

**BD Gentest™ Allelic Variant Single Donor Human Liver Microsome (HLM) Panel Available as of April 9, 2012**

Lot No. (Donor No.)	Genotype data	Gender/Age/Race	Cause of Death	Smoker	Medical History	Total P450c	CYP1A2	CYP2A6	CYP2B6	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP2E1	CYP3A4	CYP4A	FMO	UGT1A1	UGT1A4	UGT1A9*	CYP3A5	CYP3A4	
<b>HLM 2C8 *3*3 Allelic Variant</b>																							
<b>Catalog No.: 452144 Package Content: 0.5 mL Protein Content: 20 mg/mL in 250 mM sucrose Storage: Store at -80°C</b>																							
HH809	2C8*3*3	F/79/C	Stroke	Unknown	Malignant tumors on both kidneys. HTN recently diagnosed.	340	1020	1400		27	100	2500	220	68	1400	5800	2600	4400	770	650	2900	ND	ND
HH632	2C8*3*3	M/37/C	Closed head injury s/p motor vehicle accident (4 wheeler)	1/2 - 1 ppd x20 years	Jaundice at birth. Splenectomy 1993 or 1994. Stiff, sore joints from being thrown from 4 wheeler occasionally. Occasional hemorrhoids, OTC antacids.	170	590	370		4.5	19	1200	4.9	76	2200	1200	1900	270	520	2600	ND	ND	
HH611	2C8*3*3	F/44/C	Stroke	No	Hiatal hernia, reflux took meds.	350	380	1400		71	270	3600	31	58	3400	15400	3100	2500	1500	740	4300	ND	ND
<b>HLM 2C9 Allelic Variant</b>																							
<b>Catalog No.: 452142 Package Content: 0.5 mL Protein Content: 20 mg/mL in 250 mM sucrose Storage: Store at -80°C</b>																							
HH103-2	2C9*2*2	M/65/C	Closed head injury.	N/A	Cardio-myopathy	440	1000	1000		24	57	3300	36	68	2200	4400	3000	1600	1900	280	2200	ND	ND
HH519	2C9*3*3	M/70/C	Brain stem infarct	No	Type II DM, controlled with oral insulin. Parkinson's. Appendectomy.	450	370	460		51	140	720	8.4	82	2300	6400	1400	1700	970	550	1500	ND	ND
HH611	2C9*2*2	F/44/C	Stroke	No	Hiatal hernia, reflux took meds.	350	380	1400		71	270	3600	31	58	3400	15400	3100	2500	1600	740	4300	ND	ND
HH632	2C9*2*2	M/37/C	Closed head injury s/p motor vehicle accident (4 wheeler)	1/2 - 1 ppd x20 years	Jaundice at birth. Splenectomy 1993 or 1994. Stiff, sore joints from being thrown from 4 wheeler occasionally. Occasional hemorrhoids, OTC antacids.	170	590	370		4.5	19	1200	4.9	76	2200	1240	1900	270	520	2600	ND	ND	
HH651	2C9*2*3	M/31/C	Closed head injury s/p Motor cycle accident	Chewing tobacco 1 canday x9 years	Hand fracture 1996. Urologist for fertility purposes. Shoulder injury 1995 Allergic to Kefzol/Ancef and peas	110	200	110		4.5	15	550	9.4	68	1450	720	470	710	140	290	1300	ND	ND
HH809	2C9*2*2	F/79/C	Stroke	Unknown	Malignant tumors on both kidneys. HTN recently diagnosed.	340	1020	1400		27	100	2500	220	68	1400	5800	2600	4400	770	650	2900	ND	ND
HH821	2C9*2*3	F/82/C	CVA, ICH	No	Asthma, Type II Diabetes, IBS, Cholecystectomy, knee replacement, multilateral gastric surgeries, hypertension, treated with meds.	380	790	850		10	68	1700	450	2.2	930	5400	2700	3920	1200	800	5300	ND	ND
<b>HLM 2C19 Allelic Variant</b>																							
<b>Catalog No.: 452143 Package Content: 0.5 mL Protein Content: 20 mg/mL in 250 mM sucrose Storage: Store at -80°C</b>																							
HH689	2C19*2*2 (PM)	M/69/C	Cardiac Pulmonary Accident	No	PCP noted BPH 7 years ago; family not aware.	200	120	280		20	89	2800	5.4	79	2500	2300	1600	1800	690	490	2500	ND	ND
HH863	2C19*2*2 (PM)	F/46/C	Anoxia	4 ppd x20 years	Asthma, depression, Flovent.	390	520	1200		97	400	3700	18	140	3300	8700	2200	2000	1750	860	3100	ND	ND
