

# TRAINING

## MESENCHYMAL STEM CELLS

The Cell Experts™ at STEMCELL Technologies are offering a Mesenchymal Stem Cell (MSC) Training Course to provide hands-on instruction in the culture of human and mouse mesenchymal stem cells. Brenton Short, who first characterized compact bone-derived MSCs in mouse, will teach participants how to dissect mouse compact bone for the isolation of MSCs and how to culture mouse MSCs derived from compact bone and bone marrow. Participants will also learn how to culture human bone marrow-derived MSCs in serum- and animal component-free medium. Upon completion of the course, participants will have a thorough understanding of mesenchymal stem cell biology and current practices in the field. Lecture and laboratory sessions will be conducted by Dr Ravenska Wagey and Dr Brenton Short.

To ensure personalized instruction, this two-day course is limited to six participants.

### COURSE CONTENT

#### MOUSE MESENCHYMAL STEM CELLS

##### Lecture Session

- Introduction to stem cell biology and hierarchies within the murine skeletal system
- Phenotypic and functional dissection of MSC populations in adult mouse compact bone
- Isolation of mouse MSCs from compact bone and bone marrow
- Optimization of culture conditions for *in vitro* mouse MSC expansion
- Detailed technical presentation of the techniques used in mouse mesenchymal stem cell culture systems (prior to hands-on lab work) including:
  - Methods to isolate and enrich MSCs from compact bone
  - Tissue culture protocols (basic MSC culture techniques)

##### Laboratory Session

- Hands-on aseptic dissection of mouse bones
- Detailed instruction in preparation, cleaning and crushing of mouse compact bone
- Hands-on compact bone preparation and MSC isolation
- Set-up of mouse MSC cultures with primary mouse compact bone- and bone marrow-derived cells
- Identification and enumeration of mouse compact bone- and bone marrow-derived CFU-F colonies
- Analysis of adipogenic, osteogenic and chondrogenic differentiation cultures

#### HUMAN MESENCHYMAL STEM CELLS

##### Lecture Session

- Characteristics of human MSCs: tissue source, frequency, phenotype, expansion and differentiation
- Culture methods and heterogeneity of human MSC subpopulations
- Enrichment methods for human MSCs
- Characteristics of MSCs cultured in serum- and animal component-free (ACF) medium
- Functional assays to characterize cells cultured in serum- and animal component-free medium
- Clinical trials: Therapeutic applications of MSCs
- Post laboratory Q&A
- Quiz

##### Laboratory Session

Culture of human bone marrow-derived MSCs in serum-containing vs serum- and animal component-free medium with:

- Microscopic evaluation of MSC cultures
- Subculture/passaging MSCs (with cell viability, fold expansion and optimal plating density calculations).
- Staining and enumeration of CFU-F
- Staining cells for phenotype analysis by flow cytometry

### REGISTRATION INCLUDES

- Dinner with STEMCELL's experts at an award winning west coast restaurant
- Lunches and refreshments served daily
- Instructional materials
- Certificate issued upon successful completion of the training course

# MESENCHYMAL STEM CELL TRAINING COURSE REGISTRATION FORM

## MESENCHYMAL STEM CELL TRAINING COURSE REGISTRATION FORM (CATALOG #00209)

**LOCATION:** 570 West Seventh Avenue  
Vancouver, BC, Canada

**DATE:** October 2 - 3, 2009

**TIME:** 9:00 am - 5:00 pm

**FEE:** Customers in the US will be charged a fee of  
\$950 (US) per registrant.

Customers in Canada and all other countries will  
be charged a fee of \$950 (CDN) per registrant.

Food will be provided. Please notify us of any dietary restrictions.

### PRIMARY CONTACT INFORMATION

Title:  Dr.  Mr.  Ms. Name: \_\_\_\_\_

Position: \_\_\_\_\_ Principal Investigator: \_\_\_\_\_

Institution: \_\_\_\_\_

Department: \_\_\_\_\_ Room #: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Shipping Address: \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

e-mail: \_\_\_\_\_ Signature: \_\_\_\_\_

### PAYMENT INFORMATION

Method:  Visa®  Mastercard®  Money Order (US funds) payable to STEMCELL Technologies

Card Number: \_\_\_\_\_ Expiration Date: \_\_\_\_\_

Cardholder's Name: \_\_\_\_\_ Cardholder's Signature: \_\_\_\_\_

### NOTE

For prompt confirmation, please fax your completed form to April Macagapal at 1.604.877.0704 or 1.800.567.2899 (North America).  
Enrolment is limited to 6 participants. Confirmation of registration will be sent to you upon receipt of your completed registration form  
with payment.

### CANCELLATION POLICY

A 90% refund will be issued if notification is received in writing more than 21 days in advance of the course date.  
No refund will be given with less than 21 days notice unless we are able to find another participant to fill the position.