18, *19, *20, *21A, *21B, *27, *29, *30, *34, *35, *36, *38, *39, *40, *41, *42, *44, *45A, *56A, *56B, *57, *58, *63, *64, *65, *68, *69, *70, *71, *82, *83, *84	*2, *3, *4, *5, *6, *7, *8, *9, *10, *12, *14, *17, *29, *41, *XN,
CYP2E1	*2, *3, *4, *5, *7A, *7B, *7C				*2, *7		
CYP3A4	*2, *3, *4, *5, *6, *7, *8, *10, *11, *12, *13, *14, *15, *16, *17, *18, *19, *20, K96E, I193V, S252A, I431T, 465FS,	*1B, *2, *3, *12, *17		*2, *22	*2, *6, *20, *22		*1B, *2, *3, *12, *17
CYP3A5	*1A, *2, *3C, *3B, *3D, *3F, *3G, *3K, *3L, *4, *5, *6, *7, *8, *9, S100Y	*1D, *2, *3, *3B, *6, *7, *8, *9		*3, *6, *7	*3, *3K, *5, *6, *7		*1D, *2, *3, *3B, *6, *7, *8, *9,

CYP4F2	*2, *3, W12C, P13R, G185V, L278F			*3			
DPYD	*2, *3, *4, *7, *8, *9A, *9B, *10, *11, *13, R21X, M166V			*2A, *9A	*2, *7, *8, *9, *10		
GSTM1	*A, *B, *0				*A, *B, CNV		
GSTP1	*A, *B, *C, D147Y				A, B, C, D		
GSTT1	*A, *B, A21T, F45C, V169I, *0				CNV		
NAT1	*4, *5, *11, *11C, *14, *15, *17, *19A, *19B, *22, *23, *27, *30, T207I				*4, *5, *11, *14, *15, *17, *19, *22		
NAT2	*4, *5, *5E, *6, *6J, *7, *7D, *10, *12D, *14, *14D, *14F, *17, *18, *19, L137F, K268R, S287P				*4, *5, *5A, *5C, *5D, *5E, *5G, *5J, *5K, *5P, *6A, *6B, *6C, *6E, *6F, *6I, *6N, *7A, *7B, *7C, *7D, *11, *12, *12B, *12C, *13, *14, *14B, *14C, *14D, *14E, *14F, *14G, *14I, *19	G>A 191, C>T 282, C>T 341, C>T 481, G>A 590, A>G 803, G>A 857	
SLC15A2	*2, *3, R57H, M704L				*2, *3		

SLC22A2	*2A, *2B, *3A, *6, *3D, *3E, *5, *7, *8, R463K				P54S, M165V, S270A, R400C, K432Q		
SLC01B1	*1a, *1b, *2, *3, *4, *5, *6, *7, *8, *9, *10, *11, *12, *13, *14, *15, *16, *17, *18, *21, P336R			*5, *17	*1A, *1B, *2, *3, *5, *9, *10, *11, *12, *13, *15		
SLC02B1	*2, D215V				S464F (*3?)		
TPMT	*2, *3A, *3B, *3C, *3D, *4, *8, *24			*3A, *3B, *3C	*2, *3A, *3B, *3C, *4, *8		
UGT1A1	*60, *28+60+9 3, *28+60, *6, *28, *27+28+6 0, *27+28+6 0+93, *27, *112, *80, *93, *45, *62, *12, *15, *8, *43, *14				*6A, *6B, *7, *27, *29, *60	*28, *36, *37	
UGT2B7	*1a, *1g, *2c, *2a, *2e, *3				*2		
UGT2B15	*2, *4, *5, A500T				Y85D(*2?)		
UGT2B17	H450Y, *2				CNV?		

