

Modification Form for Permit BIO-LHRI-0060

Permit Holder: *University of Wisconsin*

Approved Personnel

(Please stroke out any personnel to be removed)

Additional Personnel

(Please list additional personnel here)

Please stroke out any approved Biohazards to be removed below

Write additional Biohazards for approval below. *

Approved Microorganisms

Adenoviruses, Bacteria

Approved Cells

Rodent (primary), rat cardiomyocytes, Human (established), HEK 293

Approved Use of Human Source Material

Approved GMO

E1A oncogenes, Adenoviruses containing eNOS, Adenoviruses containing a dominant negative mutant of GSK-3 beta, Adenovirus containing a dominant negative mutant of AKT1, Adenoviruses containing calpastatin,

Approved use of Animals

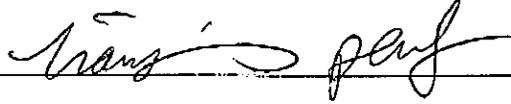
mice

Approved Toxin(s)

Lipopolysaccharide

* PLEASE ATTACH A MATERIAL SAFETY DATA SHEET OR EQUIVALENT FOR NEW BIOHAZARDS.
** PLEASE ATTACH A BRIEF DESCRIPTION OF THE WORK THAT EXPLAINS THE BIOHAZARDS USED AND HOW THEY WILL BE USED.

As the principal investigator, I have ensured that all of the personnel named on the form have been trained. I will ensure that this project will follow the Western Biosafety Guidelines and Procedures Manual for Containment Level 1 2 Laboratories (and the Level 3 Facilities Manual for Level 3 projects). I will ensure that UWO faculty, staff and students working in my laboratory have an up-to-date Hazard Communication Form, found at <http://www.wph.uwo.ca>.

Signature of Permit Holder: 

Classification: 2

Date of Last Biohazardous Agents Registry Form: Oct 22, 2007

Date of Last Modification (if applicable): Jun 26, 2009

BioSafety Officer(s): _____

Chair, Biohazards Subcommittee: _____

Peng - BIO-LHRI-0060

Permit Holder: Tianqing Peng

Lipopolysaccharide (LPS)

LPS is component of gram-negative bacteria, which is used to induce endotoxemia in animal models to mimic human conditions of sepsis. We treat cultured mouse cardiomyocytes with LPS and analyze the proinflammatory mediators' expression 4 hours after LPS incubation. In animal study, LPS is injected to adult mice (I.P.). Two or 24 hours later, animals are killed and hearts are collected for contractility measurement and assay for cytokine production.

Sept 23, 2009
Tianqing Peng

Subject: [Fwd: Modification Form: Peng]
From: Jennifer Stanley <jstanle2@uwo.ca>
Date: Fri, 25 Sep 2009 10:08:44 -0400
To: Tianqing Peng <tpeng2@uwo.ca>

Hi Dr. Peng
I got your information by fax - thanks!
I just have a couple of questions:
1. How much lipopolysaccharide (LPS) do you use at once?
2. How much LPS do you store?
3. Do you have any biosecurity measures in place, such as limiting access to the LPS
(for more information, please see the attached document)?
Regards
Jennifer

----- Original Message -----
Subject: Modification Form: Peng
Date: Tue, 22 Sep 2009 14:57:06 -0400
From: Jennifer Stanley <jstanle2@uwo.ca>
To: Tianqing Peng <tpeng2@uwo.ca>

Hi Dr. Peng
Please update your Biohazard Form to reflect the use of LPS (per your AUS protocol).
I have attached the instructions
Thanks!
Jennifer

Biosecurity_Requirements_FINAL_with_Kidder_comments.pdf

Content-Type: application/pdf
Content-Encoding: base64

SIGMA-ALDRICH

MATERIAL SAFETY DATA SHEET

Date Printed: 09/24/2009

Date Updated: 05/07/2009

Version 1.4

Section 1 - Product and Company Information

Product Name LIPOPOLYSACCHARIDE FROM SALMONELLA
TYPHOSA PHENOL EXTRACT
Product Number L6386
Brand SIGMA
Company Sigma-Aldrich Canada, Ltd
Address 2149 Winston Park Drive
Oakville ON L6H 6J8 CA
Technical Phone: 9058299500
Fax: 9058299292
Emergency Phone: 800-424-9300

Section 2 - Composition/Information on Ingredient

| Substance Name | CAS # | SARA 313 |
|--|-------|----------|
| LIPOPOLYSACCHARIDE FROM SALMONELLATYPHOSAPHENOL EXTRACT | None | No |

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Harmful.

