

# Product Characterization Sheet

## PHHX8017

MetMax™ Pooled Human Hepatocytes,  
Catalog Number 82215-82221 (see list)



### Specification

Number of donors	5
Volume	2.5 mL
Cell concentration	2.0 x 10 <sup>6</sup> /mL

### Drug Metabolism Activity

Drug Metabolizing Enzyme	Substrate (μM)	Metabolite Quantified	Activity (pmol/minute/ million cells)
CYP1A2	Phenacetin (100)	Acetaminophen	311 ± 49.07
CYP2A6	Coumarin (50)	7-HC, 7-HC-Sulfate, 7-HC-Glucuronide	102 ± 11
CYP2A6	Coumarin (50)	7-Hydroxycoumarin	71.2 ± 9.2
CYP2A6	Coumarin (50)	7-Hydroxycoumarin Glucuronide	14.2 ± 2.12
CYP2A6	Coumarin (50)	7-Hydroxycoumarin Sulfate	16.5 ± 0.44
CYP2B6	Bupropion (500)	Hydroxybupropion	101 ± 11.9
CYP2C8	Paclitaxel (20)	6α-hydroxypaclitaxel	22.3 ± 4.54
CYP2C9	Diclofenac (25)	4-OH Diclofenac	62.6 ± 6.75
CYP2C19	S-Mephenytoin (250)	4-OH S-Mephenytoin	27.4 ± 1.27
CYP2D6	Dextromethorphan (15)	Dextrophan	8.6 ± 1.8
CYP2E1	Chlorzoxazone (250)	6-OH Chlorzoxazone	45.8 ± 6
CYP3A4-1	Midazolam (20)	1-Hydroxymidazolam	131.3 ± 12.1
CYP3A4-2	Testosterone (200)	6β-hydroxytestosterone	1718 ± 425
ECOD	7-Ethoxycoumarin (100)	7-HC, 7-HC-Sulfate, 7-HC-Glucuronide	705 ± 49.5
ECOD	7-Ethoxycoumarin (100)	7-Hydroxycoumarin	682 ± 36
ECOD	7-Ethoxycoumarin (100)	7-Hydroxycoumarin Glucuronide	15.6 ± 2.64
ECOD	7-Ethoxycoumarin (100)	7-Hydroxycoumarin Sulfate	18.01 ± 1.35
UGT	7-Hydroxycoumarin (100)	7-Hydroxycoumarin Glucuronide	60 ± 3.48
SULT	7-Hydroxycoumarin (100)	7-Hydroxycoumarin Sulfate	24.8 ± 2.91
GST	Acetaminophen (10)	Acetaminophen Glutathione	131 ± 5.2
UGT	Acetaminophen (10)	Acetaminophen Glucuronide	22 ± 2.7
SULT	Acetaminophen (10)	Acetaminophen Sulfate	21.2 ± 2.4
FMO	Benzydamine HCl (250)	Benzydamine-N-Oxide	159 ± 32.6
MAO	Kynuramine HCl (160)	4-hydroxyquinoline	474 ± 37.2
AO	Carbazeran HCl (10)	4-Hydroxycarbazeran	21.7 ± 3.38
NAT1	4-Aminobenzoic HCl (200)	N-Acetyl-p-aminobenzoic acid	9.93 ± 1.13
NAT2	Sulfamethazine (100)	N-Acetyl-sulfamethazine	10.1 ± 0.29

**CYP450 Activity Assessment:** MetMax™ pooled human hepatocytes were thawed in a 37°C water bath. A 1000 μL Eppendorf pipette (with tip) was used to pipet up and down three times to achieve homogeneity. MetMax™ hepatocytes were prepared at a density of 2 million cells per mL. Equal volumes of MetMax™ hepatocytes and 2X substrate were incubated for 15 minutes with isoform-selective substrates at 37°C. The final cell density of MetMax™ hepatocytes and substrate was 1.0 million cells/mL in a 96-well plate (96 well plates pre-loaded with 50 μL of 2X substrates per well, and metabolism initiated by adding 50 μL of MetMax™ hepatocytes to each of the wells, 100,000 hepatocytes/well). The metabolites were identified and analyzed using LC-MS/MS.

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### Donor Demographics

	Donor 1	Donor 2	Donor 3	Donor 4	Donor 5
<b>Gender</b>	Male	Male	Female	Male	Female
<b>Age</b>	41 years	44 years	46	30 years	41 years
<b>Race</b>	African American	Hispanic	Hispanic	Caucasian	Caucasian
<b>Cause of death</b>	Anoxia	CVA 2 <sup>nd</sup> to ICH	CVA 2 <sup>nd</sup> to ICH	Head trauma	CVA 2 <sup>nd</sup> to ICH
<b>BMI</b>	48.8	23.5	25.2	26.9	24.5
<b>Smoking</b>	Yes	Yes	No	Yes	Yes
<b>Alcohol</b>	Yes	Yes	No	Yes	Yes
<b>Substance abuse</b>	Yes	No	No	Yes	Yes
<b>Medical history</b>	HTN, CHF	NA	Thyroid disorder	NA	Asthma, seizures, GERD
<b>Infectious diseases</b>	HBV-, HCV-, CMV+, HIV-	HBV-, HCV-, HIV-, CMV+	HBV-, HCV-, HIV-, CMV+	HBV-, HCV-, HIV-, CMV-	HBV-, HCV-, HIV-, CMV-

#### IVAL cell culture media and tissue culture plates used in this evaluation:

- Substrate preparation for incubation of hepatocytes - Cat. No. 81039/81040 - HQM™ Hepatocyte Incubation Media, 50 mL tube/500 mL bottle
- Available MetMax™ Human Hepatocyte Products:

82215: PHHX MetMax®-C, Complete; High Performance Pooled Human Hepatocytes, 2.5mL, 5x10<sup>6</sup> cells, Mixed Gender  
 82216: PHHX-OX; Pathway Specific MetMax™ Pooled Human Hepatocyte; 2.5 mL; 5 x 10<sup>6</sup> cells; Mixed Gender  
 82217: PHHX-UGT; Pathway Specific MetMax™ Pooled Human Hepatocyte; 2.5 mL; 5 x 10<sup>6</sup> cells; Mixed Gender  
 82218: PHHX-SULT; Pathway Specific MetMax™ Pooled Human Hepatocyte; 2.5 mL; 5 x 10<sup>6</sup> cells; Mixed Gender  
 82219: PHHX-NAT; Pathway Specific MetMax™ Pooled Human Hepatocyte; 2.5 mL; 5 x 10<sup>6</sup> cells; Mixed Gender  
 82220: PHHX-GST; Pathway Specific MetMax™ Pooled Human Hepatocyte; 2.5 mL; 5 x 10<sup>6</sup> cells; Mixed Gender  
 82221: PHHX-MT; Pathway Specific MetMax™ Pooled Human Hepatocyte; 2.5 mL; 5 x 10<sup>6</sup> cells; Mixed Gender

#### To inquire about our products and services or for technical questions please contact:

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