Manchester University

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REPORT NUMBER-00000	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 1/15/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*2	Intermediate Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*4	Intermediate Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/C	Decreased Function	521T>C, 388A>G
CFTR	G551D/R553X	Positive	Numerous
DPYD	*2A/*2A	Poor Metabolizer	Numerous
TPMT	*1/*2	Intermediate Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*2	Intermediate Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*28	Intermediate Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	Mexico City or Mexico City/ Mexico City	Deficient	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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REPORT NUMBER-00021	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 1/15/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*17	Rapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*1	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*1/*3	Intermediate Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1B	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A A/A	High Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C C/C	Poor Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*2A/*8	Poor Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*28	Intermediate Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/Sao Boria	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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REPORT NUMBER-10461	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 1/15/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*2	Intermediate Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*1	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*1/*3	Intermediate Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1B	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*2	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	R553X/R553X	Negative	Numerous
DPYD	c.[=];[=]	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*2 *1/*1	Intermediate Metabolizer Normal Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*28/*28	Poor Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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REPORT NUMBER-10866	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 1/15/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*1	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*3/*4	Poor Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	G551D/R553X	Positive	Numerous
DPYD	*2A/c.2846A>T	Poor Metabolizer	Numerous
TPMT NUDT15	*1/*2 *1/*1	Intermediate Metabolizer Normal Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	A- or A–/Orissa	Deficient	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02 negative/negative Negative
HLA-B*57:01 negative/negative Negative
HLA-B*58:01 negative/negative Negative
HLA-A*31:01 negative/negative Negative

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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REPORT NUMBER-12279	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 1/15/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*17	Rapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*4/*4	Poor Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*3	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	R553X/R553X	Negative	Numerous
DPYD	c.[85T>C];[=]	Normal Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*36	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	A- or A-/A-	Deficient	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	positive/positive	Positive	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/positive	Positive			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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REPORT NUMBER-12700	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 1/15/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*7	Intermediate Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*3	Intermediate Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*3	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*6/*6	Poor Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C C/C	Poor Function	521T>C, 388A>G
CFTR	R553X/R553X	Negative	Numerous
DPYD	c.[=];[=]	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*1 *1/*1	Normal Metabolizer Normal Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/Sao Boria	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/positive	Positive
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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REPORT NUMBER-12815	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 1/15/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*2/*7	Poor Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*4/*10	Intermediate Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A A/A	High Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	R553X/R553X	Negative	Numerous
DPYD	c.[=];[=]	Normal Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/Sao Boria	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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Manchester University

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REPORT NUMBER-13730	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 1/15/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*2/*2	Poor Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*4/*4	Poor Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1B	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	G551D/F508del	Positive	Numerous
DPYD	c.[=];[=]	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*1 *1/*2	Normal Metabolizer Intermediate Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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REPORT NUMBER-14075	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 1/15/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*3	Intermediate Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*2	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*3	Decreased Function	*2, *3
CYP2C9	*1/*3	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*6	Intermediate Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	G551D/G551D	Positive	Numerous
DPYD	*2A/*2A	Poor Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	A- or B/A–	Deficient or Variable	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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REPORT NUMBER-15148	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 1/15/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*2/*7	Poor Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*4	Intermediate Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*3	Decreased Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*3A *1/*1	Intermediate Metabolizer Normal Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*36	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	Bangkok or Bangkok/ Bangkok	Deficient with CNSHA	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*7	Intermediate Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*1	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*3	Decreased Function	*2, *3
CYP2C9	*1/*3	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/F508del	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/positive	Positive			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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REPORT NUMBER-16714	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 2/3/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*2/*17	Intermediate Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*1	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*3	Decreased Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*6	Intermediate Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	G551D/508del	Positive	Numerous
DPYD	*1/*2A	Intermediate Metabolizer	Numerous
TPMT NUDT15	*1/*1 *1/*2	Normal Metabolizer Intermediate Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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Manchester University

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REPORT NUMBER-16714	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 2/3/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*2	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/C	Decreased Function	521T>C, 388A>G
CFTR	G551D/G551D	Positive	Numerous
DPYD	*1/*1	Intermediate Metabolizer	Numerous
TPMT NUDT15	*1/*3 *1/*1	Intermediate Metabolizer Normal Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/positive	Positive
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*17	Rapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*1	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*3/*3	Poor Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1A	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C C/C	Poor Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*2A	Intermediate Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/Sao Boria	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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Manchester University