Pyrogen. May cause fever. Do not use if skin is cut or scratched.
Wash thoroughly after handling.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is
conscious. Call a physician.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If breathing becomes difficult,
call a physician.

DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for
at least 15 minutes. Remove contaminated clothing and shoes.
Call a physician.

EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of
water for at least 15 minutes. Assure adequate flushing by
separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

FLASH POINT

N/A

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Section 6 - Accidental Release Measures

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

STORAGE

Store at 2-8°C

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

Section 9 - Physical/Chemical Properties

| | |
|-----------------------|-----|
| pH | N/A |
| BP/BP Range | N/A |
| MP/MP Range | N/A |
| Freezing Point | N/A |
| Vapor Pressure | N/A |
| Vapor Density | N/A |
| Saturated Vapor Conc. | N/A |
| Bulk Density | N/A |
| Odor Threshold | N/A |
| Volatile% | N/A |
| VOC Content | N/A |
| Water Content | N/A |
| Solvent Content | N/A |
| Evaporation Rate | N/A |

| | |
|-----------------------|-----|
| Viscosity | N/A |
| Surface Tension | N/A |
| Partition Coefficient | N/A |
| Decomposition Temp. | N/A |
| Flash Point | N/A |
| Explosion Limits | N/A |
| Flammability | N/A |
| Autoignition Temp | N/A |
| Refractive Index | N/A |
| Optical Rotation | N/A |
| Miscellaneous Data | N/A |
| Solubility | N/A |

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Multiple Routes: May be harmful by inhalation, ingestion, or skin absorption.

CONDITIONS AGGRAVATED BY EXPOSURE

The toxicological properties have not been thoroughly investigated.

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: None
Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION

Symbol of Danger: Xn
Indication of Danger: Harmful.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Harmful.
US Statements: Pyrogen. May cause fever. Do not use if skin is cut or scratched. Wash thoroughly after handling.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: No
NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2009 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

Attn: Biosafety officer Jennifer Stanley

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Modification Form for Permit BIO-LHRI-0060

Permit Holder: Groggins Peng

Approved Personnel
 (Please stroke out any personnel to be removed)

Additional Personnel
 (Please list additional personnel here)

Approved Microorganisms

Please stroke out any approved Biohazards to be removed below

Adenoviruses

Write additional Biohazards for approval below. *

Bacteria

Approved Cells

Rodent (primary), rat cardiomyocytes, Human (established), HEK 293

Approved Use of Human Source Material

Approved GMO

E1A oncogenes, Adenoviruses containing eNOS, Adenoviruses containing a dominant negative mutant of GSK-3 beta, Adenovirus containing a dominant negative mutant of AKT1, Adenoviruses containing calpastatin

DH52 Containing Luc-sirt1 3'UTR

Approved use of Animals

mice

Approved Toxin(s)

* PLEASE ATTACH A MATERIAL SAFETY DATA SHEET OR EQUIVALENT FOR NEW BIOHAZARDS.
 ** PLEASE ATTACH A BRIEF DESCRIPTION OF THE WORK THAT EXPLAINS THE BIOHAZARDS USED AND HOW THEY WILL BE USED.

