

## XTreme 200

**Lot No. 1910095**

Human Liver S9 Fraction

Mixed Gender, Pool of 200

Suspension medium: 50 mM Tris-HCl,  
150 mM KCl, 2 mM EDTA

**H2610.S9 0.5 mL at 20 mg/mL**

**H2620.S9 1.0 mL at 20 mg/mL**

**H2630.S9 5.0 mL at 20 mg/mL**

**H2640.S9 50.0 mL at 20 mg/mL**

Specific Content and Enzyme Activities		Content / Rate
Cytochrome P450 content	(nmol/mg protein)	0.178
Cytochrome b <sub>5</sub> content	(nmol/mg protein)	0.066
7-Ethoxycoumarin O-dealkylation	(pmol/mg protein/min)	163 ± 9
Glucuronidation of 4-methylumbelliferone	(nmol/mg protein/min)	28.3 ± 2.2
CDNB <sup>a</sup>	(nmol/mg protein/min)	424 ± 32
Phthalazine oxidation	(pmol/mg protein/min)	1150 ± 70

  

Enzyme	Marker Substrate Reaction	[S] (μM)	Rate (pmol/mg protein/min)
CYP1A2	Phenacetin O-dealkylation	80	135 ± 13
CYP2A6	Coumarin 7-hydroxylation	50	314 ± 2
CYP2B6	Bupropion hydroxylation	500	114
CYP2C8	Amodiaquine N-dealkylation	20	446 ± 19
CYP2C9	Diclofenac 4'-hydroxylation	100	526 ± 4
CYP2C19	S-Mephenytoin 4'-hydroxylation	400	27.5 ± 2.6
CYP2D6	Dextromethorphan O-demethylation	80	60.1 ± 2.3
CYP2E1	Chlorzoxazone 6-hydroxylation	500	406 ± 35
CYP3A4/5	Testosterone 6β-hydroxylation	250	795 ± 47
CYP3A4/5	Midazolam 1'-hydroxylation	30	158 ± 1
CYP4A11	Lauric acid 12-hydroxylation	100	318 ± 18

<sup>a</sup> 1-Chloro-2,4-dinitrobenzene-glutathione conjugation by glutathione S-transferase.

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

Each donor is equally represented in this pool.



## 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.

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This data sheet serves as a Certificate of Analysis and has been approved by Stephanie Helmstetter, Assistant Director.

Signature and Date: Stephanie Helmstetter 06 February 2023

## **Assay conditions**

To measure cytochrome P450 (CYP) activity, liver S9 samples (0.2 mg/mL) were incubated in triplicate at  $37 \pm 2^\circ\text{C}$  for 10 minutes in potassium phosphate buffer (50 mM, pH 7.4), containing  $\text{MgCl}_2$  (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 7-ethoxycoumarin (500  $\mu\text{M}$ ), 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 S9 samples (0.1 mg/mL) were incubated in triplicate at  $37 \pm 2^\circ\text{C}$  for 10 minutes in Tris-HCl (100 mM, pH 7.7 at  $37^\circ\text{C}$ ), CHAPS (0.5 mM), EDTA (1.0 mM),  $\text{MgCl}_2$  (10 mM), D-saccharic acid 1,4-lactone (100  $\mu\text{M}$ ), uridine diphosphate-glucuronic acid (8.0 mM) and 4-methylumbelliferone (1 mM), at the final concentrations indicated. Metabolite formation was determined by validated LC-MS/MS methods with deuterated metabolites as internal standards.

To measure glutathione S-transferase activity (GST), liver S9 samples (5 to 50  $\mu\text{g/mL}$ ) were incubated in triplicate at  $37 \pm 2^\circ\text{C}$  for 10 minutes in potassium phosphate buffer (100 mM, pH 6.5), glutathione (1 mM), and CDNB (1 mM), at the final concentrations indicated. Reaction rates are determined by photometric kinetic measurements at 340 nm.

To measure aldehyde oxidase (AO) activity, liver S9 samples (0.05 mg/mL) were incubated in triplicate at  $37 \pm 2^\circ\text{C}$  for 1 minute in potassium phosphate buffer (50 mM, pH 7.4) and phthalazine (25  $\mu\text{M}$ ), at the final concentrations indicated. Metabolite formation was determined by validated LC-MS/MS methods with deuterated metabolites as internal standards.