HH40	2C19*2*2 (PM)	M/66/A	ICH	N/A	HTN, Benadryl	220	410	260		5.5	46	1700	1.6	25	2200	2400	860	1900	750	500	2400	ND	ND
<b>HLM 2D6 Allelic Variant</b>																							
<b>Catalog No.: 452141 Package Content: 0.5 mL Protein Content: 20 mg/mL in 250 mM sucrose Storage: Store at -80°C</b>																							
HFC532	2D6*4*4 (PM)	F/72/C	Intracranial Bleed	N/A	CVA 1/4/94. HTN and gout, broke hip and had hip repair in 1994. Took the following daily meds: Vasotec, Zyliprim, Coumadin, Maxide, Clonidine, and vitamins.	490	430	2400		11	620	6200	23	2	1600	4900	1600	1300	420	190	15000	ND	4900
HFC532-2	2D6*4*4 (PM)	F/72/C	Intracranial Bleed	N/A	CVA 1/4/94. HTN and gout, broke hip and had hip repair in 1994. Took the following daily meds: Vasotec, Zyliprim, Coumadin, Maxide, Clonidine, and vitamins.	410	360	1400		5	69	2600	9	0	1300	3000	1500	1800	360	350	35000	ND	ND
HH35	2D6*4*4 (PM)	F/42/C	Anoxia	N/A	Asthma, Accolate, Clariton, Paxil, Pributanol	370	240	630		30	360	5600	11	0.4	2500	3500	1500	3700	800	610	4300	ND	ND
HMC552	2D6*5*5 (PM)	M/47/C	Brain Stem Stroke	N/A	Cramps in legs. Took daily med Tegretol.	320	1100	750		7	430	5300	40	6	3800	4200	1400	2000	1400	250	1500	ND	4200
HMC641	2D6*5*6	M/53/C	CVA	N/A	Agent orange exposure in Vietnam, open sores on exposure to sun, cystitis, frequent heartburn, ankle damage, hypertension controlled by meds, elbow wound, leg surgery, ear surgery.	770	710	5400		180	2400	4400	84	11	2300	8300	1900	5100	930	540	12000	ND	ND
<b>HLM 3A5 *1*1 Allelic Variant with Western Blot data</b>																							
<b>Catalog No.: 452135 Package Content: 0.5 mL Protein Content: 20 mg/mL in 250 mM sucrose Storage: Store at -80°C</b>																							
HH47	3A5*1*1	F/53/AA	CVA	N/A	Hypertension, Diabetes	280	360	510		6.5	130	2900	4	130	3000	4100	900	2100	750	700	5000	9.3	62
HH739	3A5*1*1	F/59/AA	Intracranial hemorrhage	Smoked 16 yrs, quit 1974	Mild arthritis. Ovary removed and small bowel resection 86. Daily meds Coumadin, Inderal, H T2	210	250	600		19	110	2000	15	80	2100	1600	1300	2000	290	380	4000	6	11
HH785	3A5*1*1	M/56/AA	CVA, stroke	Quit over 20 years ago, prior amputation/ulceration unknown	Hemorrhoidectomy, sinus related problems. Hypertension, recently diagnosed. Atenolol.	220	400	230		25	140	830	13.2	46	1400	5800	740	2900	1000	670	3700	13	170
HH860	3A5*1*1	F/63/AA	CVA, ICH	1/4 ppd; records note donor quit, altho no time frame.	Diabetes, controlled with medication. Hypertension, controlled with medication. ESRD kidney disease.	500	960	840		68	190	2600	27	26	980	11500	2600	2500	1000	700	6700	35	320
HH867	3A5*1*1	M/26/AA	Head trauma, GSW	5 cigarettes per day	Normal	440	1000	400		79	400	3100	43	74	3000	4100	2500	2100	1100	650	3200	17	110
<b>HLM 3A5 *1*3 Allelic Variant with Western Blot data</b>																							
<b>Catalog No.: 452136 Package Content: 0.5 mL Protein Content: 20 mg/mL in 250 mM sucrose Storage: Store at -80°C</b>																							
HH757	3A5*1*3	M/57H	Intracranial hemorrhage	No	Syncope, CAD, cardiomyopathy. Hypertension x5+ years.	100	30	80		20	42	600	2.7	79	1700	1300	820	700	730	280	2300	9	19
HH868	3A5*1*3	M/66/A	CVA, ICH	No	Heart disease, hypertension. Heart valve replacement 1999. Kidney stones 1999.	110	120	110		5.8	44	1900	8.8	15	1300	1600	760	860	170	260	2300	13	23