Classification: 2

Date of last Biohazardous Agents Registry Form: Oct 22, 2007

Signature of Permit Holder: Groggins Peng

BioSafety Officer(s): Naile Ryder June 8/09

J. Stanley June 26/09

Chair, Biohazards Subcommittee: G. H. Keller

Attn: Biosafety officer, Jennifer Stanley

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BIO-LHRI-0060

Permit Holder: Tianqing Peng

Description for DH5a containing Luc-Sirt1 3'UTR

DH5a is an engineering bacterium, which is usually used to amplify DNA. Luc-Sirt1 3'UTR is a DNA plasmid containing luciferase linking Sirt1 3' non-translational region. The Sirt1 3'UTR is used to modulate luciferase expression. Thus, we will grow DH5a containing Luc-Sirt1 3'UTR and then isolate Luc-Sirt1 3'UTR from the bacteria. Finally, the Luc-Sirt1 3'UTR will be transfected into cultured cardiomyocytes or HEK293 to investigate the function of Sirt1 3'UTR by monitoring the luciferase activity.

Tianqing Peng
may 28, 2009

BIO-LHRI-0060

THE UNIVERSITY OF WESTERN ONTARIO
BIOHAZARDOUS AGENTS REGISTRY FORM
Revised Biohazards Subcommittee: January, 2007

This form must be completed by each Principal Investigator holding a grant administered by the University of Western Ontario where the use of biohazardous infectious agents are described in the experimental work proposed. The form must also be completed if animal work is proposed involving the use of biohazardous agents or animal carrying zoonotic agents infectious to humans. Containment Levels will be required in accordance with Laboratory Biosafety Guidelines, 3rd edition, 2004, Health Canada (HC) or Containment Standards for Veterinary Facilities, 1st edition 1996, Canadian Food Inspection Agency (CFIA).

Completed forms are to be returned to Occupational Health and Safety (Stevenson-Lawson Building, Room 60) for forward to the Biohazard Subcommittee. For questions regarding this form, please contact the Biosafety Coordinator at extension 81135. If there are changes to the information on this form (excluding grant title and funding agencies) modifications must be completed and sent to Occupational Health and Safety. See website: www.uwo.ca/humanresources

PRINCIPAL INVESTIGATOR Tiangqing peng
SIGNATURE Tiangqing peng
DEPARTMENT Center for Critical Illness Research, Lawson Health Research Institute
ADDRESS VRL A6-120, 800 Commissioners Road London ON
PHONE NUMBER 519-685-2500 ext 55441
EMAIL tpeng2@uwo.ca

Location of experimental work to be carried out: Building(s) VRL Room(s) A6-120
*For work being performed at Institutions affiliated with the University of Western Ontario, the Safety Officer for the Institution where experiments will take place must sign the form prior to it being sent to Occupational Health and Safety (See Section 12.0, Approvals). For research being done at Lawson Health Research Institute, London Regional Cancer Centre, Child and Parent Research Institute or Roberts Research Institute, University Biosafety Committee members can also sign as the Safety Officer.

TITLE OF GRANT(S):
Role of Calpain activation in myocardial dysfunction in sepsis

PLEASE ATTACH A BRIEF DESCRIPTION OF YOUR WORK, SUCH A THE RESEARCH GRANT SUMMARY(S) THAT EXPLAINS THE BIOHAZARDS USED. PROJECTS SUBMITTED WITHOUT A SUMMARY WILL NOT BE REVIEWED.

FUNDING AGENCY/AGENCIES CIHR and HSFO

Names of all personnel working under Principal Investigators supervision in this location:

- i) Es Shen
- ii) Ying Li
- iii) Jue Fan
- iv) _____
- v) _____

* DESCRIPTION MUST BE ATTACHED TO THIS FORM OR PROJECT WILL NOT BE REVIEWED*

1.0 Microorganisms

1.1 Does your work involve the use of microorganisms or biological agents of plant or animal origin (including but not limited to viruses, prions, parasites, bacteria)? YES NO
 If no, please proceed to Section 2.0

1.2 Please complete the table below:

| Name of Biological agent(s) | Is it known to be a human pathogen? YES/NO | Is it known to be an animal pathogen? YES/NO | Is it known to be a zoonotic agent? YES/NO | Maximum quantity to be cultured at one time? |
|-----------------------------|---|--|---|--|
| <i>Adenoviruses</i> | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

