



TRINOVABIOCHEM

European Distributor of

Preferred Cell Systems™

Stem Cell Toxicity Assays

Product List 2019

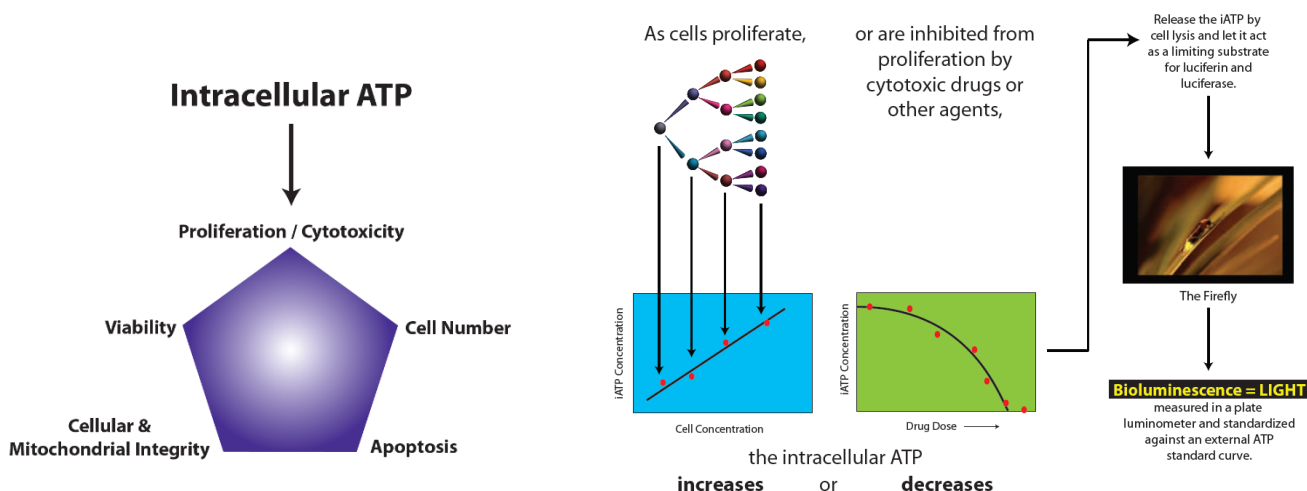
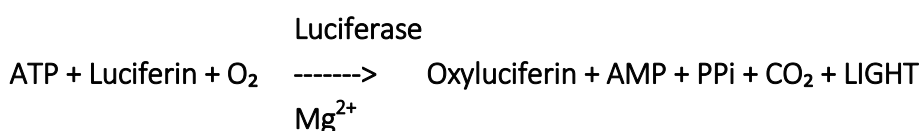
In vitro Predictive Toxicity Assays are Utilizing Primary Cells from many Different Tissues and Organs.

The assays are designed for:

- Basic research toxicology and pharmacology
- Toxicology, risk and safety assessment for biopharmaceutical companies
- Environmental testing

PCS™ provides assays for *in vitro* toxicity screening. The testing principle is based on the determination of the intracellular ATP-concentration by measuring the correlated bioluminescence on 96-well plates. For validation the assay kits include standard & controls.

BIOLUMINESCENCE PRINZIPLE



Applications for **Human** cells; other species on request (Primate (NHP), Horse, Sheep, Pig, Rat, Dog and Mouse).

TB-PCStox-PdL2019 - 1/11

Most assays are available **Low serum** and **Serum-free**, and need to be stored at -20°C. For further information please contact us:



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Preferred Cell Systems™

PCS™ Toxicity Assays are Available for Various Cell Types:

CELL TYPE	ASSAY NAME	ASSAY TYPE	APPLICATION
HEMATOPIETIC STEM CELLS	HALO®-Tox HT	96-well suspension expansion culture™ bioluminescence assay	Hemotoxicity screening (High throughput)
	HALO® PRT		Residual hemotoxicity and drug sensitivity change
	HALO® Real Time		Real time proliferation
	CAMEO™-4	Miniaturized methylcellulose CFU assay	Clonal methylcellulose proliferation and differentiation
MESENCHYMAL STROMA CELLS	MSCGlo™-Tox HT	96-well suspension expansion culture™ bioluminescence assay	MSC cytotoxicity screening (High throughput)
	MSCGlo™ PRT		Predictive residual toxicity
	MSCGlo™ Real Time		Real time proliferation
IMMUNE CELLS	ImmunoGlo™ TCP	96-well suspension expansion culture™ bioluminescence assay	T cell proliferation and expansion
	ImmunoGlo™-Tox HT		Cytotoxicity screening (High throughput)
	ImmunoGlo™ Real Time		Real time proliferation
PRIMARY STEM CELLS AND CELL LINES	STEMGlo™-Tox HT	96-well suspension expansion culture™ bioluminescence assay	Cytotoxicity screening (High throughput)
	STEMGlo™ PRT		Predictive residual toxicity and drug sensitivity change
	HepatoGlo™-Tox HT		Hepatotoxicity screening (High throughput)
	STEMclone™	Combined assay: methylcellulose CFU and bioluminescence	Clonal methylcellulose proliferation and differentiation