HLM 3A5 *3*3 Allelic Variant with Western Blot Data																						
Catalog No.: 452137 Package Content: 0.5 mL Protein Content: 20 mg/mL in 250 mM sucrose Storage: Store at -80°C																						
HH189	3A5*3*3	F54/C	CVA	Not available	MVI and Calcium	300	230	1200	48	210	4100	270	37	2500	13600	1800	2000	560	700	2400	ND	120
Single gun shot wound to head				2 PPD x 50 yrs	History of diabetes. Back Surgery. Bursitis in shoulders had injections in shoulders in past. Repeated chronic congestion past 6 mos. Daily meds Xanax, Antihistamines	110	63	210	11	46	1100	10	52	770	400	230	480	200	180	1400	ND	15
UGT1A1 *28*28 Allelic Variant																						
Catalog No.: 452132 Package Content: 0.5 mL Protein Content: 20 mg/mL in 250 mM sucrose Storage: Store at -80°C																						
HH623	UGT1A1*28*28	M/62/C	Cerebrovascular Accident, Intracranial Bleed.	No	Hypertension x 10 yrs, controlled by meds. Hydrochlorothiazide. Erythromycin past 10 yrs.	120	350	290	16	97	3000	6.5	47	1000	3200	1700	1500	780	400	3200	ND	ND
HH645	UGT1A1*28*28	F/36/AA	Head Trauma s/p Gun shot wound	No	Broken Leg 24 yrs ago motor vehicle accident. D & C 8 mos ago.	340	1000	840	20	230	3500	5	69	3600	3800	2600	3400	560	500	3800	ND	ND
HH792	UGT1A1*28*28	F/51/C	Anoxia, suicide	1 PPD x 25 yrs	Back surgery 20 yrs ago	190	1000	310	12	96	3100	85	81	2600	3200	2600	4400	300	660	2500	ND	ND
HH859	UGT1A1*28*28	F/81/C	Cerebrovascular Accident	1 PPD x 40 yrs, 5 cigars PD x past 2 yrs	Fibromyalgia, TIA & CVA. HTN x 3 yrs. Hernia repair '78. Appendectomy '97.	300	740	2500	43	150	2500	64	0.3	1300	5500	1600	4500	200	690	2900	ND	ND
UGT1A1 *1*28 Allelic Variant																						
Catalog No.: 452133 Package Content: 0.5 mL Protein Content: 20 mg/mL in 250 mM sucrose Storage: Store at -80°C																						
HH677	UGT1A1*1*28	F/63/C	Subarachnoid hemorrhage.	1 PPD X 25 yrs	Borderline diabetic x 6 yrs, coronary bypass 1994, silent 2010, hypertension 10 yrs, arthritis in hands and hips, hysterectomy, cholecystectomy, cataract removal with implants, Coumadin, Atenolol, Imdur, Avid, Zestoretic.	120	320	510	24	62	1500	3.8	68	1300	3700	920	1100	360	380	2100	ND	ND
HH854	UGT1A1*1*28	F/61/C	CVA, ICH	3/4 PPD x 47 years (3 to 4 or 3/47)	Benign meningioma 2002, hypertensor 1999 treated with meds.	170	1100	630	28	110	2500	130	40	1300	3900	1700	2200	830	640	3600	ND	ND
HH855	UGT1A1*1*28	M/53/C	Anoxia s/p cardiac arrest (DCD)	No	Hypertension, NIDDM both controlled with medication. CABG 2/05. Stroke 11/04.	230	670	120	27	150	5800	95	190	3400	5200	3700	2100	1250	660	2500	ND	ND
UGT1A1 *1*1 Allelic Variant																						
Catalog No.: 452134 Package Content: 0.5 mL Protein Content: 20 mg/mL in 250 mM sucrose Storage: Store at -80°C																						
HH524	UGT1A1*1*1	M/51/C	Subarachnoid hemorrhage	Not available	Not available. Craniotomy on admission.	120	840	660	79	60	3200	17	110	2400	6800	1700	2200	2600	1000	4100	ND	ND
HH650	UGT1A1*1*1	F/58/C	Cerebrovascular Accident, Intracranial Bleed s/p Aneurysm	1 ppd x 45 years	Hypertension. High cholesterol. Benign bilat breast biopsies. Peptic ulcer late 70s.	130	590	720	21	100	1400	15	100	1800	3900	1500	1700	850	380	4200	ND	ND
HH746	UGT1A1*1*1	M/65/C	Head injury s/p tractor accident	Quit 4 years ago prior 2-3 ppd x 37 years	Hiatal hernia. Spinal curvature since birth.	220	170	190	16	32	1700	6.1	99	3200	1200	1200	1100	1100	420	1800	ND	ND

