Form 3

Report for Joint/usage program for Endocrine/Metabolism

Date: Apr. 28, 2016

To:

Director of Institute for Molecular and Cellular Regulation

1. Program No.

2. Research title:

A new role of Protein phosphatase 2A (PP2A) in preventing overduplication of the genomic DNA.

3. Objective of the research:

We will test our hypothesis that the timing of DNA replication and mitotic entry is coordinated by a molecular interaction between DNA replication factor Cdc6 and PP2A, an inhibitor of mitosis.

4. Period

Apr 2015-Mar 2016

5. Project organization

Name of Applicant: Amy E. Ikui
Position: Assistant Professor
Institution/department: Department of Biology, City University of New York
Name of Co-applicant:
Position:
Institution/department:

Name of Researcher in IMCR: Satoshi Yoshida
Position: Associate Professor

6. Research plans:

It is not well understood if there is a checkpoint mechanism that links completion of DNA replication and entry into mitosis. Prof. Ikui is an expert in DNA replication and Yoshida lab has expertise in mitosis. We will test our hypothesis that Degradation of DNA replication factor Cdc6 allows mitotic entry by controlling PP2A activity and localization. Assay for mitotic entry using novel PP2A mutations isolated in Yoshida lab will be performed in the IMCR.

7. Research results:

We have successfully isolated a series of PP2A mutant defective in Cdc6 binding. Consistent with our hypothesis, these mutants exhibited defects in mitotic arrest upon DNA damage and spindle damages. Currently we are biochemically testing if physical interaction between PP2A and Cdc6 is regulated by DNA damage checkpoint and/or spindle assembly checkpoint. We are expecting to submit our results by the end of the year.

8. Publications and/or Presentations made through this collaboration

Not yet.

(Please summarize the report in 2 pages)