Readout: ATP bioluminescence (96- or 384-well plate)**Kit components:** Master mix, ATP-standard, ATP-controls, 96-well plate(s), sterile adhesive foil, manualApplications for **Human** cells; other species on request (Primate (**NHP**), **Horse**, **Sheep**, **Pig**, **Rat**, **Dog** and **Mouse**).

TB-PCStox-PdL2019 - 2/11

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► TOXICITY TESTING FOR HEMATOPOIETIC STEM AND PROGENITOR CELLS

HALO®-Tox HT

ATP bioluminescence stem and progenitor cell proliferation assays including standard and controls

CATALOG NO.	DESCRIPTION	SIZE
K2-0-2HH	HALO®-Tox HT - ATP bioluminescence assay without Growth Factors	2 x 96-well kit
K2-HPP2-2HH	HALO®-Tox HT - ATP bioluminescence assay for SC-HPP2	2 x 96-well kit
K2-GEMM1-2HH	HALO®-Tox HT - ATP bioluminescence assay for SC-GEMM1	2 x 96-well kit
K2-B1-2HH	HALO®-Tox HT - ATP bioluminescence assay for P-BFU1	2 x 96-well kit
K2-GM1-2HH	HALO®-Tox HT - ATP bioluminescence assay for P-GM1	2 x 96-well kit
K2-MK1-2HH	HALO®-Tox HT - ATP bioluminescence assay for P-Mk1	2 x 96-well kit
K2-T-2HH	HALO®-Tox HT - ATP bioluminescence assay for P-Tcell	2 x 96-well kit
K2-B-2HH	HALO®-Tox HT - ATP bioluminescence assay for P-Bcell	2 x 96-well kit

HALO®-Tox HT 4 Population Kit

4 Population lympho-hemotoxicity assays (Control +SC-GEMM1, +P-BFU1, +P-GM1 + P-Mk1)

CATALOG NO.	DESCRIPTION	SIZE
K2-4P-5HH	HALO®-Tox HT - 4 Population assay, Human	5 x 96-well kit
K2-4P-5PRH	HALO®-Tox HT - 4 Population assay, Primate (NHP)	5 x 96-well kit
K2-4P-5CH	HALO®-Tox HT - 4 Population assay, Dog	5 x 96-well kit
K2-4P-5RH	HALO®-Tox HT - 4 Population assay, Rat	5 x 96-well kit
K2-4P-5MH	HALO®-Tox HT - 4 Population assay, Mouse	5 x 96-well kit

HALO®-Tox HT 5 Population Kit

5 Population lympho-hemotoxicity assays (Control + SC-HPP2, +SC-GEMM1, +P-BFU1, +P-GM1 + P-Mk1)

CATALOG NO.	DESCRIPTION	SIZE
K2-5P-6HH	HALO®-Tox HT - 5 Population assay, Human	6 x 96-well kit
K2-5P-6PRH	HALO®-Tox HT - 5 Population assay, Primate (NHP)	6 x 96-well kit
K2-5P-6CH	HALO®-Tox HT - 5 Population assay, Dog	6 x 96-well kit
K2-5P-6RH	HALO®-Tox HT - 5 Population assay, Rat	6 x 96-well kit
K2-5P-6MH	HALO®-Tox HT - 5 Population assay, Mouse	6 x 96-well kit

Applications for **Human** cells; other species on request (Primate (**NHP**), **Horse**, **Sheep**, **Pig**, **Rat**, **Dog** and **Mouse**).

