Hunter, Renee (NIH/OD) [C]

From: McKinney, Michelle (NIH/OD) [E]
Sent: Tuesday, November 3, 2020 2:31 PM
To: Arnaboldi, Paul; NIH guidelines
Cc: Razukiewicz, Amy; Tucker, Jessica (NIH/OD) [E]; Harris, Kathryn (NIH/OD) [C]
Subject: RE: Incident Report - New York Medical College

Dear Dr. Paul Arnaboldi,

Thank you for your below report to the National Institutes of Health (NIH) Office of Science Policy (OSP). We have reviewed the information provided and acknowledge the explanation for the lateness of the report. No further information about this incident is required at this time.

Please contact Dr. Kathryn Harris, Senior Outreach and Education Specialist, by email at harriskath@od.nih.gov or by telephone at (301) 496-9838 if you have any additional questions.

Regards,

Michelle McKinney

Michelle McKinney, MS, CBSP
Health Science Policy Analyst, OSP/OD/NIH
Phone: 301-402-7465
Mobile: Redacted by agreement
michelle.mckinney@nih.gov

From: Arnaboldi, Paul <Paul_Arnaboldi@NYMC.EDU>
Sent: Friday, October 16, 2020 3:15 PM
To: NIH guidelines <NIHguidelines@od.nih.gov>
Cc: Razukiewicz, Amy <Amy_Razukiewicz@nymc.edu>
Subject: Incident Report - New York Medical College

Hi,
In accordance with NIH guidelines we are reporting the attached incident (violation of NIH guidelines) to OSP. Let me know if you have any questions.
Regards,
Paul

Paul M. Arnaboldi, PhD
Assistant Professor
Chair, Institutional Biosafety Committee
Department of Microbiology and Immunology
School of Medicine
New York Medical College
40 Sunshine Cottage Rd, Room C30
Valhalla, NY 10595
P-914-594-4920
F-914-594-4922

National Institutes of Health
Office of Science Policy

Web: http://osp.od.nih.gov
Address: 6705 Rockledge Dr #750, Bethesda, MD 20817
Phone: (301) 496-9838

Template for Reporting Incidents Subject to the *NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules* to the National Institutes of Health Office of Science Policy (OSP)

April, 2019

Instructions for Completing this Template

The *NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules* (*NIH Guidelines*) states that "...any significant problems, violations of the *NIH Guidelines*, or any significant research-related accidents and illnesses" must be reported to NIH within 30 days. Certain types of incidents must be reported on a more expedited basis. Spills or accidents occurring in Biosafety Level (BL) 2 laboratories resulting in an overt exposure must be immediately reported to NIH. Spills or accidents occurring in high containment (BL3 or BL4) laboratories resulting in an overt or potential exposure must be immediately reported to NIH. Relevant incidents would include spills and accidents which result in overt exposures to organisms containing recombinant or synthetic nucleic acid molecules in the laboratory, rather than serious adverse events that may occur in the conduct of human gene transfer research.

This template is intended to facilitate the reporting of incidents that occur during the conduct of research subject to the *NIH Guidelines*. Please complete all fields as fully as possible. The use of this template is not required and other formats for submitting reports may be acceptable.

Completed reports may be sent to OSP via email at NIHGuidelines@od.nih.gov

Does this incident involve research subject to the *NIH Guidelines*?	☒YES ☐NO If no, this incident does not require reporting to OSP
Institution Name:	New York Medical College
Date of Report:	October 16th, 2020
Reporter name and position:	Paul M. Arnaboldi, PhD, IBC Chair
Telephone number:	914-594-4920
Email address:	paul_arnaboldi@nymc.edu
Reporter mailing address:	New York Medical College Department of Microbiology and Immunology 40 Sunshine Cottage Rd. Valhalla, NY 10595
Date of incident:	April 2014, September 2017
Name of Principal Investigator:	Petra Rocic
Is this an NIH-funded project?	☒YES NO If yes, please provide the following information (if known) *NIH grant of contract number:* R01HL093052 *NIH funding institute or center:* NHLBI *NIH program officer (name, email address):*Hasan, Ahmed A K

What was the nature of the incident?	☒Failure to follow approved containment conditions ☐Failure to obtain IBC approval ☐Incomplete inactivation ☐Loss of containment ☐Loss of a transgenic animal ☐Personnel exposure ☐Spill ☒Other (please describe): inaccurate reporting
Did the Institutional Biosafety Committee (IBC) approve this research?	☒YES ☐NO If yes, date of approval: January, 2014 (Adenovirus) October, 2015 (Lentivirus)
What was the approved biosafety level of the research?	☐BL1 ☒ BL2 ☐BL2+ (describe specific enhancement in report) ☐BL3 ☐BL3+ (describe specific enhancement in report) ☐BL4
What section(s) of the *NIH Guidelines* is the research subject to?	III-D-1
Has a report of this incident been made to other agencies? If so, please indicate	☐CDC ☐Funding agency/sponsor ☐USDA ☐State or local Public Health ☐FDA ☐Law enforcement ☐EPA ☐Other (please describe): ☐OSHA
Nature of recombinant or synthetic material involved in incident (strain, attenuation, etc.)	Adenoviral vector containing EGFP. Lentiviral vector containing GPR75-shRNA

Please provide a narrative of the incident including a timeline of events. The incident should be described in sufficient detail to allow for an understanding of the nature and consequences of the incident. **Include the following information as applicable.**

A description of:

- The incident/violation location (e.g. laboratory biosafety level, vivarium, non-laboratory space). **The violations occurred in the vivarium.**

- Who was involved in the incident/violation, including others present at the incident location? **The investigation states that the only individual involved was the PI.**

  Note – please do not identify individuals by name. Provide only gender and position titles (e.g., graduate student, post doc, animal care worker, facility maintenance worker)

- Actions taken immediately following the incident/violation, and by whom, to limit any health or environmental consequences of the event: **The event was not identified at the time it occurred, but rather several years later during the course of an unrelated investigation. Therefore, no actions were taken at the time related to these violations.**

- The training received by the individual(s) involved and the date(s) the training was conducted: **As the incidents occurred over ~3 and ~6 years ago and was only recently reported, no training was provided at the time it was discovered. The PI has completed NIH guidelines training and taken annual safety training. The PI is no longer employed at the institution so further** training was not provided.