VKORC1	H6, H1, H2, H3, H4, H7, H9, V29L, V45A, R58G, V66M, R98W, L128R	c.-1639G>A	c.-1639G>A, c.85G>T (p.V29L), c.121G>T (p.A41S), c.134T>C (p.V45A), c.172A>G (p.R58G), c.196G>A (p.V66M), c.383T>G (p.L128R)	*2	*2, *3, *4	*2/H1, *2A, *2B, *3, *3F;BHT3, *4, *7RE, BHT2RE, BHT4, H2/H5, H4, H6, H7A, H7B, H8, H9	
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1 Assay do not include all genes or alleles

Table 2. Alleles identified in the DNA samples tested

Gene	Alleles tested in study	Alleles verified by 2 or more methods	alleles found by only 1 laboratory	Alleles not found in study samples	alleles tested by only one method
CYP1A1	*2, *2C, *3, *4, *5, *6, *7, *8, *9, *10, G45D, R279W, I286T, F381L, A463G	*2, *4, *5	*2C	*3, *6, *7, *8, *9, *10, G45D, R279W, I286T, F381L, A463G	*2C, *10, G45D, R279W, I286T, F381L, A463G
CYP1A2	*1A, *1C, *1D, *1F, *1K, *1L, *2, *3, *4, *5, *6, *7, *8, *11, *15, *16	*1A, *1C, *1F, *1K, *1L		*1D, *2, *3, *4, *5, *6, *7, *8, *11, *15, *16	*1D, *2, *3, *4, *5, *6, *8, *11, *15, *16
CYP2A6	*2, *4, *5, *6, *7, *8, *9, *11, *12, *13, *17, *20, *26, *28, 387FS, *1X2b	*2, *4, *9, *17, *20	*8	*6, *7, *11, *13, *28, 387FS, *1X2b	*5, *12, *13, *26, *28, 387FS, *1X2b
CYP2B6	*2, *3, *4, *5, *6, *7, *8, *11, *12, *13, *14, *15, *16, *18, *19, *20, *21, *22, *26, *27, *28	*2, *6, *7, *18	*4, *5, *11, *15, *20, *22, *27,	*3, *8, *12, *13, *14, *16, *19, *21, *26, *28	*3, *4, *5, *7, *11, *12, *14, *15, *19, *20, *21, *22, *26, *27
CYP2C8	*1A, *2, *3, *4, *5, *7, *8, *12, L390S, P404A	*2, *3, *4,	*1A	*5, *7, *8, *12, L390S, P404A	*1A, *12, L390S, P404A

CYP2C9	*1A, *1B, *1C, *1D, *2, *2A, *2B, *2C, *3, *3A, *3B, *4, *5, *6, *7, *8, *9, *10, *11, *11A, *11B, *12, *13, *14, *15, *16, *17, *18, *19, *20, *21, *22, *23, *24, *25, *26, *27, *28, *29, *30, *31, *32, *33, *34, *35, Y358C	*2, *3, *5, *6, *8, *9, *10, *11, *12	*1A, *1B, *1C, *2A, *18,	*1D, *2B, *2C, *3A, *3B, *4, *7, *11A, *11B, *13, *14, *15, *16, *17, *19, *20, *21, *22, *23, *24, *25, *26, *27, *28, *29, *30, *31, *32, *33, *34, *35, Y358C	*1A, *1B, *1C, *1D, *2A, *2B, *2C, *3A, *3B, *7, *11A, *11B, *17, *18, *19, *20, *21, *22, *23, *24, *26, *28, *29, *30, *31, *32, *33, *34, *35, Y358C
CYP2C19	*1A, *1B, *1C, *2, *2A, *2B, *3, *3A, *3B (*20), *4, *4A, *4B, *5, *5A, *5B, *6, *7, *8, *9, *10, *11, *12, *13, *14, *15, *16, *17, *18, *19, *20, *21, *22, *23, *24, *25, *26, *27, *28, 439FS, 241FS, V331I	*2, *3, *4, *4B, *6, *8, *9, *10, *13, *15, *17	*1A, *1B, *1C, *2A, *2B, *4A, *12, *27	*3A, *3B (*20), *5, *5A, *5B, *7, *11, *14, *16, *18, *19, *20, *21, *22, *23, *24, *25, *26, *28, 439FS, 241FS, V331I	*1A, *1C, *2A, *3A, *3B (*20), *4A, *4B, *11, *16, *18, *19, *20, *21, *22, *23, *24, *25, *26, *27, *28, 439FS, 241FS, V331I
CYP2D6	*2, *2A, *2D, *2L, *2M, *3, *4, *4B, *4J, *4K, *4M, *4N;P, *5, *6, *6C, *7, *8, *9, *10, *10A, *10B, *11, *12, *14, *14A, *14B, *15, *17, *18, *19, *20, *21, *21A, *21B, *27, *29, *30, *34, *35, *36, *38, *39, *40, *41, *42, *44, *45A, *56A, *56B, *57, *58, *63, *64, *65, *68,	*2, *3, *4, *5, *6, *7, *9, *10, *14, *15, *17, *29, *35, *41, XN, *2XN, *4XN, *10XN, *41XN	*2A, *21, *21B, *36, *40	*2D, *2L, *2M, *4B, *4J, *4K, *4M, *4N;P, *6C, *8, *11, *12, *14A, *14B, *18, *19, *20, *21A, *27, *30, *34, *38, *39, *42, *44, *45A, *56A, *56B, *57, *58, *63, *64, *68, *69, *70, *71, *82, *83, *84, S486T	*2D, *2M, *4B, *4J, *4K, *4N;P, *6C, *10A, *10B, *14, *21, *27, *34, *36, *39, *45A, *57, *63, *65, *68, *70, *71, *82, *83, *84, S486T