TB-PCStox-PdL2019 - 3/11

Most assays are available **Low serum** and **Serum-free**, and need to be stored at -20°C. For further information please contact us:

**TRINOVA**BIOCHEM

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HALO®-Tox HT 7 Population Kit

7 Population lympho-hemotoxicity assays

(Control + SC-HPP2, +SC-GEMM1, +P-BFU1, +P-GM1 + P-MK1+P-Tcell + P-Bcell)

CATALOG NO.	DESCRIPTION	SIZE
K2-7-8HH	HALO®-Tox HT - 7 Population assay, Human	8 x 96-well kit
K2-7P-8PRH	HALO®-Tox HT - 7 Population assay, Primate (NHP)	8 x 96-well kit
K2-7P-8CH	HALO®-Tox HT - 7 Population assay, Dog	8 x 96-well kit
K2-7P-8RH	HALO®-Tox HT - 7 Population assay, Rat	8 x 96-well kit
K2-7P-8MH	HALO®-Tox HT - 7 Population assay, Mouse	8 x 96-well kit

HALO® PRT

ATP bioluminescence predictive residual hemotoxicity assays

When cells respond to cytotoxic agents, not all the cells may be inhibited or killed. The cells that are not affected are residual cells. When removed and re-plated, these cells may still be capable of proliferation. The residual dose response after secondary re-plating may indicate a shift to the left or right indicating a change in agent/drug sensitivity. Secondary re-plating also indicates the presence of stem cells from that tissue or organ.

CATALOG NO.	DESCRIPTION	SIZE
K2-PRT-2H	HALO® PRT for SC-HPP1 + SC-HPP2, Human	2 x 96-well kit
K2-PRT-2PR	HALO® PRT for SC-HPP1 + SC-HPP2, Primate (NHP)	2 x 96-well kit
K2-PRT-2C	HALO® PRT for SC-HPP1 + SC-HPP2, Dog	2 x 96-well kit
K2-PRT-2R	HALO® PRT for SC-HPP1 + SC-HPP2, Rat	2 x 96-well kit
K2-PRT2-2M	HALO® PRT for SC-HPP1 + SC-HPP2, Mouse	2 x 96-well kit

HALO® Real Time

ATP bioluminescence stem and progenitor cell proliferation kit including standard and controls

- Non-lytic, bioluminescence assay
- Multiplexing flow cytometric capability (e.g. CD133⁺, CD34⁺, or ALDH⁺)
- Watch the cells over 2 - 5 days taking bioluminescence readings at any times you like
- For bone marrow, umbilical cord blood, mobilized peripheral blood or purified populations (e.g. CD34⁺, CD133⁺)

CATALOG NO.	DESCRIPTION	SIZE
K6-HPP1-1H	HALO® Real Time - Bioluminescence assay for SC-HPP1	1 x 96-well kit
K6-HPP2-1H	HALO® Real Time - Bioluminescence assay for SC-HPP2	1 x 96-well kit

Applications for **Human** cells; other species on request (Primate (**NHP**), **Horse**, **Sheep**, **Pig**, **Rat**, **Dog** and **Mouse**).

TB-PCStox-PdL2019 - 4/11

Most assays are available **Low serum** and **Serum-free**, and need to be stored at -20°C. For further information please contact us:**TRINOVA**BIOCHEM

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K6-GEMM1-1H	HALO® Real Time - Bioluminescence assay for SC-GEMM1	1 x 96-well kit
K6-GEMM2-1H	HALO® Real Time - Bioluminescence assay for SC-GEMM2	1 x 96-well kit
K6-GEM1-1H	HALO® Real Time - Bioluminescence assay for SC-GEM1	1 x 96-well kit
K6-GEM2-1H	HALO® Real Time - Bioluminescence assay for SC-GEM2	1 x 96-well kit
K6-BFU1-1H	HALO® Real Time - Bioluminescence assay for P-BFU1	1 x 96-well kit
K6-BFU2-1H	HALO® Real Time - Bioluminescence assay for P-BFU2	1 x 96-well kit
K6-GM1-1H	HALO® Real Time - Bioluminescence assay for P-GM1	1 x 96-well kit
K6-GM3-1H	HALO® Real Time - Bioluminescence assay for P-GM3	1 x 96-well kit
K6-MK1-1H	HALO® Real Time - Bioluminescence assay for P-Mk1	1 x 96-well kit

Kit content: HALO®-Real Time reagent, HALO® master mix growth medium, sterile 96-well plate, sterile adhesive foil, assay manual

CAMEO™-4

A miniaturized methylcellulose CFC assay used in toxicity testing to detect the response of compounds on the differentiation and maturation process