1.3 For above named organism(s) or biological agent(s) circle HC or CFIA Containment Level required.

1 (2) 3

1.4 Source of microorganism(s) or biological agent(s)? *Generated in house from viral construct.*

2.0 Cell Culture

2.1 Does your work involve the use of cell cultures? YES NO
 If no, please proceed to Section 3.0

2.2 Please indicate the type of primary cells (ie. derived from fresh tissue) that will be grown in culture in the table below

| Cell Type | Is this cell type used in your work? | Source of Primary Cell Culture Tissue |
|-------------------|---|---------------------------------------|
| Human | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Rodent | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <i>Rat cardiomyocytes</i> |
| Non-human primate | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Other (specify) | | |

2.3 Please indicate the type of established cells that will be grown in culture in the table below.

| Cell Type | Is this cell type used in your work? | Specific cell line(s) | Supplier / Source |
|-------------------|---|-----------------------|-------------------------------|
| Human | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <i>HEK 293 cells</i> | <i>Human embryonic kidney</i> |
| Rodent | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| Non-human primate | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| Other (specify) | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |

2.4 For above named cell types(s) circle HC or CFIA containment level required 1 (2) 3

* DESCRIPTION MUST BE ATTACHED TO THIS FORM OR PROJECT WILL NOT BE REVIEWED*

3.0 Use of Human Source Materials

3.1 Does your work involve the use of human source materials? YES NO
If no, please proceed to Section 4.0

3.2 Indicate if the following will be used in the laboratory
♦ Human blood (whole) or other bodily fluids YES NO If YES, Specify _____
♦ Human blood (fraction) or other bodily fluids YES NO If YES, Specify _____
♦ Human organs (unpreserved) YES NO If YES, Specify _____
♦ Human tissues (unpreserved) YES NO If YES, Specify _____

3.3 Is human source known to be infected with and infectious agent YES NO
If YES, please name infectious agent _____

3.4 For above named materials circle HC or CFIA containment level required. 1 2 3

4.0 Genetically Modified Organisms and Cell lines

4.1 Will genetic modifications be made to the microorganisms, biological agents or cells described in Sections 1.0 and 2.0? YES NO
If no, please proceed to Section 5.0

4.2 Will genetic sequences from the following be involved: YES NO
♦ HIV if YES specify _____
♦ HTLV 1 or 2 or genes from any CDC class 1 pathogens YES NO if YES specify _____
♦ Other human or animal pathogen and or their toxins YES NO if YES specify _____

4.3 Will intact genetic sequences be used from
♦ SV 40 Large T antigen YES NO If YES specify _____
♦ Known oncogenes YES NO If YES specify E1A

4.4 Will a live vector(s) (viral or bacterial) be used for gene transduction YES NO
If YES name virus Adenoviruses

4.5 List specific vector(s) to be used: Adenoviruses

4.6 Will virus be replication defective YES NO

4.7 Will virus be infectious to humans or animals YES NO

4.8 Will this be expected to increase the Containment Level required YES NO

5.0 Human Gene Therapy Trials

5.1 Will human clinical trials using the viral vector in 4.0 be conducted? YES NO
If no, please proceed to Section 6.0
If YES attach a full description of the make-up of the virus.

5.2 Will virus be able to replicate in the host? YES NO

5.3 How will the virus be administered? _____

5.4 Please give the Health Care Facility where the clinical trial will be conducted: _____

5.5 Has human ethics approval been obtained? YES NO

6.0 Animal Experiments

6.1 Will any of the agents listed be used in live animals? YES NO
If no, please proceed to section 7.0

6.2 Name of animal species to be used C57BL6 mice

6.3 AUS protocol # Under application

6.4 If using murine cell lines, have they been tested for murine pathogens? YES NO

7.0 Use of Animal species with Zoonotic Hazards

7.1 Will any of the following animals or their organs, tissues, lavages or other bodily fluids including blood be used:

- Pound source dogs YES NO
- Pound source cats YES NO
- Sheep or goats YES NO
- Non- Human Primates YES NO If YES specify species _____
- Wild caught animals YES NO If YES specify species _____
colony # _____