	*69, *70, *71, *82, *83, *84, 1XN, 2XN, 4XN, CNV, DUP, S486T, XN				
CYP2E1	*2, *3, *4, *5, *7, *7A, *7B, *7C	*7	*4, *5, *7A, *7B, *7C	*2, *3	*3, *4, *5, *7A, *7B, *7C
CYP3A4	*1B, *2, *3, *4, *5, *6, *7, *8, *10, *11, *12, *13, *14, *15, *16, *17, *18, *19, *20, *22, K96E, I193V, S252A, I431T, 465FS	*1B, *2, *3, *22	*14, *15, *16,	*4, *5, *6, *7, *8, *10, *11, *12, *13, *17, *18, *19, *20, K96E, I193V, S252A, I431T, 465FS	*4, *5, *7, *8, *10, *11, *13, *14, *15, *16, *18, *19, K96E, I193V, S252A, I431T, 465FS
CYP3A5	*1A, *1D, *2, *3, *3B, *3C, *3D, *3F, *3G, *3K, *3L, *4, *5, *6, *7, *8, *9, S100Y	*1D, *3, *6, *7,	*1A, *3C, *3G	*2, *3B, *3D, *3F, *3K, *3L, *4, *5, *8, *9, S100Y	*1A, *3C, *3D, *3F, *3G, *3L, *4, S100Y
CYP4F2	*2, *3, W12C, P13R, G185V, L278F	*3	*2	W12C, P13R, G185V, L278F	*2, W12C, P13R, G185V, L278F
DPYD	*2, *2A, *3, *4, *7, *8, *9, *9A, *9B, *10, *11, *13, R21X, M166V	*2, *9	*4, *9A	*2A, *3, *7, *8, *9B, *10, *11, *13, R21X, M166V	*2A, *3, *4, *9A, *9B, *11, *13, R21X, M166V
GSTM1	*A, *B, *0 (DEL)	DEL, *A, *B			
GSTP1	*A, *B, *C, *D, D147Y	*A, *B, *C		*D, D147Y	*D, D147Y
GSTT1	*A, *B, A21T, F45C, V169I, *0 (DEL), CNV	DEL	AXN, A, B	A21T, F45C, V169I,	*A, *B, A21T, F45C, V169I
NAT1	*4, *5, *11, *11C, *14, *15, *17, *19, *19A, *19B, *22, *23, *27, *30, T207I	*4, *11, *14, *17		*5, *11C, *15, *19, *19A, *19B, *22, *23, *27, *30, T207I	*11C, *19A, *19B, *23, *27, *30, T207I