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REPORT NUMBER-20563	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 2/3/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*2	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A A/A	High Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*3	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT	*3A/*3A	Poor Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*28/*28	Poor Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	Sao Boria or B/Sao Boria	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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REPORT NUMBER-21354	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 2/3/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*17	Rapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*1	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*1D/*3	Intermediate Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A A/A	High Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1C/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C C/C	Poor Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT	*1/*3A	Intermediate Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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REPORT NUMBER-21566	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 2/3/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*2/*2	Poor Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*10/*10	Intermediate Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A A/A	High Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1C/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*2A/*2A	Poor Metabolizer	Numerous
TPMT NUDT15	*1/*1 *1/*3	Normal Metabolizer Intermediate Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	Bangkok or Bangkok/Villeurbanne	Deficient with CNSHA	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/positive	Positive			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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REPORT NUMBER-21576	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 2/3/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*4	Intermediate Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*2	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*1 *1/*1	Normal Metabolizer Normal Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*36/*37	Intermediate Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	Bangkok or Bangkok/Villeurbanne	Deficient with CNSHA	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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REPORT NUMBER-21687	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 2/3/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*17	Rapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*4	Intermediate Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*3	Decreased Function	*2, *3
CYP2C9	*1/*3	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*2	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	A- or A-/A-	Deficient	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	positive/positive	Positive	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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REPORT NUMBER-21742	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 2/3/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*17	Rapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*35	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*3	Decreased Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1A	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	rs75527207 G/G	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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REPORT NUMBER-22937	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 2/3/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*17/*17	Intermediate Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1B	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*3	Decreased Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1A	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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REPORT NUMBER-23559	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 2/3/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*9	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*2	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C C/C	Poor Function	521T>C, 388A>G
CFTR	R553X/R553X	Negative	Numerous
DPYD	*1/*2A	Intermediate Metabolizer	Numerous
TPMT	*2/*4	Poor Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*36	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD Bangkok or Bangkok/Villeurbanne		Deficient with CNSHA	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/positive	Positive			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*17	Rapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*4/*4	Poor Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	R553X/R553X	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*37	Intermediate Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/Sao Boria	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/positive	Positive
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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REPORT NUMBER-25330	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/4/2020
REPORT DATE: 2/3/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*17	Rapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*1	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1C	Normal Metabolizer - Possible Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	G551D/F508del	Positive	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*1 *1/*2	Normal Metabolizer Intermediate Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/Sao Boria	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*2	Intermediate Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*4/*35	Intermediate Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A A/A	High Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*2	Normal Function	*2, *3
CYP2C9	*1/*3	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/F508del	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*37	Intermediate Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	A- or A-/Orissa	Deficient	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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REPORT NUMBER-25803	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/27/2020
REPORT DATE: 2/6/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*4/*4	Poor Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*2	Normal Function	*2, *3
CYP2C9	*1/*2	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/F508del	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*36	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/Sao Boria	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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REPORT NUMBER-26066	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/27/2020
REPORT DATE: 2/6/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*17	Rapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*1	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*2	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/C	Decreased Function	521T>C, 388A>G
CFTR	G551D/G551D	Positive	Numerous
DPYD	*1/*2A	Intermediate Metabolizer	Numerous
TPMT	*1/3A	Intermediate Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*36	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/Sao Boria	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/positive	Positive			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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REPORT NUMBER-27063	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/27/2020
REPORT DATE: 2/6/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*10	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*22	Intermediate Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*2	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	G551D/G551D	Positive	Numerous
DPYD	*1/*2A	Intermediate Metabolizer	Numerous
TPMT	*1/3C	Intermediate Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*2	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*36	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/Sao Boria	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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REPORT NUMBER-27522	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/27/2020
REPORT DATE: 2/6/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*2/*2	Poor Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*2xN	Ultrarapid Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*1D/*3	Intermediate Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*2	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1L	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT	*1/1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*2	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*28/*28	Poor Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	Bangkok or Bangkok/Bangkok	Deficient with CNSHA	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*2	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT	*1/1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*2	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/positive	Positive	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*17/*17	Ultrarapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	Indeterminate	Unknown Phenotype	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/C	Decreased Function	521T>C, 388A>G
CFTR	rs75527207 G/G	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT	*1/3A	Intermediate Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*28	Intermediate Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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REPORT NUMBER-31074	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 1/27/2020
REPORT DATE: 2/6/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*17/*17	Ultrarapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*1	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*2A	Intermediate Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*28/*28	Poor Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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REPORT NUMBER-31169	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 2/14/2020
REPORT DATE: 2/17/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*2	Intermediate Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*1	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*2	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*2 *1/*2	Intermediate Metabolizer Intermediate Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	A- or A-/A-	Deficient	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/negative	Negative			
HLA-B*58:01	negative/positive	Positive			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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REPORT NUMBER-31177	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 2/14/2020
REPORT DATE: 2/17/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*17/*17	Ultrarapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*2	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*2	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1A	Normal Metabolizer - Possible Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C C/C	Poor Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	c.[190511G>A];[190511G>A]	Poor Metabolizer	Numerous
TPMT	*1/*2	Intermediate Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*2	Intermediate Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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REPORT NUMBER-32703	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 1/3/2020
RECEIVED DATE: 2/14/2020
REPORT DATE: 2/17/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*2/*17	Intermediate Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*6	Intermediate Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A A/A	High Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	G551D/G551D	Positive	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*1 *1/*2	Normal Metabolizer Intermediate Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	Sao Boria or Sao Boria/Sao Boria	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/positive	Positive	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*17	Rapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*4/*17	Intermediate Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*1/*1	Normal Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1B	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1L/*1L	Unknown Phenotype	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	A- or A-/A-	Deficient	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*2	Intermediate Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*2	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*2	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	rs75527207 G/G	Negative	Numerous
DPYD	*2A/*3	Poor Metabolizer	Numerous
TPMT NUDT15	*1/*3A *1/*1	Intermediate Metabolizer Normal Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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REPORT NUMBER-35168	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 2/22/2020
RECEIVED DATE: 2/24/2020
REPORT DATE: 3/2/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*2/*2	Poor Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*2/*4	Intermediate Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*22	Intermediate Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*1 *2/*2	Normal Metabolizer Poor Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	Bangkok or Bangkok/Bangkok	Deficient with CNSHA	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/positive	Positive			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*17	Rapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*1	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A A/A	High Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1K	Intermediate Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/C	Decreased Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*1 *1/*1	Normal Metabolizer Poor Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/Sao Boria	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/positive	Positive
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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REPORT NUMBER-36194	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 2/22/2020
RECEIVED DATE: 2/24/2020
REPORT DATE: 3/2/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*17	Rapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*1	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A A/A	High Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	c.868A>G/c.868A>G	Intermediate Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*28/*28	Poor Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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REPORT NUMBER-36223	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 2/22/2020
RECEIVED DATE: 2/24/2020
REPORT DATE: 3/2/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*2	Intermediate Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*2/*2	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A A/A	High Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/C	Decreased Function	521T>C, 388A>G
CFTR	G551D/G551D	Positive	Numerous
DPYD	c.868A>G/c.868A>G	Intermediate Metabolizer	Numerous
TPMT NUDT15	*1/*3A *2/*2	Intermediate Metabolizer Poor Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*/*28	Intermediate Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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REPORT NUMBER-37235	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 2/22/2020
RECEIVED DATE: 2/24/2020
REPORT DATE: 3/2/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*4/*10	Intermediate Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*2	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*1 *1/*1	Normal Metabolizer Normal Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*2/*41	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A A/A	High Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*2	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1V/*1V	Unknown Phenotype	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	A- or A-/A-	Deficient	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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REPORT NUMBER-37712	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 2/22/2020
RECEIVED DATE: 2/24/2020
REPORT DATE: 3/2/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*17	Rapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*2/*41	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*6	Intermediate Metabolizer	*6, *9
CYP1A2	*1A/*1V	Normal Metabolizer - Possible Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	c.[5];[5]	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*2 *1/*1	Intermediate Metabolizer Normal Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/positive	Positive	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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REPORT NUMBER-38789	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 2/22/2020
RECEIVED DATE: 2/24/2020
REPORT DATE: 3/2/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*2xN	Ultrarapid Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*1/*7	Intermediate Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1B/*1B	Intermediate Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*6/*6	Poor Metabolizer	*6, *9
CYP1A2	*1F/*1V	Normal Metabolizer - Possible Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*1 *1/*1	Normal Metabolizer Normal Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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Manchester University

