

2017Joint Usage and Research Report

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| Title of Research Project | | “Measuring the impact of insulin resistance on epithelial defence against cancer (EDAC)” |
| Applicant | Institution | Centro de Investigacion Principe Felipe (CIPF), Valencia, Spain. |
| | Job title and name | Dr. Luke A. Noon |
| Visiting researcher | Name | Fatima Manzano Nuñez |
| Purpose of the Research Project (approx. 250 words) | | To visit the Fujita Laboratory to learn techniques for studying Epithelial Defense Against Cancer (EDAC) and establish a meaningful long-term collaboration to assess the impact of insulin resistance on this novel tumor suppressor pathway. In our group, we are interested in the pathophysiology of type II diabetes and it's link to chronic tissue deterioration and increased cancer risk. Given that dramatic changes in cellular metabolism occur in and around sites of non-cell autonomous extrusion we hypothesize that efficient EDAC requires metabolic growth factor signaling through the insulin/IGF1 pathway, and that insulin resistance may lead to impaired EDAC, loss of epithelial homeostasis and increased cancer risk. In this project we will initiate experiments to test this hypothesis. |
| Development of the Research Project and Results (approx.. 850 words) | | Since the visit to the IGM we have continued to coordinate closely with the Fujita Laboratory. This has resulted in the successful delivery of the 7x MDCK cell lines that were generated during the project to our laboratory here in Spain. Following receipt of the cells, we have set about implementing and reproducing the protocols and procedures required for studying EDAC in our laboratory. The work to characterize the mutant cell lines in which insulin sensitivity has been artificially enhanced by overexpression of the human insulin receptor (IR) is currently ongoing. We have confirmed that we are able to reproduce the EDAC process in our installations and when sufficient data is generated regarding the IR cell lines we plan to present the results of our collaboration in a national meeting. |

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| Publication *Enter the names of conference or journal and its vol. No. where the above work was presented. | 【Conference, symposium, workshop etc.】 na |
| | 【Journals】 na |