

MSCGlo™-Tox HT

In Vitro Mesenchymal Stem/Stromal Cell Toxicity Contract Testing and Assay Kits

Toxicity to the mesenchymal stem/stromal cell (MSC) system can have serious consequences. Damage to MSCs can affect muscle and tendons, cartilage and bone, fat and even neural cells. Either by itself or multiplexed with other assays, MSCGlo™-Tox HT is the only assay platform specifically designed to detect potential toxicity to the MSC system.

Benefits of using MSCGlo™-Tox HT for Predictive *In Vitro* MSC Toxicity Testing

- Detects toxicity to MSCs from a variety of different sources and species.
- Supplements toxicity testing on MSC-derived tissues (e.g. chondrocytes, adipocytes, osteoblasts).
- Analyze effects to the bone marrow stroma (microenvironment).
- Can be used with other HemoGenix® assays to study the immunomodulatory role of MSCs.
- Replaces the manual CFU-F assay with a fully validated toxicity platform.
- High-throughput capability using 96- or 384-well plate formats allows ADME-Tox drug or compound screening, thereby significantly reducing unexpected results during pre-clinical testing.
- Can be used at all stages of drug development.
- A 3Rs Assay Platform-Reduction, Refinement, Replacement for animal testing.
- Part of the ComparaTOX™ 1 Platform for comparing and ranking toxicity according to cell type and species.
- Available for multiple species comparisons.
- Incorporates the most sensitive ATP bioluminescence readout available to measure proliferation, cytotoxicity, cell number and even apoptosis.
- Uses proprietary, high performance MSCGro™ medium with low serum, serum free or humanized formulations.
- Results in 3 to 7 days depending on source and species.
- Validated according to FDA Bioanalytical Method Guidelines.
- Allows results to be compared over time thanks to assay calibration and standardization. Reliable and reproducible results with very low CVs.
- Designed for multiplexing with other assays using the same sample.
- Available as contract services or assay kits that include everything required to perform the assay. MSCs from certain sources can also be supplied with the kits. Assay kits are easy to learn and fast to use.

MSCGlo™-Tox HT can be used for MSCs derived from the following tissues:

- Bone marrow
- Umbilical cord blood
- Adipose tissue
- Dental pulp
- Dermis
- Pericytes
- Muscle
- Periosteum
- Synovial membrane
- Induced pluripotential stem (iPS) cells
- Embryonic stem (ES) cells

MSCs can be used from the following Species:

- Human
- Non-human primate
- Horse
- Rat
- Mouse



Assays You Can Trust
Innovative Expertise You Can Count On

MSCGlo™-Tox HT

MSCGlo™-Tox HT Assay Multiplexing: To obtain maximum information from a single sample

For contract services, HemoGenix® offers additional assays that can be multiplexed with MSCGlo™-Tox HT to provide information on cell population response and mechanism of action to provide the maximum amount of information from a single cell sample. These include:

- MSCGlo™-384 DDI: Drug-drug interaction assay for MSCs.
- MSC differentiation assays.
- Growth factor production/release assays.
- Flow cytometric assays: cell cycle analysis, membrane expression, apoptosis.
- Oxidative DNA damage assays (OxyFLOW™).
- Biochemical apoptosis assays (e.g. Caspase assays).
- Mitochondrial dysfunction assays.
- Gene expression analysis (not performed by HemoGenix™).

MSC Toxicity Assay Panel

HemoGenix® has designed a panel of assays that can be incorporated into MSC testing.

- MSC differentiation assays for chondrogenesis, adipogenesis and osteogenesis.
- FloDiff™: Membrane expression marker detection, cell cycle, apoptosis.
- Membrane integrity: LDH and/or PI.
- GFkine™: Growth factor/cytokine production/release.
- Mitochondrial ToxGlo™: Mitochondrial dysfunction.
- Glutathione Assay: Oxidative stress.
- OxyFLOW™: Oxidative DNA damage.
- Biochemical apoptosis assays: CaspaseGlo™.

MSCGlo™-Tox HT Assay Kits contains the following contents:

- MSCGro™ Medium
- ATP standard
- ATP controls
- ATP Enumeration Reagent
- Sterile, 96- or 384-well plates
- Non-sterile, 96- or 384-well plates
- Sterile, adhesive foil covers
- Assay manual
- Cells optional

Other Assays for *In Vitro* High Throughput Toxicity Testing

- HALO®-Tox HT: Stem and progenitor cell hemotoxicity assays.
- CAMEO™-4 and CAMEO™-96: Hemotoxicity assays to determine the effect on hematopoietic differentiation.
- ImmunoGlo™-Tox HT: Lymphocyte proliferation/cytotoxicity assays.
- STEMGlo™-Tox HT: Cytotoxicity to primary stem cells, stem cell line (e.g. ES and iPS) and explanted cells from different organs and tissues.
- NeuroGlo™-Tox HT: Neural stem and progenitor cell toxicity assays.
- HepatoGlo™-Tox HT: Hepatotoxicity assays.
- ComparaTOX™: Contract service assays to compare and rank toxicity based on cell type and species.
- Drug-Drug Interaction (DDI) Assays: Contract service]cellular drug interaction assays.
- Residual Stem Cell Toxicity Assays: To determine the presence of residual stem cells after *in vitro* drug administration.