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REPORT NUMBER-39012	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 2/22/2020
RECEIVED DATE: 2/24/2020
REPORT DATE: 3/2/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*1	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A A/A	High Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*2	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*7	Intermediate Metabolizer	Numerous
TPMT NUDT15	*1/*1 *1/*3	Normal Metabolizer Intermediate Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	Sao Boria or B/Sao Boria	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*17	Rapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*4/*4	Poor Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*3	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*6	Intermediate Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	G551D/F508del	Positive	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*1 *1/*1	Normal Metabolizer Normal Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/positive	Positive			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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REPORT NUMBER-41443	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 2/22/2020
RECEIVED DATE: 2/24/2020
REPORT DATE: 3/2/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*4/*4	Poor Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Normal Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*6	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1A	Normal Metabolizer - Possible Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/C	Decreased Function	521T>C, 388A>G
CFTR	rs75527207 G/G	Negative	Numerous
DPYD	*8/*8	Poor Metabolizer	Numerous
TPMT NUDT15	*1/*1 *1/*1	Normal Metabolizer Normal Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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REPORT NUMBER-42211	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 2/22/2020
RECEIVED DATE: 2/24/2020
REPORT DATE: 3/2/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*1	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*1/*3	Intermediate Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A A/A	High Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*2 *1/*1	Intermediate Metabolizer Normal Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*17	Rapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*41	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*2	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	rs75527207 A/A	Positive	Numerous
DPYD	*1/*2A	Intermediate Metabolizer	Numerous
TPMT NUDT15	*2/*2 *1/*1	Poor Metabolizer Normal Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	A- or A-/A-	Deficient	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*2	Intermediate Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*1	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*1/*3	Intermediate Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*2	Normal Function	*2, *3
CYP2C9	*3/*3	Poor Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	rs75527207 A/G	Positive	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*2 *1/*2	Intermediate Metabolizer Intermediate Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*2/*17	Intermediate Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*2	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*2	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/C	Decreased Function	521T>C, 388A>G
CFTR	rs199826652 del/del	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*2	Intermediate Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*37	Intermediate Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	Mediterranean or Mediterranean/Mediterranean	Deficient	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/positive	Positive
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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REPORT NUMBER-46717	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 2/22/2020
RECEIVED DATE: 2/24/2020
REPORT DATE: 3/2/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*2	Intermediate Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*2/*4	Intermediate Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	rs199826652 del/del	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*1 *1/*3	Normal Metabolizer Intermediate Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	A or A-/A-	Deficient	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*2	Intermediate Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*41	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*1/*3	Intermediate Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1B	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	c.1774C>T/c.557A>G	Poor Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*2/*2	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1B	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*1 *1/*1	Normal Metabolizer Normal Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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REPORT NUMBER-48162	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 2/22/2020
RECEIVED DATE: 2/24/2020
REPORT DATE: 3/2/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*2	Intermediate Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*2/*35	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*22	Intermediate Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*2	Normal Function	*2, *3
CYP2C9	*1/*11	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1A	Normal Metabolizer - Possible Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/F508del	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*3C *1/*1	Intermediate Metabolizer Normal Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/positive	Positive
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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REPORT NUMBER-49258	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 2/22/2020
RECEIVED DATE: 2/24/2020
REPORT DATE: 3/2/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*17/*17	Ultrarapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*4/*4	Poor Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A A/A	High Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*2	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/C	Decreased Function	521T>C, 388A>G
CFTR	G551D/F508del	Positive	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*36	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/positive	Positive			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Disclaimer: Manchester University developed the Genotype test. The performance characteristics of this test were determined by Manchester University. It has not been cleared or approved by the U.S. Food and Drug Administration.

