

## XTreme 200

**Lot No. 1610440**

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**

| <b>Specific Content and Enzyme Activities</b> |                       | <b>Content / Rate</b> |
|---|-----------------------|-----------------------|
| Cytochrome P450 content                       | (nmol/mg protein)     | 0.111                 |
| Cytochrome b <sub>5</sub> content             | (nmol/mg protein)     | 0.074                 |
| 7-Ethoxycoumarin O-dealkylation               | (pmol/mg protein/min) | 191                   |
| Glucuronidation of 4-methylumbelliferone      | (nmol/mg protein/min) | 34.8 ± 1.1            |
| CDNB <sup>a</sup>                             | (nmol/mg protein/min) | 492 ± 13              |
| Phthalazine oxidation                         | (pmol/mg protein/min) | 4440 ± 170            |

  

| <b>Enzyme</b> | <b>Marker Substrate Reaction</b> | <b>[S] (μM)</b> | <b>Rate (pmol/mg protein/min)</b> |
|---------------|----------------------------------|-----------------|-----------------------------------|
| CYP1A2        | Phenacetin O-dealkylation        | 80              | 122 ± 3                           |
| CYP2A6        | Coumarin 7-hydroxylation         | 50              | 339 ± 21                          |
| CYP2B6        | Bupropion hydroxylation          | 500             | 149 ± 4                           |
| CYP2C8        | Amodiaquine N-dealkylation       | 20              | 457 ± 11                          |
| CYP2C9        | Diclofenac 4'-hydroxylation      | 100             | 441 ± 5                           |
| CYP2C19       | S-Mephenytoin 4'-hydroxylation   | 400             | 18.2 ± 2.1                        |
| CYP2D6        | Dextromethorphan O-demethylation | 80              | 51.9 ± 1.9                        |
| CYP2E1        | Chlorzoxazone 6-hydroxylation    | 500             | 408 ± 28                          |
| CYP3A4/5      | Testosterone 6β-hydroxylation    | 250             | 763 ± 66                          |
| CYP3A4/5      | Midazolam 1'-hydroxylation       | 30              | 166 ± 7                           |
| CYP4A11       | Lauric acid 12-hydroxylation     | 100             | 335 ± 14                          |

<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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Datasheet prepared 04 February 2019

## **Assay conditions**

To measure cytochrome P450 (CYP) activity, liver S9 samples (0.2 mg/mL) were incubated in triplicate at  $37 \pm 1^\circ\text{C}$  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  $37 \pm 1^\circ\text{C}$  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  $37 \pm 1^\circ\text{C}$  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  $37 \pm 1^\circ\text{C}$  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                   |
| 448    | F      | 58        | 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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| 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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## Donor Information

| 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 |
| 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 |
| 995    | F      | 45        | Caucasian        | Cerebrovascular accident |

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## Donor Information

| Sample | Gender | Age (Yrs) | Race             | Cause of Death           |
|--------|--------|-----------|------------------|--------------------------|
| 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: 124 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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