THE UNIVERSITY OF WESTERN ONTARIO
BIOHAZARDOUS AGENTS REGISTRY FORM
Approved Biohazards Subcommittee: March 27, 2009
Biosafety Website: www.uwo.ca/humanresources/biosafety/

This form must be completed by each Principal Investigator holding a grant administered by the University of Western Ontario or in charge of a laboratory/facility where the use of Level 1, 2 or 3 biohazardous agents is described in the laboratory or animal work proposed. The form must also be completed if any work is proposed involving animals carrying zoonotic agents infectious to humans or involving plants, fungi, or insects that require Public Health Agency of Canada (PHAC) or Canadian Food Inspection Agency (CFIA) permits.

This form must also be updated at least every 3 years or when there are changes to the biohazards being used.

Containment Levels will be established in accordance with Laboratory Biosafety Guidelines, 3rd edition, 2004, Public Health Agency of Canada (PHAC) 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, (OHS), (Support Services Building, Room 4190) for distribution to the Biohazard Subcommittee. For questions regarding this form, please contact the Biosafety Officer at extension 81135 or biosafety@uwo.ca. If there are changes to the information on this form (excluding grant title and funding agencies), contact Occupational Health and Safety for a modification form. See website: www.uwo.ca/humanresources/biosafety

PRINCIPAL INVESTIGATOR	Dr Stephen Lamber
SIGNATURE	~~519-868-0991~~
DEPARTMENT	Physiology and Pharmacology
ADDRESS	Robarts Research Institute Rm 0244
PHONE NUMBER	x 24110
EMERGENCY PHONE NUMBER(S)	519-868-0991
EMAIL	Steve.lamber@uwo.ca

Location of experimental work to be carried out: Building(s) NSB Room(s) 279

*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 its being sent to the University of Western Ontario Biosafety Officer (See Section 12.0, Approvals).

FUNDING AGENCY/AGENCIES: NSERC, CFI, CIHR, Hearing Foundation
GRANT TITLE(S): "Midbrain contributions to visual cortical function", "Auditory cortical function following cochlear implant", "Adaptive cortical plasticity following deafness", "Acoustic funtion in Auditory cortex following cochlear implant", "Functional organization of auditory cotex following CI"
PLEASE ATTACH A BRIEF DESCRIPTION OF YOUR WORK THAT EXPLAINS THE BIOHAZARDS USED AND HOW THEY WILL BE USED. PROJECTS SUBMITTED WITHOUT A SUMMARY WILL NOT BE REVIEWED.

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

Amee Hall
Andres Carrasco
Kassandra Birtch
Bryan Degagne
Ramona Vas
Scott Nguyen

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)? O YES ⊗ NO
If no, please proceed to Section 2.0

Do you use microorganisms that require a permit from the CFIA? O YES O NO
If YES, please give the name of the species. _____
What is the origin of the microorganism(s)? _____
Please describe the risk (if any) of escape and how this will be mitigated:

_____
_____
_____

Please attach the CFIA permit.
Please describe any CFIA permit conditions:

_____
_____
_____

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? (in Litres)	Source/ Supplier	PHAC or CFIA Containment Level
	O Yes O No	O Yes O No	O Yes O No			O 1 O 2 O 3
	O Yes O No	O Yes O No	O Yes O No			O 1 O 2 O 3
	O Yes O No	O Yes O No	O Yes O No			O 1 O 2 O 3
	O Yes O No	O Yes O No	O Yes O No			O 1 O 2 O 3

*Please attach a Material Safety Data Sheet or equivalent from the supplier.

2.0 Cell Culture

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

2.2 Please indicate the type of primary cells (i.e. 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	AUS Protocol Number
Human	O Yes O No		Not applicable
Rodent	O Yes O No		
Non-human primate	O Yes O No		
Other (specify)	O Yes O No		

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	O Yes O No		
Rodent	O Yes O No		
Non-human primate	O Yes O No		
Other (specify)	O Yes O No		

*Please attach a Material Safety Data Sheet or equivalent from the supplier. (For more information, see www.atcc.org)