**CYP2C8**

The CYP2C8\*3 mutation has both an Arg139Lys and Lys399Arg amino acid substitutions in exons 3 and 8. CYP2C8\*3 donors have reduced catalytic activity for certain substrates such as paclitaxel and arachadonic acid.

**CYP2C9**

CYP2C9\*1: Arg<sub>144</sub>, Ile<sub>359</sub>; CYP2C9\*2: Cys<sub>144</sub>, Ile<sub>359</sub>; CYP2C9\*3: Arg<sub>144</sub>, Leu<sub>359</sub>. CYP2C9\*2 and \*3 mutants have reduced catalytic activity for certain substrates such as S-Warfarin relative to wild-type CYP2C9\*1 (\*1>\*2>\*3). CYP2C9\*1, \*2 and \*3 have similar rates of catalysis for diclofenac 4'-hydroxylation.

**CYP2D6**

CYP2D6\*4: Splicing defect resulting in protein with no activity (poor metabolizer phenotype; PM).

**CYP2C19**

CYP2C19\*2 and \*3 nucleotide changes leads to a splicing defect and premature stop codon, respectively, and therefore to a protein with no activity (poor metabolizer phenotype; PM).

**CYP3A5**

HLM donors with \*1\*1 and \*1\*3 genotypes have high CYP3A5 protein levels whereas \*3\*3 have low CYP3A5 protein levels. The CYP3A5\*3 defective allele is caused by a single nucleotide polymorphism in intron 3 leading to the insertion of an intronic sequence containing premature termination codons, and hence the very low CYP3A5 protein expression in subjects with the \*3\*3 genotype.

**UGT1A1**

UGT1A1\*28\*28 is a functional UGT promoter polymorphism associated with Gilbert's disease (hyperbilirubinemia/jaundice). The mutation results in lowered UGT1A1 protein expression. Relative UGT1A1 protein expression levels resulting from the allele combinations are: \*1\*1>\*1\*28>\*28\*28.

Note: Wild-Type donors (\*1\*1) for the following CYPs are not included as part of the Allelic Variant Panel: CYP2D6, 2C9, 2C19 and 2C8.

Donors with the highest activities for CYP2D6, CYP2C19 should be used as wild-type 2D6 and 2C19 genotypes. HG64 and HH37 can be used as wild-type controls for the CYP2D6 PM donors, and HG43 can be used as the wild-type donor for CYP2C19 PM donors, respectively.

Donor HH741 has the wild-type gene for both CYP2C9 and CYP2C8 (2C9\*1\*1 and CYP2C8\*1\*1) and can be used as the control for the CYP2C8 and CYP2C9 mutant donors.

Race Key
C: Caucasian
AA: African American
A: Asian
H: Hispanic
NA: Native American