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REPORT NUMBER-49946	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 2/22/2020
RECEIVED DATE: 2/24/2020
REPORT DATE: 3/2/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*41	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1A	Normal Metabolizer - Possible Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	G551D/G551D	Positive	Numerous
DPYD	*2A/*2A	Poor Metabolizer	Numerous
TPMT NUDT15	*1/*1 *1/*3	Normal Metabolizer Intermediate Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*27/*27	Poor Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	Kalyan-Kerala or Orissa/Kalyan-Kerala	Deficient	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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REPORT NUMBER-51783	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 2/22/2020
RECEIVED DATE: 2/24/2020
REPORT DATE: 3/2/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*2/*41	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1A	Normal Metabolizer - Possible Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	G551D/G551D	Positive	Numerous
DPYD	*1/*2A	Intermediate Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	A- or A-/A-	Deficient	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/positive	Positive	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*1	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	rs199826652 del/del	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	A- or A-/A-	Deficient	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/positive	Positive	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*2/*4	Intermediate Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT NUDT15	*2/*2 *1/*1	Poor Metabolizer Normal Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Deficient	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/positive	Positive
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*2	Intermediate Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*4	Intermediate Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*3	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/C	Decreased Function	521T>C, 388A>G
CFTR	F508del/R553X	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT NUDT15	*2/*2 *1/*2	Poor Metabolizer Intermediate Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*36	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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REPORT NUMBER-78945	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 2/22/2020
RECEIVED DATE: 2/24/2020
REPORT DATE: 3/2/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*17	Rapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*2/*10	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/C	Decreased Function	521T>C, 388A>G
CFTR	F508del/F508del	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*1 *1/*1	Normal Metabolizer Normal Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*37	Intermediate Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*1	Normal Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*1	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*1/*3	Intermediate Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1B	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1F/*1F	Normal Metabolizer - Higher Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C C/C	Poor Function	521T>C, 388A>G
CFTR	F508del/F508del	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT	*1/*1	Normal Metabolizer	*2, *3A, *3B, *3C, *4
NUDT15	*1/*1	Normal Metabolizer	*2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	B or B/B	Normal	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/negative	Negative	HLA-A*31:01	negative/positive	Positive
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/positive	Positive			