8.0 Biological Toxins

8.1 Will toxins of biological origin be used? YES NO
If no, please proceed to Section 9.0

8.2 If YES, please name the toxin _____

8.3 What is the LD₅₀ (specify species) of the toxin _____

9.0 Import Requirements

9.1 Will the agent be imported? YES NO
If no, please proceed to Section 10.0
If yes, country of origin _____

9.2 Has an Import Permit been obtained from HC for human pathogens? YES NO

9.3 Has an import permit been obtained from CFIA for animal pathogens? YES NO

9.4 Has the import permit been sent to OHS? YES NO
If yes, Permit # _____

10.0 Training Requirements for Personnel named on Form

All personnel named on the above form who will be using any of the above named agents are required to attend the following training courses given by OHS

- Biosafety
- Laboratory and Environmental/Waste Management Safety
- WHMIS

As the Principal Investigator, I have ensured that all of the personnel named on the form who will be using any of the biohazardous agents in Sections 1.0 to 9.0 have been trained.

SIGNATURE *Francis perf*

11.0 Containment Levels

11.1 For the work described in sections 1.0 to 9.0, please circle the highest HC or CFIA Containment Level required. 1 (2) 3

11.2 Has the facility been certified by OHS for this level of containment? YES NO

11.3 If yes, please give the date and permit number: July 4, 2007, 801-5181R

12.0 Approvals

UWO Biohazard Subcommittee
Signature *SM Kelder* Date 23 Oct. '07

Safety Officer for Institution where experiments will take place
Signature *[Signature]* Date SEPT 17, 2007

Safety Officer for University of Western Ontario (if different than above)
Signature *[Signature]* Date Oct 22 /07

Attn: Biosafety officer Jennifer Stanley

Page 2-2

Modification Form for Permit BIO-LEPRL-0060
Permit Holder: Jennifer Peus

Approved Personnel
(Please stroke out any personnel to be removed)

Additional Personnel
(Please list additional personnel here)

| | Please stroke out any approved Biohazards to be removed below | Write additional Biohazards for approval below. * |
|---------------------------------------|--|---|
| Approved Microorganisms | Adenoviruses | Bacteria |
| Approved Cells | Rodent (primary), rat cardiomyocytes, Human (established), HEK 293 | |
| Approved Use of Human Source Material | | |
| Approved GMO | E1A oncogenes, Adenoviruses containing eNOS, Adenoviruses containing a dominant negative mutant of GSK-3 beta, Adenovirus containing a dominant negative mutant of AKT1, Adenoviruses containing calpastatin | DH52 Containing Luc-sirt1 3'UTR |
| Approved use of Animals | mice | |
| Approved Toxin(s) | | |

* PLEASE ATTACH A MATERIAL SAFETY DATA SHEET OR EQUIVALENT FOR NEW BIOHAZARDS.
** PLEASE ATTACH A BRIEF DESCRIPTION OF THE WORK THAT EXPLAINS THE BIOHAZARDS USED AND HOW THEY WILL BE USED.

Classification: 2

Date of last Biohazardous Agents Registry Form: Oct 22, 2007

Signature of Permit Holder: Jennifer Peus

BioSafety Officer(s): Maile Ryder June 8/09

Chair, Biohazards Subcommittee: _____

Attn: BioSafety officer, Jennifer Stanley

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BIO-LHRI-0060

Permit Holder: Tianqing Peng

Description for DH5a containing Luc-Sirt1 3'UTR

DH5a is an engineering bacterium, which is usually used to amplify DNA. Luc-Sirt1 3'UTR is a DNA plasmid containing luciferase linking Sirt1 3' non-translational region. The Sirt1 3'UTR is used to modulate luciferase expression. Thus, we will grow DH5a containing Luc-Sirt1 3'UTR and then isolate Luc-Sirt1 3'UTR from the bacteria. Finally, the Luc-Sirt1 3'UTR will be transfected into cultured cardiomyocytes or HEK293 to investigate the function of Sirt1 3'UTR by monitoring the luciferase activity.