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## Donor Information

Sample	Gender	Age (Yrs)	Race	Cause of Death
248	M	29	Hispanic	Head trauma
255	M	46	Hispanic	Anoxia
262	M	42	Caucasian	Cerebrovascular accident
310	F	52	Caucasian	Cerebrovascular accident
342	F	31	Caucasian	Anoxia
375	M	23	Caucasian	Head trauma
380	M	47	Caucasian	Head trauma
384	M	53	Caucasian	Anoxia
386	M	32	Caucasian	Head trauma
400	F	42	Caucasian	Anoxia
402	M	32	Caucasian	Anoxia
405	M	32	Caucasian	Anoxia
407	M	69	Caucasian	Cerebrovascular accident
408	M	32	Caucasian	Head trauma
409	F	63	Hispanic	Cerebrovascular accident
411	M	55	Caucasian	Anoxia
412	M	66	Caucasian	Cerebrovascular accident
418	F	62	Hispanic	Anoxia
437	M	62	Caucasian	Cerebrovascular accident
438	M	56	Caucasian	Head trauma
439	F	78	Caucasian	Anoxia
451	M	58	Caucasian	Cerebrovascular accident
453	F	25	Caucasian	Anoxia
460	F	43	Hispanic	Cerebrovascular accident
461	F	74	Caucasian	Cerebrovascular accident
466	M	48	Caucasian	Anoxia
474	M	33	Caucasian	Anoxia
475	M	27	Caucasian	Anoxia
479	M	65	Caucasian	Anoxia
484	F	55	Caucasian	Cerebrovascular accident
487	M	48	Caucasian	Head trauma
488	M	57	Caucasian	Head trauma
490	F	60	Caucasian	Cerebrovascular accident
496	F	58	Caucasian	Cerebrovascular accident
499	F	55	Caucasian	Cerebrovascular accident
506	F	48	Caucasian	Cerebrovascular accident
515	F	59	Caucasian	Cerebrovascular accident
530	F	64	Caucasian	Head trauma
532	M	26	Caucasian	Head trauma
533	M	28	African American	Anoxia
536	F	34	Caucasian	Anoxia
542	F	53	Caucasian	Cerebrovascular accident
543	F	58	Caucasian	Anoxia

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## Donor Information

Sample	Gender	Age (Yrs)	Race	Cause of Death
544	M	45	Caucasian	Anoxia
546	F	53	Caucasian	Cerebrovascular accident
548	F	61	Caucasian	Anoxia
552	M	40	American Indian	Head trauma
554	F	43	Caucasian	Anoxia
555	M	69	Caucasian	Anoxia
556	F	49	Caucasian	Cerebrovascular accident
558	M	50	Caucasian	Anoxia
561	M	55	African American	Cerebrovascular accident
569	M	60	Caucasian	Anoxia
572	M	68	Caucasian	Cerebrovascular accident
574	M	63	Caucasian	Cerebrovascular accident
576	F	55	Caucasian	Cerebrovascular accident
577	F	23	Caucasian	Cerebrovascular accident
582	F	60	Caucasian	Anoxia
589	F	55	Caucasian	Cerebrovascular accident
594	F	51	Caucasian	Cerebrovascular accident
596	F	17	Caucasian	Head trauma
603	F	67	Caucasian	Head trauma
605	F	49	Caucasian	Cerebrovascular accident
608	F	54	Caucasian	Anoxia
611	F	25	Caucasian	Cerebrovascular accident
617	F	52	Caucasian	Cerebrovascular accident
619	F	45	Caucasian	Cerebrovascular accident
625	F	39	Caucasian	Anoxia
628	F	62	Caucasian	Cerebrovascular accident
634	F	63	Caucasian	Cerebrovascular accident
659	F	33	Hispanic	Anoxia
686	F	52	Caucasian	Anoxia
706	F	53	Caucasian	Cerebrovascular accident
715	M	21	Caucasian	Head trauma
726	F	48	Caucasian	Cerebrovascular accident
728	M	39	Caucasian	Cerebrovascular accident
729	F	66	Caucasian	Head trauma
736	F	46	Caucasian	Anoxia
744	M	57	Caucasian	Cerebrovascular accident
750	F	53	Caucasian	Anoxia
751	M	29	Caucasian	Anoxia
755	F	39	Caucasian	Anoxia
758	F	55	Caucasian	Cerebrovascular accident
761	M	70	Caucasian	Cerebrovascular accident
765	F	39	Caucasian	Cerebrovascular accident
766	F	38	Caucasian	Anoxia

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Sample	Gender	Age (Yrs)	Race	Cause of Death
769	M	58	Caucasian	Head trauma
772	M	46	Caucasian	Anoxia
773	M	46	Caucasian	Head trauma
778	M	61	Caucasian	Cerebrovascular accident
780	F	48	African American	Cerebrovascular accident
788	F	58	Caucasian	Cerebrovascular accident
794	M	36	Hispanic	Head trauma
807	F	47	Caucasian	Cerebrovascular accident
808	M	57	Caucasian	Cerebrovascular accident
810	M	37	Caucasian	Head trauma
811	M	16	Caucasian	Head trauma
812	M	73	Caucasian	Cerebrovascular accident
814	F	65	Caucasian	Cerebrovascular accident
815	M	52	Caucasian	Anoxia
817	F	31	Caucasian	Anoxia
818	M	48	Hispanic	Cerebrovascular accident
819	F	49	Caucasian	Head trauma
820	F	65	Caucasian	Cerebrovascular accident
821	F	51	Caucasian	Anoxia
839	F	25	African American	Cerebrovascular accident
840	M	77	Caucasian	Cerebrovascular accident
841	M	74	Caucasian	Head trauma
842	F	60	Caucasian	Anoxia
847	F	55	Caucasian	Cerebrovascular accident
851	F	47	Caucasian	Cerebrovascular accident
864	F	46	Caucasian	Cerebrovascular accident
956	F	68	African American	Anoxia
962	M	47	Caucasian	Anoxia
966	F	53	Caucasian	Head trauma
968	M	54	Caucasian	Cerebrovascular accident
970	M	68	Caucasian	Anoxia
973	F	63	Caucasian	Cerebrovascular accident
974	M	19	Hispanic	Anoxia
975	M	46	Hispanic	Cerebrovascular accident
976	F	61	Caucasian	Head trauma
977	M	54	Caucasian	Head trauma
978	F	56	Hispanic	Cerebrovascular accident
982	F	30	Caucasian	Anoxia
983	M	49	Caucasian	Anoxia
985	F	58	Caucasian	Cerebrovascular accident
989	F	47	Caucasian	Cerebrovascular accident
990	M	38	Caucasian	Cerebrovascular accident
994	F	73	Caucasian	Cerebrovascular accident