Limitation: This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Absence of a detectable gene mutation does not rule out the possibility that a patient has different phenotypes due to the presence of an undetected polymorphism or due to other factors such as drug-drug interactions, comorbidities and lifestyle habits.

Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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REPORT NUMBER-99185	SPECIMEN DETAILS	ORDERED BY

SPECIMEN TYPE: Buccal Swab
COLLECTION DATE: 2/22/2020
RECEIVED DATE: 2/24/2020
REPORT DATE: 3/2/2020

Test Details

Gene	Genotype	Phenotype	Alleles Tested
CYP2C19	*1/*17	Rapid Metabolizer	*2, *3, *4, *4B, *5, *6, *7, *8, *9, *17
CYP2D6	*1/*1	Normal Metabolizer	*2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41
CYP3A5	*3/*3	Poor Metabolizer	*1D, *2, *3, *3B, *3C, *6, *7, *8, *9
CYP3A4	*1/*1	Normal Metabolizer	*1B, *2, *3, *12, *17, *22
VKORC1	-1639G>A G/G	Low Warfarin Sensitivity	-1639G>A
CYP4F2	*1/*1	Normal Function	*2, *3
CYP2C9	*1/*2	Intermediate Metabolizer	*2, *3, *4, *5, *6, *11
CYP2B6	*1/*1	Normal Metabolizer	*6, *9
CYP1A2	*1A/*1K	Intermediate Metabolizer - Possible Inducibility	*1C, *1D, *1F, *1K, *1L, *1V, *1W
SLCO1B1	521T>C T/T	Normal Function	521T>C, 388A>G
CFTR	F508del/F508del	Negative	Numerous
DPYD	*1/*1	Normal Metabolizer	Numerous
TPMT NUDT15	*1/*1 *1/*1	Normal Metabolizer Normal Metabolizer	*2, *3A, *3B, *3C, *4 *2, *3, *4, *5, *6, *7, *8, *9
UGT1A1	*1/*1	Normal Metabolizer	*6, *27, *28, *36, *37, *60, *80
G6PD	A- or A-/A-	Deficient	Numerous

Additional Test Results (added to this original report)

HLA-B*15:02	negative/positive	Positive	HLA-A*31:01	negative/negative	Negative
HLA-B*57:01	negative/positive	Positive			
HLA-B*58:01	negative/negative	Negative			

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Methodology: Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

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