Tianqing Peng
may 28, 2008

BIO-LHR1-0060

THE UNIVERSITY OF WESTERN ONTARIO
BIOHAZARDOUS AGENTS REGISTRY FORM
Revised Biohazards Subcommittee: January, 2007

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PRINCIPAL INVESTIGATOR Tianging peng
SIGNATURE Tianging peng
DEPARTMENT Center for Critical Illness Research, Lawson Health Research Institute
ADDRESS VRL A6-120, 800 Commissioners Road London, ON
PHONE NUMBER 519-685-8500 ext 5544-1
EMAIL tpeng2@uwo.ca

Location of experimental work to be carried out: Building(s) VRL Room(s) A6-120
*For work being performed at Institutions affiliated with the University of Western Ontario, the Safety Officer for the Institution where experiments will take place must sign the form prior to it being sent to Occupational Health and Safety (See Section 12.0, Approvals). For research being done at Lawson Health Research Institute, London Regional Cancer Centre, Child and Parent Research Institute or Roberts Research Institute, University Biosafety Committee members can also sign as the Safety Officer.

TITLE OF GRANT(S):
Role of calpain activation in myocardial dysfunction in sepsis

PLEASE ATTACH A BRIEF DESCRIPTION OF YOUR WORK, SUCH A THE RESEARCH GRANT SUMMARY(S) THAT EXPLAINS THE BIOHAZARDS USED. PROJECTS SUBMITTED WITHOUT A SUMMARY WILL NOT BE REVIEWED.

FUNDING AGENCY/AGENCIES CZHR and HSFO

Names of all personnel working under Principal Investigators supervision in this location:

- i) E Shen
- ii) Ying Li
- iii) Jue Fan
- iv) _____
- v) _____

* DESCRIPTION MUST BE ATTACHED TO THIS FORM OR PROJECT WILL NOT BE REVIEWED*

1.0 Microorganisms

1.1 Does your work involve the use of microorganisms or biological agents of plant or animal origin (including but not limited to viruses, prions, parasites, bacteria)? YES NO
 If no, please proceed to Section 2.0

1.2 Please complete the table below:

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|-----------------------------|---|--|---|--|
| <i>Adenoviruses</i> | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

1.3 For above named organism(s) or biological agent(s) circle HC or CFIA Containment Level required.

1 ② 3

1.4 Source of microorganism(s) or biological agent(s)? *Generated in house from viral construct.*

2.0 Cell Culture

2.1 Does your work involve the use of cell cultures? YES NO
 If no, please proceed to Section 3.0

2.2 Please indicate the type of primary cells (ie. derived from fresh tissue) that will be grown in culture in the table below

| Cell Type | Is this cell type used in your work? | Source of Primary Cell Culture Tissue |
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| Rodent | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <i>Rat cardiomyocytes</i> |
| Non-human primate | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Other (specify) | | |

2.3 Please indicate the type of established cells that will be grown in culture in the table below.

| Cell Type | Is this cell type used in your work? | Specific cell line(s) | Supplier / Source |
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| Rodent | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| Non-human primate | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| Other (specify) | <input type="checkbox"/> Yes <input type="checkbox"/> No | | |

2.4 For above named cell types(s) circle HC or CFIA containment level required 1 ② 3

3.0 Use of Human Source Materials

3.1 Does your work involve the use of human source materials? YES NO
If no, please proceed to Section 4.0

3.2 Indicate if the following will be used in the laboratory

- ◆ Human blood (whole) or other bodily fluids YES NO If YES, Specify _____
- ◆ Human blood (fraction) or other bodily fluids YES NO If YES, Specify _____
- ◆ Human organs (unpreserved) YES NO If YES, Specify _____
- ◆ Human tissues (unpreserved) YES NO If YES, Specify _____

