XENOTECH
A BioIVT Company

Data Sheet
Certificate of Analysis

Human Liver Microsomes – Pool of 50

Lot No. 2310056

Human Liver Microsomes
Mixed Gender, Pool of 50
Suspension medium: 250 mM sucrose

H0610 0.5 mL at 20 mg/mL
H0620 1.0 mL at 20 mg/mL
H0630 5.0 mL at 20 mg/mL
H0640 50.0 mL at 20 mg/mL

Specific Content and Enzyme Activities		***Content / Rate***
Cytochrome P450 content	(nmol/mg protein)	0.310
Cytochrome b_5 content	(nmol/mg protein)	0.309
NADPH-cytochrome c reductase	(nmol/mg protein/min)	147 ± 2

Enzyme	**Marker Substrate Reaction**	**[S] (µM)**	**Rate (pmol/mg protein/min)**
CYP1A2	Phenacetin *O*-dealkylation	80	363 ± 40
CYP2A6	Coumarin 7-hydroxylation	50	849 ± 34
CYP2B6	Bupropion hydroxylation	500	403 ± 36
CYP2C8	Amodiaquine *N*-dealkylation	20	1930 ± 110
CYP2C9	Diclofenac 4'-hydroxylation	100	2180 ± 40
CYP2C19	*S*-Mephenytoin 4'-hydroxylation	400	48.6 ± 5.6
CYP2D6	Dextromethorphan *O*-demethylation	80	228 ± 8
CYP2E1	Chlorzoxazone 6-hydroxylation	500	2190 ± 60
CYP2J2	Ebastine hydroxylation	30	307 ± 19
CYP3A4/5	Testosterone 6β-hydroxylation	250	2370 ± 120
CYP3A4/5	Midazolam 1'-hydroxylation	30	805 ± 26
CYP4A11	Lauric acid 12-hydroxylation	100	1780 ± 10
FMO	Benzydamine *N*-oxygenation	500	933 ± 30
UGT1A1	17β-Estradiol 3-glucuronidation	100	945 ± 64
UGT1A3	Chenodeoxycholic acid 24-glucuronidation	300	31.5 ± 0.9
UGT1A4	Trifluoperazine glucuronidation	25	736 ± 8
UGT1A6	1-Naphthol glucuronidation	500	16720 ± 1350
UGT1A9	Propofol glucuronidation	50	4550 ± 360
UGT2B7	Morphine 3-glucuronidation	1000	3490 ± 230
UGT2B17	Testosterone 17-glucuronidation	50	561 ± 37

Values for enzyme activities were determined at a single substrate concentration and are mean ± standard deviation of three or more determinations.

To measure cytochrome P450 (CYP) activity, liver microsomes (50 µg/mL) were incubated in triplicate at 37 ± 2°C for 10 minutes in potassium phosphate buffer (50 mM, pH 7.4), containing $MgCl_2$ (3.0 mM), EDTA (1.0 mM), NADP (1.0 mM), glucose-6-phosphate (5.0 mM), glucose-6-phosphate dehydrogenase (1 Unit/mL) and marker substrate, at the final concentrations indicated. Metabolite formation was determined by validated LC-MS/MS methods with deuterated metabolites as internal standards. FMO activity was measured under similar conditions except the protein concentration was 1 mg/mL and the buffer was 49 mM Tricine (pH 8.5)

To measure UDP-glucuronosyltransferase (UGT) activity, liver microsomes (10 - 250 µg/mL) were incubated in triplicate at 37 ± 2°C for 5 or 10 minutes in Tris-HCl (100 mM, pH 7.7 at 37°C), CHAPS (0.5 mM), EDTA (1.0 mM), $MgCl_2$ (10 mM), D-saccharic acid 1,4-lactone (100 µM), uridine diphosphate-glucuronic acid (10.0 mM) and marker substrate at the final concentrations indicated.

Store at -80°C

CAUTION: This sample should be considered as a potential biohazard and universal precautions should be followed. Intended for *in vitro* use only.

This data sheet serves as a Certificate of Analysis and has been approved by Stephanie Helmstetter, Assistant Director.
Signature and Date: Stephanie Helmstetter 16 October 2023

Donor Information

Sample	Gender	Age (Yrs)	Race	Cause of Death
342	F	31	Caucasian	Anoxia
387	M	60	Caucasian	Cerebrovascular Accident
403	F	51	Caucasian	Anoxia
409	F	63	Hispanic	Cerebrovascular Accident
415	M	56	Caucasian	Anoxia
424	F	39	Caucasian	Cerebrovascular Accident
447	F	54	Caucasian	Anoxia
460	F	43	Hispanic	Cerebrovascular Accident
467	M	33	Caucasian	Anoxia
468	M	47	Caucasian	Cerebrovascular Accident
471	M	49	Caucasian	Anoxia
476	F	46	Caucasian	Cerebrovascular Accident
477	F	65	Caucasian	Anoxia
486	F	49	Caucasian	Anoxia
488	M	57	Caucasian	Head Trauma
490	F	60	Caucasian	Cerebrovascular Accident
491	M	46	Caucasian	Cerebrovascular Accident
498	M	33	Caucasian	Head Trauma
501	F	58	Caucasian	Anoxia
503	F	64	Caucasian	Anoxia
516	M	49	Caucasian	Cerebrovascular Accident
517	F	47	Caucasian	Cerebrovascular Accident
519	M	48	African American	Cerebrovascular Accident
521	M	56	Caucasian	Anoxia
526	M	34	Caucasian	Head Trauma
528	M	60	Caucasian	Head Trauma
529	M	26	Caucasian	Head Trauma
530	F	64	Caucasian	Head Trauma
540	F	54	Caucasian	Head Trauma
546	F	53	Caucasian	Cerebrovascular Accident
550	F	68	Caucasian	Anoxia
553	M	74	African American	Cerebrovascular Accident
563	F	52	Caucasian	Cerebrovascular Accident
570	M	49	Caucasian	Cerebrovascular Accident
578	F	56	Hispanic	Cerebrovascular Accident
593	M	59	Caucasian	Head Trauma
723	F	57	Caucasian	Cerebrovascular Accident
816	M	55	Hispanic	Head Trauma
833	M	48	Hispanic	Anoxia
946	M	50	African American	Anoxia
951	M	62	Caucasian	Cerebrovascular Accident
962	M	47	Caucasian	Anoxia
976	F	61	Caucasian	Head Trauma
997	M	63	Caucasian	Anoxia
1005	M	45	Caucasian	Cerebrovascular Accident
1020	F	24	Caucasian	Cerebrovascular Accident

Donor Information

Sample	Gender	Age (Yrs)	Race	Cause of Death
1068	M	43	Caucasian	Head Trauma
1106	F	20	Caucasian	Cerebrovascular Accident
1124	M	22	Caucasian	Cerebrovascular Accident
1155	F	43	Caucasian	Cerebrovascular Accident

Serology information

- Antibody to Cytomegalovirus: 27 of 50 donors tested positive, 1 donor not tested.
- RPR*: All donors tested negative.
- HIV, HbsAg, and HCV**: All donors tested negative.

* Rapid Plasma Reagin

** Antibody to Human Immunodeficiency Virus, Hepatitis B Surface Antigen, Antibody to Hepatitis C Virus, respectively.