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## Donor Information

Sample	Gender	Age (Yrs)	Race	Cause of Death
995	F	45	Caucasian	Cerebrovascular accident
996	F	10	Caucasian	Anoxia
997	M	63	Caucasian	Anoxia
998	F	63	Caucasian	Cerebrovascular accident
999	F	19	Hispanic	Anoxia
1001	F	50	American Indian	Cerebrovascular accident
1002	M	48	African American	Cerebrovascular accident
1003	F	75	Caucasian	Cerebrovascular accident
1004	F	45	Caucasian	Head trauma
1005	M	45	Caucasian	Cerebrovascular accident
1006	M	50	Caucasian	Anoxia
1007	M	20	Caucasian	Head trauma
1008	M	36	Hispanic	Cerebrovascular accident
1009	M	22	Caucasian	Cerebrovascular accident
1010	M	63	Caucasian	Cerebrovascular accident
1011	M	65	Caucasian	Cerebrovascular accident
1012	M	41	Caucasian	Anoxia
1013	M	51	Caucasian	Cerebrovascular accident
1014	M	55	Caucasian	Anoxia
1015	M	59	Caucasian	Cerebrovascular accident
1016	M	64	Hispanic	Head trauma
1018	M	59	Caucasian	Anoxia
1020	F	24	Caucasian	Cerebrovascular accident
1022	M	41	Caucasian	Anoxia
1024	F	59	Caucasian	Anoxia
1025	M	57	Caucasian	Cerebrovascular accident
1026	F	55	African American	Head trauma
1027	F	63	Caucasian	Cerebrovascular accident
1028	F	51	African American	Cerebrovascular accident
1030	M	67	Caucasian	Cerebrovascular accident
1032	M	64	Caucasian	Cerebrovascular accident
1033	F	55	Caucasian	Cerebrovascular accident
1042	M	51	Caucasian	Cerebrovascular accident
1044	F	19	Caucasian	Anoxia
1045	M	48	Caucasian	Cerebrovascular accident
1046	M	49	Caucasian	Anoxia
1047	M	53	Hispanic	Cerebrovascular accident
1051	F	57	African American	Cerebrovascular accident
1054	M	19	Caucasian	Head trauma
1055	F	29	African American	Head trauma
1060	M	49	Hispanic	Cerebrovascular accident
1061	M	40	Hispanic	Cerebrovascular accident
1063	M	43	Hispanic	Head trauma
1066	M	60	Caucasian	Cerebrovascular accident

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## Donor Information

Sample	Gender	Age (Yrs)	Race	Cause of Death
1068	M	43	Caucasian	Head trauma
1069	M	39	Caucasian	Cerebrovascular accident
1074	F	51	African American	Cerebrovascular accident
1075	M	56	Caucasian	Cerebrovascular accident
1077	F	57	Caucasian	Head trauma
1079	M	41	Caucasian	Anoxia
1081	M	55	Caucasian	Cerebrovascular accident
1084	M	52	Caucasian	Cerebrovascular accident
1087	M	51	African American	Cerebrovascular accident
1088	F	61	Caucasian	Cerebrovascular accident
1089	M	55	Caucasian	Anoxia
1090	M	49	Caucasian	Cerebrovascular accident
1091	M	74	Caucasian	Cerebrovascular accident
1093	F	48	Caucasian	Cerebrovascular accident
1094	M	59	African American	Cerebrovascular accident
1095	F	60	Caucasian	Cerebrovascular accident
1097	M	36	Caucasian	Cerebrovascular accident
1098	M	54	Caucasian	Head trauma
1101	F	47	Caucasian	Anoxia
1102	M	48	Caucasian	Cerebrovascular accident
1106	F	20	Caucasian	Cerebrovascular accident
1107	F	55	Caucasian	Cerebrovascular accident
1108	F	45	African American	Cerebrovascular accident
1117	F	66	Caucasian	Cerebrovascular accident
1130	F	65	Caucasian	Cerebrovascular accident
1155	F	43	Caucasian	Cerebrovascular accident
1157	F	59	Hispanic	Head trauma

### Serology information

- Cytomegalovirus: 123 of 200 donors tested positive and 1 donor was not determined.
- RPR\*: 200 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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