DEPARTMENT OF HEALTH & HUMAN SERVICES

PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH

FOR US POSTAL SERVICE DELIVERY:
Office of Laboratory Animal Welfare
6700B Rockledge Drive, Suite 2500, MSC 6910
Bethesda, Maryland 20892-6910
Home Page: http://grants.nih.gov/grants/olaw/olaw.htm

FOR EXPRESS MAIL:
Office of Laboratory Animal Welfare
6700B Rockledge Drive, Suite 2500
Bethesda, Maryland 20817
Telephone: (301) 496-7163
Facsimile: (301) 402-7065

September 27, 2019

Re: Animal Welfare Assurance
#A3125-01 (OLAW Case T]

Dr. Maria T. Zuber
Vice President for Research
Massachusetts Institute of Technology
77 Massachusetts Ave., Building 30234
Cambridge, Massachusetts 02139

Dear Dr. Zuber

The Office of Laboratory Animal Welfare (OLAW) acknowledges receipt of your September 12, 2019 letter reporting an adverse event involving a nonhuman primate at the Massachusetts Institute of Technology, following up on an initial telephone report on August 15, 2019. According to the information provided, OLAW understands that a rhesus monkey died after becoming entangled with its head in the chain holding an enrichment toy. The cause of death was determined to have been due to shock and cardiac failure.

The corrective actions consisted of checking all other primate cages for similar chains and toys. The animal care staff was retrained on checking the length of the chain and not using chains at the cage front.

Based on its assessment of this explanation, OLAW understands that measures have been taken to reduce the likelihood of a similar accident occurring. OLAW concurs with the actions taken by the institution to comply with the PHS Policy on Humane Care and Use of Laboratory Animals.

Sincerely,

(b) (6)

Axel Wolff, M.S., D.V.M.
Deputy Director
Office of Laboratory Animal Welfare

cc: IACUC Chair

A3125-T

MIT BUILDING
16-408

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
WHITEHEAD INSTITUTE FOR BIOMEDICAL RESEARCH
COMMITTEE ON ANIMAL CARE
CAMBRIDGE, MASSACHUSETTS 02139-4307

TELEPHONE
(617) 253-9436
FAX
(617) 258-8257

Date: 9/12/19

To: Axel Wolff, DVM
Director, Division of Compliance Oversight
Office of Laboratory Animal Welfare
National Institutes of Health
Rockledge 1, Suite 360
6705 Rockledge Drive
Bethesda, MD 20892

From: Dr. Maria T. Zuber, Institutional Official, Vice President for Research at MIT

cc: Dr. James G Fox, Professor and Director of the Division of Comparative Medicine (DCM) / Attending Veterinarian and Committee on Animal Care (CAC) Veterinarian
(b) (6)
[redacted]
AAALAC, International

Re: Unanticipated death in nonhuman primate: PHS Assurance A3125-01

Dear Dr. Wolff,

A three ½ year old rhesus macaque was found dead in its cage by the on-call veterinarian on Sunday afternoon, August 11, 2019, at approximately 1:15 PM. It had been seen alive by an animal caretaker at approximately 10 AM, when it had been given treats. The animal had become entangled in an environmental enrichment toy tethered by a chain to the front of the cage. The chain was in the animal's mouth and encircled its head. The on-call veterinarian inspected all other cages in the facility for similar devices and found none. Pertinent individuals were contacted and informed.

Gross necropsy findings included a swollen, discolored tongue, the imprint of the chain on the animal's cheeks lateral to each labial commissure, and a small amount of bleeding from the gums of the left maxillary cheek teeth. There were no other gross findings, particularly of the neck, larynx and trachea, all of which were normal in appearance. Pertinent histopathology findings included vascular congestion of the tongue, hypaxial muscles of the neck, and meninges, degeneration of skin cells of the affected cheek, mild

hemorrhage of the neck muscles, meninges, and larynx, and cardiac lesions consistent with concentric left ventricular hypertrophy and cardiomyopathy. The latter condition has been described in macaques from the California Primate Research Center at Davis from which this animal originated (Reader JR *et al.*, Comp Med 66:162-169, 2016).

