

## CERTIFICATE OF ANALYSIS

### HUMAN 10-DONOR POOLED CRYOPRESERVED HEPATOCYTES

GRADE S, QUALIFIED FOR SUSPENSION ASSAYS

**Catalog number: PR-LIV-S10**

Batch numbers: LIV-10-012

FOR RESEARCH USE ONLY. Not intended for human or animal diagnostic or therapeutic uses. HUMAN CRYOPRESERVED SUSPENSION HEPATOCYTES are not recommended for cultivation. Human primary cells must be treated as potential pathogens. Users need to wear personal protective equipment during the work. DO NOT USE DRY ICE DURING WORK, STORAGE, OR TRANSPORTATION.

#### 1. BIOLOGICAL MATERIAL

##### 1.1. INFORMATION ABOUT DONORS

Batch number	Sex	Ethnicity	Age	Tobacco use	Alcohol use	Pathology or Cause of death
HEPXXX	F	Caucasian	64	No	No	Huge liver NET
HEPXXX	F	Caucasian	64	No	No	Ca recti pT3pN1pM1(hep, pulmon)
HEPXXX	M	Caucasian	60	No	No	Ca colon pT4N1M1(hep), IV stage
HEPXXX	F	Caucasian	50	No	No	Perihilar cholangiocarcinoma, cT3N1MO
HEPXXX	F	Caucasian	50	No	No	Perihilar cholangiocarcinoma, cT3N1MO
HEPXXX	M	Caucasian	70	No	No	Peripheral perihilar cholangiocarcinoma(Kl atskin tumor) cT1bN0MO
HEPXXX	M	Caucasian	63	No	No	Liver cyst
HEPXXX	F	Caucasian	50	No	No	Ovarian cancer T1N0MO 2021. Disease progression. Liver Mts
HEPXXX	M	Caucasian	59	NA	Yes	Bile duct cancer (cholangiocarcinomas)
HEPXXX	M	Caucasian	57	Yes	No	Hydatid cyst of the liver

Biological materials were collected from the certified clinical hospitals. Clinical site provided ethical committee approval and conducted the collection in accordance to the Directive 2004/23/EC of the European Parliament

## 2.1. SAFETY DATA

Virological status	Specification	Result	
Hepatitis B ( <i>HBs antigen, anti HBc antibody</i> )	Negative	Positive <input type="radio"/>	Negative <input type="radio"/>
Hepatitis C ( <i>anti HCV antibody</i> )		Positive <input type="radio"/>	Negative <input type="radio"/>
HIV-1 and HIV-2 ( <i>anti HIV-1 and HIV-2 antibodies</i> )		Positive <input type="radio"/>	Negative <input type="radio"/>

## 3. PRODUCT DESCRIPTION

<b>Process</b>	Human hepatocytes were isolated from liver resection by standard methods. The different batches of human hepatocytes were then pooled and frozen using a proprietary pooling process of TRL-Lonza under a license agreement.
<b>Biosafety level</b>	Human sourced products should be handled at the Biological Safety Level 2 (BSL 2)
<b>Last Control Date</b>	
<b>Packaging</b>	1 mL vial with a minimum of $5 \times 10^6$ viable cells
<b>Quality Grade</b>	Grade S qualified as non-plateable cryohepatocytes for suspension and metabolism assay

## 4. CELL QUALITY CONTROL AFTER THAWING

Criteria	Specification	Result	CONCLUSION	
			Yes <input type="radio"/>	No <input type="radio"/>
Post-thaw viability	$\geq 75\%$	79%	Yes <input type="radio"/>	No <input type="radio"/>
Number of viable cells per vial	$\geq 5 \times 10^6$	$5.5 \times 10^6$	Yes <input type="radio"/>	No <input type="radio"/>
Microbial sterility	No microbial growth detectable	Undetectable	Yes <input type="radio"/>	No <input type="radio"/>

## 5. FUNCTIONAL CONTROLS AFTER THAWING

Controls performed on suspended cells. Clint value of the probe substrates for the Phase I enzymes ( $\mu\text{L} \cdot \text{min}^{-1} \cdot \text{million cells}^{-1}$ )

Substrate	Activity	Main enzyme involved	Result	Historic data						
				Min	1st quartile	Med	3rd quartile	Max	n	
Phenacetin 1 $\mu\text{m}$	Phenacetin O-deethylation	CYP1A2	2.3	0.8	1.6	2.3	2.6	2.9	3	
Coumarin 1 $\mu\text{m}$	Coumarin 7-hydroxylation	CYP2A6	24	15	20	24	33	41	3	
Bupropion 1 $\mu\text{m}$	Bupropion hydroxylation	CYP2B6	0.5	0.4	0.5	0.5	0.7	0.8	3	
Amodiaquine 1 $\mu\text{m}$	Amodiaquine N-deethylation	CYP2C8	98	36	63	89	94	98	3	
Diclofenac 1 $\mu\text{m}$	Diclofenac 4'-hydroxylation	CYP2C9	9.2	6.7	8.0	9.2	10	11	3	
Mephenytoin 1 $\mu\text{m}$	Mephenytoin hydroxylation	CYP2C19	0.07	0.01	0.04	0.06	0.07	0.07	3	
Dextromethorphan 1 $\mu\text{m}$	Dextromethorphan O-demethylation	CYP2D6	7.6	4.5	5.6	6.6	7.1	7.6	3	
Chlorzoxazone 1 $\mu\text{m}$	Chlorzoxazone 6-hydroxylation	CYP2E1		NA						3
Testosterone 1 $\mu\text{m}$	Testosterone 6 $\beta$ -hydroxylation	CYP3A4/5	1.1	0.2	0.5	0.7	0.9	1.1	3	
Nifedipine 1 $\mu\text{m}$	Nifedipine oxidation	CYP3A4/5	2.6	2.6	3.2	3.7	7.4	11	3	

6. CELL STORAGE

Delivery	In liquid nitrogen, $\leq 150^{\circ}\text{C}$
Storage temperature	In vapour of liquid nitrogen, $\leq 150^{\circ}\text{C}$ up to 5years

7. VISA FOR BATCH RELEASE

Name	Signature	Date
Tetiana Papurina		DAY/MONTH/YEAR