SHORT TERM SCIENTIFIC MISSION (STSM)
SCIENTIFIC REPORT

This report is submitted for approval by the STSM applicant to the STSM coordinator

Action number: BM1406
STSM title:Role of P2X receptors in cancer cell invasiveness
STSM start and end date: 11/06/2017 to 15/06/2017
Grantee name: Ruth Murrell-Lagnado

PURPOSE OF THE STSM:

(max.200 words)
Dr Roger and I have started a collaboration to look at the synergistic role of the P2X4 and P2X7 receptor ion channels in promoting the invasiveness and metastatic potential of epithelial cancers, with a particular focus on breast cancer. The purpose of the visit was to discuss our results in this area, for me to give a seminar to his research group, and for me to learn new techniques that Dr Roger has developed to examine the invasiveness and pH regulation of aggressive breast cancer cells in vitro.

DESCRIPTION OF WORK CARRIED OUT DURING THE STSMS

(max.500 words)

During this visit I gave a seminar to members of the Nutrition, Growth and Cancer laboratory at Tours and we talked extensively about experiments that both laboratories have been carrying out within this area of research. We planned a series of experiments to be carried out immediately by Dr Stephanie Chadet who was also visiting the lab of Dr Roger. We discussed sources of funding not only for research expenses and a post-doctoral salary to continue this work over the next few years, but also funds to enable me to make a more extended visit to the lab in the future. Our discussions focused on some of the recent methods that Dr Roger has developed to assess cell invasiveness and regulation of pH plus the best approaches to generate CRISPR/Cas9 knockdown of P2X4 in different aggressive breast cancer cells. We hope to establish these protocols at the University of Sussex. We also discussed the possibility for taking this project into mice and assessing metastatic potential of cells with and without P2X4 expression, in vivo. This is work that would be carried out at the University of Tours.

DESCRIPTION OF THE MAIN RESULTS OBTAINED

It was a very fruitful visit and we are now well informed of the recent results obtained by each group and have planned a series of experiment which we anticipate will lead to the submission of a first joint publication in this area sometime in 2018. We will apply for funds available at the University of Tours to support a longer visit by RML to the SR laboratory. Some of the techniques recently established in the SR laboratory will now be set up in the RML lab in Sussex.

FUTURE COLLABORATIONS (if applicable)

We have applied for a joint research grant from the World Wide Cancer Research Fund and will hear back about this the end of the year. Our collaboration is on-going and we are looking into the possibility of funds to support a sabbatical visit by Dr RML to the laboratory of Dr Roger.