COST Office Science Officer: Dr Inga Dadeshidze, inga.dadeshidze@cost.eu
COST MC Chair: Dr Antonio Sarolic, antonio.sarolic@fesb.hr
COST STSM Manager: Prof Stavros Koulouridis, koulouridis@g.upatras.gr

COST STSM Reference Number: COST-STSM-BM1309-36861
Period: 2017-03-20 to 2017-04-14
COST Action: BM1309
STSM type: Regular (from Turkey to France)

STSM Applicant: Dr Elcin Ozgur Buyukatalay, Gazi University, Ankara (TR), elcin.ozgur@gmail.com
STSM Topic: Cell Drug Delivery using EMF Signals
Host: Lluis Mir, UMR 8203 CNRS, Paris (FR), luis.mir@cnrs.fr

Budget Request: Year-2017

Travel	330 Euro
Subsistence (hotel/meals)	2170 Euro
Total	2500 Euro

Short CV:

Elcin Ozgur Buyukatalay, did her graduate work in Middle East Technical University in Physics Department in 2002 and obtained her MSc and PhD in Biophysics Department of Gazi University Faculty of Medicine in 2006 and 2011 respectively. She is still working as a post-doc researcher in this department. She is an expert in Gazi Non-Ionizing Radiation Protection Center (GNRK) which is the first and unique non-ionizing radiation protection center in Turkey since 2004. She has coordinated reseach projects entitled "Radiofrequency Radiation Alters Proliferation and Inflamation of Colorectal Cancer Cells" since 2015. She is a member of EBEA since 2010.

Work Plan Summary:

The STSM is scheduled for 4 work weeks (March 20th 2017 to April 14th 2017).
Two types of cells will be used. Analysis will be performed either on attached cells, under the microscope, for the assessment of the permeabilisation to calcium ions, or by flow cytometry, after cells exposure in suspension (in classical cuvettes connected to the sinusoidal signals generator), for the evaluation of the permeabilisation to classical markers such as propidium iodide or Yo-Pro1. Cytotoxicity experiments using bleomycin are also foreseen.
In preliminary recent experiments in the host institution, at least one set of parameters (signal amplitude, signal frequency, in the range of few kHz, and signal duration) have been found to cause cells electropermeabilization to Yo-Pro1 in DC-3F cells.
In the first week, the trainee will reproduce these experiments. Other conditions will also be analyzed (longer/shorter durations; higher/lower signal amplitudes) since flow cytometry experiments are rapid experiments.
In the second week, experiments will be performed on DC-3F attached cells to analyze calcium uptake (in cells preloaded with the Fura-4 calcium indicator). These experiments are more time consuming but provide many complementary information with Yo-Pro1 will be performed on DC-3F cells to find the amplitude of the sinusoidal signal.
In the third week, using "optimal" conditions determined in the first week, cytotoxicity experiments will be conducted through the concomitant exposure of the cells to bleomycin and appropriate sinusoidal signals.
In the fourth week, experiments will be performed on attached haMSC to analyze calcium uptake. The data will be compared to those achieved with the DC-3F, as such kind of comparisons have already been performed in the host laboratory.

I request the approval of a COST Short Term Scientific Mission as described above

Applicant:
Dr Elcin Ozgur Buyukatalay 21 Feb 2017