National Training Course on fluorescence *in situ* hybridization using Peptide Nucleic Acid (PNA) probes

Montevideo – Uruguay **June 10 -14, 2019**

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In the frame of the IAEA project URU9011:
"Strengthening the Capacities of the Academic Unit on Radiation Protection"

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Course Program

Monday 10

IIBCE - Conference room		
09:00 - 12:00	Conferences	DNA damage, repair and Cancer
		Hallmarks of cancer
IIBCE Biodosimetry Service		
14:00 - 17:00	Lab Demo	Irradiation of cell/blood cultures at the Secondary Calibration Laboratory from the Metrology Laboratory of Ionizing Radiation located at the Clinical Hospital from the Faculty of Medicine. Set up of cell/blood cultures at the Cell Culture Facility at IIBCE

Tuesday 11

IIBCE - Conference room		
09:00 - 12:00	Conferences	Cellular Senescence
		Oxidative Stress, Mitochondria and Ageing
		Age Related Diseases
IIBCE Biodosimetry Service		
14:00 - 17:00	Lab Demo	Discussion of basic concepts on fluorescent in situ hybridization technique (FISH). Addition of colcemid to cell cultures 2 h previous fixation. Fixation and chromosome slide preparation of irradiated adherent human cells. Initiation of FISH up to hybridization step which will be kept overnight.

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Wednesday 12		
IIBCE - Conference room		
09:00 12:00	Conferences	Telomeres, Telomerase and Ageing
		Telomerase, DNA repair and Cancer
		Targeting telomerase and DNA repair in Cancer Therapy
IIBCE Biodosimetry Service		
14:00 - 17:00	Lab Demo	Addition of colcemid to blood cultures 2 h previous fixation. Fixation and chromosome slide preparation of irradiated blood cells. Initiation of FISH up to hybridization step with PNA probes, which will be kept overnight. End of FISH technique with adherent human cells. Microscopic observation employing ISIS software from MetaSystems
Thursday 13		
IIBCE - Conference room		
09:00 12:00	Conferences	Molecular Cytogenetics
		A post-genomic integrated approach to analyzing biological signatures of radiation exposure: Multiparametric approach
IIBCE Biodosimetry Service		
14:00 - 17:00	Lab Demo	End of FISH technique with human peripheral lymphocytes. Microscopic observation employing ISIS software from MetaSystems

Friday 14		
IIBCE - Conference room		
09:00 - 12:00	Conferences	Biological Effects of high LET heavy ions in human blood lymphocytes and mouse cell
		Silver nanoparticles: Genotoxicity and Anticancer Effects
IIBCE Biodosimetry Service		
14:00 - 15:00	Lab Demo	Analysis of dicentrics and translocations employing ISIS software from MetaSystems
IIBCE - Conference room		
15:00 - 16:00	Discussion	Students raise questions and discuss topics with the course faculty
16:00 - 18:00	Meeting	Course Evaluation

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