2.4 For above named cell types(s) indicate PHAC or CFIA containment level required O 1 O 2 O 3

3.0 Use of Human Source Materials

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

3.2 Indicate in the table below the Human Source Material to be used.

Human Source Material	**Source/Supplier /Company Name**	**Is Human Source Material Known to Be Infected With An Infectious Agent? YES/NO**	**Name of Infectious Agent (If applicable)**	**PHAC or CFIA Containment Level (Select one)**
Human Blood (whole) or other Body Fluid		O Yes O No		O 1 O 2 O 3
Human Blood (fraction) or other Body Fluid		O Yes O No		O 1 O 2 O 3
Human Organs or Tissues (unpreserved)		O Yes O No		O 1 O 2 O 3
Human Organs or Tissues (preserved)		O Yes O No		O 1 O 2 O 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? O YES Ø NO If no, please proceed to Section 5.0

4.2 Will genetic modification(s) involving plasmids be done? O YES, complete table below O NO

Bacteria Used for Cloning *	Plasmid(s) *	Source of Plasmid	Gene Transfected	Describe the change that results

* Please attach a Material Data Sheet or equivalent if available.

4.3 Will genetic modification(s) involving viral vectors be done? O YES, complete table below O NO

Virus Used for Transduction *	Vector(s) *	Source of Vector	Gene Transfected	Describe the change that results

* Please attach a Material Safety Data Sheet or equivalent.

4.4 Will genetic sequences from the following be involved?

- HIV O YES, please specify _____ O NO
- HTLV 1 or 2 or genes from any Level 1 or Level 2 pathogens O YES, specify _____ O NO
- SV 40 Large T antigen O YES O NO
- E1A oncogene O YES O NO
- Known oncogenes O YES, please specify _____ O NO
- Other human or animal pathogen and or their toxins O YES, please specify _____ O NO

4.5 Will virus be replication defective? O YES O NO

4.6 Will virus be infectious to humans or animals? O YES O NO

4.7 Will this be expected to increase the containment level required? O YES O NO

5.0 Human Gene Therapy Trials

5.1 Will human clinical trials be conducted using the viral vector in 4.0? O 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? O YES O 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? O YES, number: _____ O NO O PENDING

6.0 Animal Experiments

6.1 Will live animals be used? ☒ YES O NO If no, please proceed to section 7.0

6.2 Name of animal species to be used Cat

6.3 AUS protocol # 2009-016

6.4 Will any of the agents listed be used in live animals ☒ YES, specify: Cat O 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 body fluids including blood be used?

- Pound source dogs O YES Ø NO
- Pound source cats O YES Ø NO
- Cattle, sheep or goats O YES Ø NO
- Non-human primates O YES, please specify species _____ Ø NO
- Wild caught animals O YES, please specify species & colony # _____ Ø NO
- Birds O YES Ø NO
- Others (wild or domestic) O YES, please specify _____ Ø NO

8.0 Biological Toxins

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

8.2 If YES, please name the toxin(s) Cholera Toxin B
Please attach information, such as a Material Safety Data Sheet, for the toxin(s) used.

8.3 What is the LD_{50} (specify species) of the toxin_____

8.4 How much of the toxin is handled at one time*? 0.5mL of 1% CTB

8.5 How much of the toxin is stored*? 0.75 mg

*For information on biosecurity requirements, please see:
http://www.uwo.ca/humanresources/docandform/docs/healthandsafety/biosafety/Biosecurity_Requirements.pdf

9.0 Insects Requiring CFIA Permits

9.1 Do you use insects that require a permit from the CFIA? O YES Ø NO
If no, please proceed to Section 10.0

9.2 If YES, please give the name of the species. _____

9.3 What is the origin of the insect? _____

9.4 What is the lifestage of the insect? _____

9.5 What is your intention? O Initiate and maintain colony, give location: _____
O "One-off" use, give location: _____

9.6 Please describe the risk (if any) of escape and how this will be mitigated:

_____
_____
_____

9.7 Please attach the CFIA permit.

9.8 Please describe any CFIA permit conditions:

_____
_____
_____

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

10.0 Plants Requiring CFIA Permits

10.1 Do you use plants that require a permit from the CFIA? O YES ☒ NO
If no, please proceed to Section 11.0

10.2 If YES, please give the name of the species. _____

10.3 What is the origin of the plant? _____

10.4 What is the form of the plant (seed, seedling, plant, tree...)? _____

10.5 What is your intention? O Grow and maintain a crop O "One-time" use

10.6 Do you do any modifications to the plant? O YES O NO
If yes, please describe: _____
_____

10.7 Please describe the risk (if any) of loss of the material from the lab and how this will be mitigated:
_____
_____
_____