- **Easy handling:** due to the optimized blend of the master mix it can simply be applied with a positive displacement pipette
- **Fast results in 10 - 12 days:** media formulations allows increased growth of colonies
- **Economical use of cells:** the miniaturized CFU-assay kit CAMEO™-4 requires only 1/10 the amount of target cells compared to traditional assays

CATALOG NO.	DESCRIPTION	SIZE
KC-0-50H	CAMEO™-4 without Growth Factors	38 ml + 50 plates
KC-HPP1-50H	CAMEO™-4 for SC-HPP1	38 ml + 50 plates
KC-HPP2-50H	CAMEO™-4 for SC-HPP2	38 ml + 50 plates
KC-GEMM1-50H	CAMEO™-4 for SC-GEMM1	38 ml + 50 plates
KC-GEMM2-50H	CAMEO™-4 for SC-GEMM2	38 ml + 50 plates
KC-GEMM3-50H	CAMEO™-4 for SC-GEMM3	38 ml + 50 plates
KC-GEM1-50H	CAMEO™-4 for SC-GEM1	38 ml + 50 plates
KC-GEM2-50H	CAMEO™-4 for SC-GEM2	38 ml + 50 plates
KC-GEM3-50H	CAMEO™-4 for SC-GEM3	38 ml + 50 plates
KC-BFU1-50H	CAMEO™-4 for P-BFU1	38 ml + 50 plates
KC-BFU2-50H	CAMEO™-4 for P-BFU2	38 ml + 50 plates
KC-GM1-50H	CAMEO™-4 for P-GM1	38 ml + 50 plates
KC-GM2-50H	CAMEO™-4 for P-GM2	38 ml + 50 plates

Applications for **Human** cells; other species on request (Primate (**NHP**), **Horse**, **Sheep**, **Pig**, **Rat**, **Dog** and **Mouse**).

TB-PCStox-PdL2019 - 5/11

Most assays are available **Low serum** and **Serum-free**, and need to be stored at -20°C. For further information please contact us:

KC-GM3-50H	CAMEO™-4 for P-GM3	38 ml + 50 plates
KC-G-50H	CAMEO™-4 for G- CFC	38 ml + 50 plates
KC-M-50H	CAMEO™-4 for M-CFC	38 ml + 50 plates
KC-MK1-50H	CAMEO™-4 for P-Mk1	38 ml + 50 plates
KC-MK2-50H	CAMEO™-4 for P-Mk2	38 ml + 50 plates
KC-T-50H	CAMEO™-4 for P-Tcell	38 ml + 50 plates
KC-B-50H	CAMEO™-4 for P-Bcell	38 ml + 50 plates

Miniaturized CFU complete assay kits, including culture plates for 50 x 0.1 ml cultures performed in quadruplicate

► IN VITRO IMMUNOTOXICITY TESTING

Although often considered a separate area, immunotoxicity and hemotoxicity are intimately related since the immune and hematopoietic systems share common primitive stem cells. For more mature immune cell populations

ImmunoGlo™-Tox HT

Assays for *in vitro* immunotoxicity

This 96- or 384-well plate *in vitro* immunotoxicity testing system can be used to detect cytotoxicity associated with stimulator and responder cells.

CATALOG NO.	DESCRIPTION	SIZE
KM1-T96-2	ImmunoGlo™-Tox HT for user defined immune cells	2 x 96-well kit
KM1-T96-4		4 x 96-well kit
KM1-T384-2		2 x 384-well kit
KM1-T384-4		4 x 384-well kit
KM1-T96CS1-2H	ImmunoGlo™-Tox HT with CD3 + CD28, Human	2 x 96-well kit
KM1-T384CS1-2H		2 x 384-well kit
KM1-T96CS2-2H	ImmunoGlo™-Tox HT with IL-2 + CD3 + CD28, Human	2 x 96-well kit
KM1-T384CS2-2H		2 x 384-well kit

Applications for **Human** cells; other species on request (Primate (**NHP**), **Horse**, **Sheep**, **Pig**, **Rat**, **Dog** and **Mouse**).