- The institutional or laboratory standard operating procedures (SOPs) for the research and whether there was any deviation from these SOPs at the time of the incident/violation: **Animals injected with adenoviral vectors were supposed to be housed at ABSL-2 for a minimum of 48hrs post injection according to the approved protocol, the animals were immediately placed back in ABSL1 housing. Animals injected with the lentiviral vectors were supposed to be maintained at ABSL2 for at least 48hrs according to the approved protocol; the animals were immediately placed back at ABSL1 housing. Furthermore, the animal husbandry staff were not notified that the experiments were being conducted, and when the continuation protocol for the Adenoviral vector work was submitted, the PI indicated that the project was not yet initiated.**

- Any deviation from the IBC approved containment level or other IBC approval conditions at the time of the incident/violation. **Animals were housed at ABSL1 immediately following injection of the adenovirus and lentivirus vectors instead of at ABSL2 as directed by the approved protocols.**

- The personal protective equipment in use at the time of the incident/violation: **Cap,**

disposable gown, facemask, booties, and gloves are standard PPE worn in the vivarium.

- The occupational health requirements for laboratory personnel involved in the research. **Clearance to work in the animal facility. HBV/Tdap vaccines, allergy and exposure risk assessments**

- Any medical surveillance provided or recommended after the incident: **The incidents occurred ~3 and 6 years ago, but were not reported until recently. Thus, no actions were taken.**

- Any injury or illness associated with the incident: **Unknown/none reported**

- Equipment failures**: N/A**

DESCRIPTION OF INCIDENT: (use additional space as necessary)

The PI had two IBC protocols that were approved for the use of 1) Adenoviral vectors containing EGFP, adenoviral vectors containing microRNA-145, and 2) lentiviral vectors containing GPR-shRNA. These were to be injected into rats. The protocols were reviewed and approved by the IBC committee. According to the both approved protocols, injected rats were to be maintained at ABSL2 following injection for a minimum of 48hrs due to the risk of shedding. The adenoviral experiment occurred in April of 2014. The rats that were injected were returned to ABSL1 containment immediately after injection. In January of 2015, the PI submitted an annual IBC update falsely stating that the work had not taken place and that it was anticipated to begin in April of 2015. The lentiviral experiments took place in September of 2017. The PI admitted to injecting 3 rats with a lentiviral construct containing GPR75-shRNA. These rats were to be maintained at ABSL2 following injection for a minimum of 48hrs. due to the risk of shedding. However, the rats were returned to ABSL1 housing immediately after injection. These incidents were uncovered during an unrelated compliance investigation that commenced in April of 2019. Following the completion of the compliance investigation, the details of the infractions were reported to the IBC chair by the Vice President of Research for New York Medical College, in the form of a report assembled by the compliance committee. As chair of the IBC, in accordance with NIH guidelines, I am reporting the incident as presented in the report. The investigator in question is no longer employed at the institution.

Has the IBC reviewed this incident?	☒YES ☐NO
Please describe the root cause of this incident:	The root cause of the incidents is unclear. The PI stated in an interview with the compliance committee that they "did not believe the virus had the capacity to shed and therefore did not use separate containment," and "that animals were moved out of containment minutes after the injection was completed because her procedure used equipment that was too cumbersome to be kept in ABSL2." A possible cause is that information on the use of viral vectors was not clearly presented in training materials, so that the investigator was unaware of the correct procedures, though it is unclear why then the correct procedure was present in the PI's submitted and approved protocols. The investigator is no longer employed at the institution.

Describe measures taken by the institution to mitigate any problems identified (e.g. training, modifying protocols, use of additional safety equipment). For measures identified but not yet taken, please include a timeline for their implementation (use additional space as necessary):

The incident(s) described here were reported to the IBC in a report from a compliance committee formed due to a separate incident. They incidents took place in 2014 and 2017 respectively. Since that time, we have implemented several new procedures to maintain investigator awareness of correct procedures in the use of viral vectors. The NYMC Department of Energy, Environment, Health & Safety working under guidance from the IBC assembled a document called 'Guidance for working with Viral Vectors.' This organizes information on all of the viral vectors used at our institution in one concise source so that investigators have a single source to refer to for guidance on all viral vector usage. In addition, we have also instituted a policy where all lab members in a PIs lab must read the IBC protocols and sign an acknowledgement form from indicating that they have read and understood the protocol. In this manner everyone in the lab knows the requirements of each protocol. Yearly refresher courses have also been updated. In addition, for the use of both adenoviral vectors and lentiviral vectors the required minimum time for containment has been increased to 7 days. All of the above changes have already been implemented.

- **Additional information may be requested by NIH OSP after review of this report depending on the nature of the incident.**
- **Submitting this completed template to NIH OSP does <u>NOT</u> fulfill the reporting requirements of other agencies. You should verify with the other parties to whom you must report whether the use of this template is acceptable.**