XENOTECH
A BioIVT Company

Data Sheet
Certificate of Analysis

HU1A1.NA Lot No. 1810020

Human Liver Microsomes
Male, Individual No. 1042
0.5 mL at 20 mg protein / mL
Suspension medium: 250 mM sucrose

Genotype, Specific Content and Activities [a]		***Content / Rate***
UGT1A1 Allelic variant		UGT1A1*28/*28
Cytochrome P450	(nmol/mg protein)	0.277
Cytochrome b_5	(nmol/mg protein)	0.284
NADPH-cytochrome *c* reductase	(nmol/mg protein/min)	179 ± 5

Enzyme	**Marker Substrate Reaction**	**[S] (µM)**	**Rate (pmol/mg protein/min)**
CYP1A2	Phenacetin *O*-dealkylation	80	159 ± 7
CYP2A6	Coumarin 7-hydroxylation	50	407 ± 37
CYP2B6	Bupropion hydroxylation	500	88.4 ± 10.5
CYP2C8	Amodiaquine *N*-dealkylation	20	1190 ± 30
CYP2C9	Diclofenac 4'-hydroxylation	100	2530 ± 70
CYP2C19	*S*-Mephenytoin 4'-hydroxylation	400	28.2 ± 3.7
CYP2D6	Dextromethorphan *O*-demethylation	80	147 ± 12
CYP2E1	Chlorzoxazone 6-hydroxylation	500	2090 ± 120
CYP3A4/5	Testosterone 6β-hydroxylation	30	1910 ± 250
CYP3A4	Midazolam 1'-hydroxylation	250	275 ± 17
CYP4A11	Lauric acid 12-hydroxylation	30	1290 ± 30
UGT1A1	17β-Estradiol 3-glucuronidation	100	232 ± 21

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.
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.

Sample	**Gender**	**Age (yrs)**	**Race**	**Cause of Death**
H1042	Male	51	Caucasian	Cerebrovascular accident

Serology information

- This donor tested negative for cytomegalovirus
- This donor tested negative for HIV, HbsAg, and HCV*
- This donor tested negative for RPR**

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

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, Senior Manager.
Signature and Date: Stephanie Helmstetter 15 February 2022