TB-PCStox-PdL2019 - 6/11

Most assays are available **Low serum** and **Serum-free**, and need to be stored at -20°C. For further information please contact us:

ImmunoGlo™ TCP

ATP bioluminescence T lymphocyte cell proliferation and viability assay kit

- Non-radioactive assay to measure T lymphocyte proliferation
- T lymphocyte proliferation assay kits which work right out of the box
- Equal or improved sensitivity to a radioactive marker and 10 - 100 times increased sensitivity than WST-1 or CFSE assays
- 3 assay kits available: Growth medium with IL-2, CD3 + CD28, or IL-2 + CD3 + CD28 for improved T cell proliferation
- A standardized 5-days incubation period can be varied if required
- Readout has been validated, and can easily re-validated with the included standards and controls

CATALOG NO.	DESCRIPTION	SIZE
K2-T-1H	ImmunoGlo™ TCP with IL-2 alone	1 x 96-well kit
KM1-TCS1-1H	ImmunoGlo™ TCP with CD3 + CD28	1 x 96-well kit
KM1-TCS2-1H	ImmunoGlo™ TCP with IL-2 + CD3 + CD28	1 x 96-well kit

ImmunoGlo™ Real Time

ATP bioluminescence stem and progenitor cell proliferation kit including standard and controls

- Non-lytic, bioluminescence assay – follow lymphocyte proliferation in real time
- Multiplexing flow cytometric capability
- Add ImmunoGlo Real Time reagent at the beginning of culture or at any time after culture initiation, and follow cell growth for up to 3 day
- Complete flexibility to use any mitogens, co-stimulators etc. and lymphocyte culture protocols
- For use with peripheral blood mononuclear cells (PBMS), lymphocyte sub-populations and lymphocyte tissues and organs

CATALOG NO.	DESCRIPTION	SIZE
KM1-RT-1	ImmunoGlo™ Real Time	1 x 96-well kit

► IN VITRO MESENCHYMAL STEM CELL TOXICITY TESTING

The production of osteoblasts, adipocytes and chondrocytes play a large role in regenerative medicine. These cell types are all derived from mesenchymal stem cells (MSCs). Mesenchymal stem cells are also part of the hematopoietic stroma of the hematopoietic stem cell niche.

MSCGlo™-Tox HT

Assays for in vitro MSC toxicity

- MSC toxicity platform utilizing bioluminescence technology
- available for following species: Human, NHP, Rat, Mouse

CATALOG NO.	DESCRIPTION	SIZE
KLMC-T96CR-2H	MSCGlo™-Tox HT with CRUX RUFA Human Platelet Lysate	2 x 96-well kit
KLMC-T96CR-4H		4 x 96-well kit
KLMC-T96H-2H	MSCGlo™-Tox HT with Humanized medium	2 x 96-well kit
KLMC-T96H-4H		4 x 96-well kit
KLMC-T96LS-2H	MSCGlo™-Tox HT with Low serum medium	2 x 96-well kit
KLMC-T96LS-4H		4 x 96-well kit
KLMC-T96SF-2H	MSCGlo™-Tox HT with Serum-free medium	2 x 96-well kit
KLMC-T96SF-4H		4 x 96-well kit

Available as 384-well kits as well.

MSCGlo™ PRT

MSC predictive residual toxicity assays

When cells respond to cytotoxic agents, not all the cells may be inhibited or killed. The cells that are not affected are residual cells. When removed and re-plated, these cells may still be capable of proliferation. The residual dose response after secondary re-plating may indicate a shift to the left or right indicating a change in agent/drug sensitivity. Secondary re-plating also indicates the presence of stem cells from that tissue or organ.

CATALOG NO.	DESCRIPTION	SIZE
KLMC-PRTCR-2	MSCGlo™ PRT with CRUX RUFA Human Platelet Lysate	2 x 96-well kit
KLMC-PRTLS-2	MSCGlo™ PRT with Low serum medium	2 x 96-well kit
KLMC-PRTSF-2	MSCGlo™ PRT with Serum-free medium	2 x 96-well kit

Applications for **Human** cells; other species on request (Primate (**NHP**), **Horse**, **Sheep**, **Pig**, **Rat**, **Dog** and **Mouse**).

TB-PCStox-PdL2019 - 8/11

Most assays are available **Low serum** and **Serum-free**, and need to be stored at -20°C. For further information please contact us:

MSCGlo™ Real Time

Real Time, non-lytic bioluminescence assay to monitor cell processing of mesenchymal stroma cells

- Watch MSCs grow over 2 - 3 days by taking bioluminescence readings at any times you like
- Non-lytic, bioluminescence assay; thus compatible with downstream applications: e.g. flow cytometric analysis with fluorochrome-conjugated antibodies (CD73⁺, CD90⁺, CD105⁺ and/or CD106⁺) to observe changes in phenotypic markers with time
- MSCGlo™ Real Time includes your choice of MSC-medium:
 - CRUX RUFA Human Platelet Lysate
 - MSCGro Low serum complete medium for Human, Primate, Rat or Mouse
 - MSCGro Serum-free, Xeno-free complete medium for Human, Primate, Rat or Mouse
 - MSCGro Humanized complete medium
 - MSCGro medium for Canine and Equine MSCs