3.3 Is human source known to be infected with and infectious agent YES NO
If YES, please name infectious agent _____

3.4 For above named materials circle HC or CFIA containment level required. 1 2 3

4.0 Genetically Modified Organisms and Cell lines

4.1 Will genetic modifications be made to the microorganisms, biological agents or cells described in Sections 1.0 and 2.0? YES NO
If no, please proceed to Section 5.0

4.2 Will genetic sequences from the following be involved:

- ◆ HIV YES NO
if YES specify _____
- ◆ HTLV 1 or 2 or genes from any CDC class 1 pathogens YES NO
if YES specify _____
- ◆ Other human or animal pathogen and or their toxins YES NO
if YES specify _____

4.3 Will intact genetic sequences be used from

- ◆ SV 40 Large T antigen YES NO If YES specify _____
- ◆ Known oncogenes YES NO If YES specify E1A

4.4 Will a live vector(s) (viral or bacterial) be used for gene transduction YES NO
If YES name virus Adenoviruses

4.5 List specific vector(s) to be used: Adenoviruses

4.6 Will virus be replication defective YES NO

4.7 Will virus be infectious to humans or animals YES NO

4.8 Will this be expected to increase the Containment Level required YES NO

* DESCRIPTION MUST BE ATTACHED TO THIS FORM OR PROJECT WILL NOT BE REVIEWED*

5.0 Human Gene Therapy Trials

5.1 Will human clinical trials using the viral vector in 4.0 be conducted? YES NO
If no, please proceed to Section 6.0
If YES attach a full description of the make-up of the virus.

5.2 Will virus be able to replicate in the host? YES NO

5.3 How will the virus be administered?

5.4 Please give the Health Care Facility where the clinical trial will be conducted:

5.5 Has human ethics approval been obtained? YES NO

6.0 Animal Experiments

6.1 Will any of the agents listed be used in live animals? YES NO
If no, please proceed to section 7.0

6.2 Name of animal species to be used C57BL6 mice

6.3 AUS protocol # Under application

6.4 If using murine cell lines, have they been tested for murine pathogens? YES NO

7.0 Use of Animal species with Zoonotic Hazards

7.1 Will any of the following animals or their organs, tissues, lavages or other bodily fluids including blood be used:

- ◆ Pound source dogs YES NO
◆ Pound source cats YES NO
◆ Sheep or goats YES NO
◆ Non-Human Primates YES NO If YES specify species
◆ Wild caught animals YES NO If YES specify species colony #

8.0 Biological Toxins

8.1 Will toxins of biological origin be used? YES NO
If no, please proceed to Section 9.0

8.2 If YES, please name the toxin

8.3 What is the LD50 (specify species) of the toxin

9.0 Import Requirements

9.1 Will the agent be imported? YES NO
If no, please proceed to Section 10.0
If yes, country of origin _____

9.2 Has an Import Permit been obtained from HC for human pathogens? YES NO

9.3 Has an import permit been obtained from CFIA for animal pathogens? YES NO

9.4 Has the import permit been sent to OHS? YES NO
If yes, Permit # _____

10.0 Training Requirements for Personnel named on Form

All personnel named on the above form who will be using any of the above named agents are required to attend the following training courses given by OHS

- ◆ Biosafety
- ◆ Laboratory and Environmental/Waste Management Safety
- ◆ WHMIS

As the Principal Investigator, I have ensured that all of the personnel named on the form who will be using any of the biohazardous agents in Sections 1.0 to 9.0 have been trained.

SIGNATURE *Travis Perry*

11.0 Containment Levels

11.1 For the work described in sections 1.0 to 9.0, please circle the highest HC or CFIA Containment Level required. 1 2 3

11.2 Has the facility been certified by OHS for this level of containment? YES NO

11.3 If yes, please give the date and permit number: July 4, 2007, 801-581R

12.0 Approvals

UWO Biohazard Subcommittee *SM Kildner* 23 Oct. '07

Signature *Smiljanica* Date Sept 7, 2007

Safety Officer for Institution where experiments will take place
Signature *[Signature]* Date SEPT 17, 2007

Safety Officer for University of Western Ontario (if different than above)
Signature *Stanley* Date Oct 22 /07