NAT2	*4, *5, *5A, *5C, *5D, *5E, *5G, *5J, *5K, *5P, *6, *6A, *6B, *6C, *6E, *6F, *6I, *6J, *6N, *7, *7A, *7B, *7C, *7D, *10, *11, *12, *12B, *12C, *12D, *13, *14, *14B, *14C, *14D, *14E, *14F, *14G, *14I, *17, *18, *19, L137F, K268R, S287P	*4, *5, *6, *7, *14	*5A, *5C, *7B, *12, *13	*5D, *5E, *5G, *5J, *5K, *5P, *6A, *6B, *6C, *6E, *6F, *6I, *6J, *6N, *7A, *7C, *7D, *10, *11, *12B, *12C, *12D, *14B, *14C, *14D, *14E, *14F, *14G, *14I, *17, *18, *19, L137F, K268R, S287P	*5A, *5C, *5D, *5G, *5J, *5K, *5P, *6A, *6B, *6C, *6E, *6F, *6I, *6J, *6N, *7A, *7B, *7C, *10, *11, *12, *12B, *12C, *12D, *13, *14B, *14C, *14E, *14G, *14I, *17, *18, L137F, K268R, S287P
SLC15A2	*2, *3, R57H, M704L	*2		*3, R57H, M704L	R57H, M704L
SLC22A2	*2A, *2B, *3A, *3D, *3E, *5, *6, *7, *8, P54S, M165V, S270A, R400C, K432Q, R463K	*3, *7	*2, *2A, *2B, *3A, *3D, *3E, S270A, K432Q, R400C	*6, *5, *8, P54S, M165V, R463K	*2A, *2B, *3A, *3D, *3E, *5, *6, *7, *8, P54S, M165V, S270A, R400C, K432Q, R463K
SLCO1B1	*1A, *1B, *2, *3, *4, *5, *6, *7, *8, *9, *10, *11, *12, *13, *14, *15, *16, *17, *18, *21, P336R	*1A, *1B, *5, *14, *15, *17, *21		*2, *3, *4, *6, *7, *8, *9, *10, *11, *12, *13, *16, *18, P336R	*4, *6, *7, *8, *14, *16, *18, *21, P336R
SLCO2B1	*2, D215V, S464F (*3?)	none	S464F	*2, D215V	*2, D215V, S464F (*3?)
TPMT	*2, *3A, *3B, *3C, *3D, *4, *8, *24	*3A, *3C, *8		*2, *3B, *3D, *4, *24	*3D, *24
UGT1A1	*6, *6A, *6B, *7, *8, *12, *14, *15, *27, *27+28+60, *27+28+60+93, *28, *28+60+93, *28+60, *29, *36, *36B, *37, *43, *45, *60, *62, *80, *93, *112	*6, *27, *28, *60	*6A, *7, *28B, *36, *36B, *37	*8, *12, *14, *15, *29, *43, *45, *62, *80, *93, *112	*6A, *6B, *7, *8, *12, *14, *15, *27+28+60, *27+28+60+93, *28+60+93, *28+60, *29, *36, *36B, *37, *43, *45, *62, *80, *93, *112

UGT2B7	*1A, *1G, *2, *2A, *2C, *2E, *3	*2,	*1A, *1G, *2C, *3	*2A, *2E	*1, *1A, *1G, *2A, *2C, *2E, *3
UGT2B15	*2, *4, *5, A500T, Y85D(*2?)	*2, *5	*4	A500T, Y85D(*2?)	*2, *4, *5, A500T, Y85D(*2?)
UGT2B17	H450Y, *2, CNV		*2, CNV	H450Y	H450Y, *2, CNV
VKORC1	H1, H2, H3, H4, H5, H6, H7, H7A, H7B, H8, H9, H2/H5,*2, *2A, *2B, *3, *3F, *4,V29L, V45A, R58G, V66M, R98W, L128R, A41S, - 1639G>A,	c.- 1639G>A, *2, *3, *4, H1, H2, H4, H6, H7,	H3, H5, H7B, H9	V29L, V45A, R58G, V66M, R98W, L128R, A41S	H3, H7A, H7B, H8, H2/H5, *2A, *2B, *3F, V29L, V45A, R58G, V66M, R98W, L128R, A41S, - 1639G>A,

Commented [LK1]: We did not include these in the consensus, but I am not sure which other column to put them in. can we leave them here?