

The seminar on hematopoietic CFC-assay for drug safety and toxicity

Colony forming cell assay (CFC-assay) is a standardized *in vitro* method to quantify hematopoietic stem and progenitor cells. In order to share the knowledge and technique of CFC-assay with our customers who is doing or going to start the assay, we have held a seminar every year inviting an expert. This year, the seminar focused on the application for drug safety and toxicity which can predict the effect of drug on hematopoietic development and homeostasis. In addition, newly launched toxicity screening kit in 96-well format and its application were introduced. During the seminar, we also delivered live webinar to the people who could not come to our office as our first attempt.

■ Place and date

Veritas office, February 3rd, 2017

■ Seminar activities

- Lecturer: Dr. Jackie Damen (STEMCELL Technologies Inc. Canada)
- Contents:
 - ✧ Hematopoietic CFC-assay
 - ✧ Application of human CFC-assay
 - ✧ Automation of CFC-assay
 - ✧ New HemaTox kit and drug screening application
 - ✧ Related products
 - ✧ Q&A
- Participants: 11 joined the seminar, including webinar. Although not participated on time, 4 requested handouts. They are mainly from pharma, and a few from academia.
- Comments: The participants were satisfied with the contents. It seemed helpful to learn both overview and practical points of CFC-assay. They were also interested in suspension culture-based HemaTox kit for screening. There were many questions coming during Q&A session, and before or after the seminar. Dr. Jackie Damen provided useful hints and answers for them based on her abundant knowledge and experience in hematopoietic cell assays. The live webinar was successful and found useful for the people who are in remote location or difficult to come to our office.

Anticipating Cytopenia:
In Vitro Methods for Assessing Hematotoxicity

Jackie Damen, PhD
Director of Contract Assay Services
STEMCELL Technologies Inc.

Hematopoietic Assays in Toxicity and Drug Screening

Human BM CFU-GM and BFU-E in MethoCult™ H4034

2x Objective
10x Objective
4x Objective

HemaTox™ Assay Procedure

Isolate CD34⁺ Cells → Culture → Flow Cytometry

Cord Blood Bone Marrow → CD34⁺ Cells → Culture → Flow Cytometry

Day 0 → Day 7 → Day 10

Plate cells* (3 - 6 wells per condition) → Add drug or diluent (3 - 6 wells per condition)

ENDPOINT: Erythroid Myeloid
ENDPOINT: Megakaryocyte

Cell numbers
% Viability
Immunophenotype

*Optimized protocol
Too few cells - high variability
Too many cells - overgrowth/cell death