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Data Sheet
Certificate of Analysis

H1000 Lot No. 2310283

Human Liver Microsomes
Male, Pool of 10
0.5 mL at 20 mg protein / mL
Suspension medium: 250 mM sucrose

Specific Content and Enzyme Activities		***Content / Rate***
Cytochrome P450 content	(nmol/mg protein)	0.478
Cytochrome b_5 content	(nmol/mg protein)	0.429
NADPH-cytochrome c reductase	(nmol/mg protein/min)	203 ± 2
Glucuronidation of 4-Methylumbelliferone	(nmol/mg protein/min)	120 ± 15

Enzyme	**Marker Substrate Reaction**	**[S] (µM)**	**Rate (pmol/mg protein/min)**
CYP1A2	Phenacetin *O*-dealkylation	80	543 ± 28
CYP2A6	Coumarin 7-hydroxylation	50	1060 ± 50
CYP2B6	Bupropion hydroxylation	500	459 ± 41
CYP2C8	Amodiaquine *N*-dealkylation	20	2280 ± 90
CYP2C9	Diclofenac 4'-hydroxylation	100	3280 ± 180
CYP2C19	*S*-Mephenytoin 4'-hydroxylation	400	56.5 ± 5.2
CYP2D6	Dextromethorphan *O*-demethylation	80	195 ± 8
CYP2E1	Chlorzoxazone 6-hydroxylation	500	2340 ± 210
CYP3A4/5	Testosterone 6β-hydroxylation	250	2710 ± 130
CYP3A4/5	Midazolam 1'-hydroxylation	30	856 ± 25
CYP4A11	Lauric acid 12-hydroxylation	100	2400 ± 30

Characterization is performed when the first lot of a product from a given subcellular fraction (*e.g., S9*) is prepared. Subsequent lots are subject to a verification test only. 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 (8.0 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 30 October 2023

Donor Information

Sample	Gender	Age (Yrs)	Race	Cause of Death
468	M	47	Caucasian	Cerebrovascular accident
479	M	65	Caucasian	Anoxia
533	M	28	African American	Anoxia
549	M	55	Caucasian	Cerebrovascular accident
551	M	2	Caucasian	Head Trauma
772	M	46	Caucasian	Anoxia
790	M	52	Caucasian	Cerebrovascular accident
803	M	23	African American	Head Trauma
812	M	73	Caucasian	Cerebrovascular accident
1007	M	20	Caucasian	Head Trauma

Serology information

- Cytomegalovirus: 8 donors tested positive.
- RPR*: All donors tested negative
- HIV, HTLV, HbsAg, and HCV**: All donors tested negative.

* Rapid Plasma Reagin

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

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