CATALOG NO.	DESCRIPTION	SIZE
KMRT-CR-1	MSCGlo™ Real Time incl. CRUX RUFA Human Platelet Lysate	1 x 96-well kit
KMRT-LS-1	MSCGlo™ Real Time incl. MSCGro Low serum medium	1 x 96-well kit
KMRT-SF-1	MSCGlo™ Real Time incl. MSCGro Serum-free medium	1 x 96-well kit
KMRT-SF-1	MSCGlo™ Real Time incl. MSCGro Humanized medium	1 x 96-well kit

► IN VITRO TOXICITY TESTING FOR PRIMARY CELLS, ES AND iPS CELLS

STEMGlo™-assays with bioluminescence technology are suitable to measure toxicity on various cell types:

- **Hepatotoxicity**
- **Neurotoxicity**
- **Renal toxicity**
- **Cardiotoxicity**
- **Skin toxicity**
- **Lung toxicity**

Applications for **Human** cells; other species on request (Primate (**NHP**), **Horse**, **Sheep**, **Pig**, **Rat**, **Dog** and **Mouse**).

TB-PCStox-PdL2019 - 9/11

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STEMGlo™-Tox HT

Assays to measure potential toxicity using different cell types from a variety of mammalian species

CATALOG NO.	DESCRIPTION	SIZE
KSG-T96-A-2	StemGlo™-Tox HT for adherent cells	2 x 96-well kit
KSG-T96-A-4		4 x 96-well kit
KSG-T96-NA-2	StemGlo™-Tox HT for non-adherent cells	2 x 96-well kit
KSG-T96-NA-4		4 x 96-well kit
KSG-T384-A-2	StemGlo™-Tox HT for adherent cells	2 x 384-well kit
KSG-T384-A-4		4 x 384-well kit
KSG-T384-NA-2	StemGlo™-Tox HT for non-adherent cells	2 x 384-well kit
KSG-T384-NA-4		4 x 384-well kit

STEMGlo™-PRT

Predictive residual toxicity assays

When cells respond to cytotoxic agents, not all the cells may be inhibited or killed. The cells that are not affected are residual cells. When removed and re-plated, these cells may still be capable of proliferation. The residual dose response after secondary re-plating may indicate a shift to the left or right indicating a change in agent/drug sensitivity. Secondary re-plating also indicates the presence of stem cells from that tissue or organ.

CATALOG NO.	DESCRIPTION	SIZE
KSG-PRT-A-2	StemGlo™-PRT for adherent cells	2 x 96-well kit
KSG-PRT-NA-2	StemGlo™-PRT for non-adherent cells	2 x 96-well kit

HepatoGlo™-Tox HT

Hepatotoxicity ATP bioluminescence assays

- For incorporation of fresh or frozen primary or iPS-derived hepatocytes
- HepatoGlo™ specialized growth medium

CATALOG NO.	DESCRIPTION	SIZE
KHG-A-2	HepatoGlo™-Tox HT for adherent cells	2 x 96-well kit
KHG-NA-2	HepatoGlo™-Tox HT for non-adherent cells	2 x 96-well kit

Available as 384-well kits as well.



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European Distributor of

Preferred Cell Systems™

STEMClone™

Clonal methylcellulose proliferation and differentiation assays

- Manual colony enumeration AND standardized ATP bioluminescence
- Equivalent to CAMEO™
- Based on the 'classic' colony-forming cell (CFC)-assay

CATALOG NO.	DESCRIPTION	SIZE
KSC-1	STEMClone™ - Clonal methylcellulose proliferation and differentiation assay	1 x 96-well kit

About Us

TRINOVA BIOCHEM GmbH is the distributor of Preferred Cell Systems™ (PCS™) in Europe.

Preferred Cell Systems™

Preferred Cell Systems™ - the exclusive manufacturer of all products originally produced by **HemoGenix®** - develops innovative, high-quality in vitro Assays and cell culture Media for Stem Cell Research, Cellular Therapy, In Vitro Toxicology and Regenerative Medicine.

Errors reserved!

Applications for **Human** cells; other species on request (Primate (**NHP**), **Horse, Sheep, Pig, Rat, Dog and Mouse**).

TB-PCStox-PdL2019 - 11/11

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