Considering the histologic lesions and gross findings, we interpret the death to be caused by shock and presumed cardiac failure from ventricular hypertrophy, precipitated by the animal having become entangled in the chain tethering the enrichment device. Neurogenic (vasovagal) syncope may have contributed to the arrest. In this case the animal would have lost consciousness (akin to fainting), and would not therefore have been able to escape entrapment. Persistent cerebral hypoperfusion and progressive bradycardia then led to cardiac arrest, arrest that was precipitated by an abnormal heart. The numerous tissues with vascular congestion may suggest strangulation as a cause of death, but congestion of the type observed may also be seen in postmortem hypostasis (livor mortis), complicating interpretation.

The toy is a commercially available, hard plastic ring (Nylabone ring – Bioserve), with a central hole to allow easy manipulation. It has been in use in the facility for many years and is typically placed in the cage, either free or tethered to the top of the cage with a padlock. In the incident described, the toy was hanging from the front of the cage, a length of chain was looped through the toy, and the two ends of the chain were connected to one another by a brass padlock. The entire apparatus - chain, padlock and toy - were outside the cage, and the intention was to allow the animal to play with it through the cage bars. Unfortunately, the animal pulled the chain and padlock through the cage bars, an impressive feat in that there is little room for error in maneuvering the padlock through the cage bars, the width of the padlock and that of the space between bars being approximately equal. The small cranial circumference of the young animal contributed to the outcome, in that a larger animal would not have been able to loop the chain around its head. It is also possible that the early lesions of a cardiac abnormality contributed to the animal's death. This is the first such incident in our vivarium and we consider it a tragic but unforeseeable accident. Care staff have been re-trained concerning the use of the device, especially with regard to the length of the chain tether. It will no longer be used on the cage front.

Regards.

(b) (6)

Maria T. Zuber

Ward, Joan (NIH/OD) [E]

From: OLAW Division of Compliance Oversight (NIH/OD)
Sent: Monday, September 16, 2019 11:13 AM
To: (b) (6)
Cc: OLAW Division of Compliance Oversight (NIH/OD)
Subject: RE: Incident under PHS Policy, Assurance A3125-01

Thank you (b) (6) for this final report. Dr. Wolff will respond soon.

Regards,
Joan

From: (b) (6)
Sent: Monday, September 16, 2019 10:27 AM
To: OLAW Division of Compliance Oversight (NIH/OD) <olawdco@od.nih.gov>; Maria Zuber <zuber@mit.edu>
Cc: (b) (6) James G Fox <jgfox@mit.edu>; HELH@med.mit.edu; (b) (6) (b) (6) cacpo <cacpo@mit.edu>
Subject: Incident under PHS Policy, Assurance A3125-01

To Whom it May Concern,

Please find attached a memo signed by our IO, Dr. Maria T Zuber, regarding an incident which occurred at MIT (PHS Assurance A3125-01, AAALAC unit 000191) on 8/11/19, as preliminarily reported to Dr. Axel Wolff by Dr. James Fox on 8/12/19.

Thanks,
(b) (6)

(b) (6)

A3125-T

Office of Laboratory Animal Welfare

OLAW

Initial Report of Noncompliance

By: aw

Date: 8/15/19 Time: 11:45

Name of Person reporting: Jim Fox
Telephone #: (b) (6)
Fax #:
Email:

Name of Institution: Massachusetts Institute of Technology
Assurance number: A3125

Did incident involve PHS funded activity? ?
Funding component: _____
Was funding component contacted (if necessary): _____

What happened?

for quarantine, was groggy. Tangled in enrichment chain. Chain in mouth & died. Blood pressure dropped.

Species involved: Primate, Rhesus
Personnel involved:
Dates and times:
Animal deaths:

Projected plan and schedule for correction/prevention (if known): _____

Check other cages, & either shorten chain or remove.

Projected submission to OLAW of final report from Institutional Official:

OFFICE USE ONLY
Case #_____