10.8 Is the CFIA permit attached? O YES O NO

10.9 Please describe any CFIA permit conditions:
_____
_____
_____

11.0 Import Requirements

11.1 Will any of the above agents be imported? O YES, please give country of origin_____
If no, please proceed to Section 10.0 ☒ NO

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

11.3 Has an import permit been obtained from CFIA for animal or plant pathogens? O YES O NO

11.4 Has the import permit been sent to OHS? O YES, please provide permit # _____ O NO

12.0 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 (Western or equivalent)
- Employee Health and Safety Orientation

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 _____

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

13.0 Containment Levels

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

13.2 Has the facility been certified by OHS for this level of containment?

O YES, permit # if on-campus_____
O NO, please certify
⊗ NOT REQUIRED for Level 1 containment

14.0 Procedures to be Followed

14.1 As the Principal Investigator, 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 _____ Date: July 28 2009

15.0 Approvals

UWO Biohazard Subcommittee: SIGNATURE: _____
Date: _____

Safety Officer for Institution where experiments will take place: SIGNATURE: _____
Date: _____

Safety Officer for University of Western Ontario (if different from above): SIGNATURE: _____
Date: _____

Approval Number: _____ Expiry Date (3 years from Approval): _____

Special Conditions of Approval:

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

------- Original Message --------
Subject: Biohazardous Agents Registry Form: Lomber
Date: Thu, 30 Jul 2009 15:25:37 -0400
From: Amee Hall <ahall59@uwo.ca>
To:jstanle2@uwo.ca
CC:steve.lomber@uwo.ca

Hi Jennifer,

I am Dr Lomber's lab tech. Here is a brief description of what we do with the Cholera Toxin B. If you need something more detailed let me know and I will work something up for you.

Cholera Toxin B (CTB) will be injected into specific cortical regions of the cat. The properties of CTB allow it to travel to the neuronal cell body via retrograde transport. Following injection, the CTB will be fully contained within the neural tissue. After a 24-48 hour survival time the animal is then sacrificed. The neuronal tissue will then be processed to enable visual identification of cells which contain the CTB.

Thanks for all your help,

Amee

Canadian Centre for Occupational Health and Safety

CCOHS

RTECS Registry of Toxic Effects of Chemical Substances®

Data source: MDL Information Systems, Inc.

CHEMICAL IDENTIFICATION

RTECS Number	LF3100000
Chemical Name	Exotoxin, vibrio cholerae
CAS Registry Number	9012-63-9
Last Updated	200408
Data Items Cited	10
Compound Descriptor	Mutagen Reproductive Effector Natural Product

Synonyms/Trade Names

Cholera entero-exotoxin
Cholera enterotoxin
Cholera exotoxin
Choleragen
Cholera toxin
exo-Enterotoxin
Vibrio cholerae exotoxin

HEALTH HAZARD DATA

ACUTE TOXICITY DATA

Type of	Route of	Species	Dose	Toxic Effects	Reference

Test	Exposure	Observed	Data		
LD50 - Lethal dose, 50 percent kill	Intravenous	Rodent - mouse	260 ug/kg	Details of toxic effects not reported other than lethal dose value	IMLCAV Immunological Communications. (Marcel Dekker, 270 Madison Ave., New York, NY 10016) V.1- 1972- Volume (issue)/page/year: 1,223,1972
LDLo - Lowest published lethal dose	Intravenous	Primate - monkey	10 ug/kg	Sense Organs and Special Senses (Olfaction) - effect, not otherwise specified Behavioral - food intake (animal) Lungs, Thorax, or Respiration - dyspnea	TOXIA6 Toxicon. (Pergamon Press Ltd., Headington Hill Hall, Oxford OX3 OBW, UK) V.1- 1962- Volume (issue)/page/year: 18,309,1980
LDLo - Lowest published lethal dose	Intravenous	Rodent - rabbit	100 ug/kg	Details of toxic effects not reported other than lethal dose value	TOXIA6 Toxicon. (Pergamon Press Ltd., Headington Hill Hall, Oxford OX3 OBW, UK) V.1- 1962- Volume (issue)/page/year: 19,701,1981
TDLo - Lowest published toxic dose	Intraperitoneal	Rodent - mouse	6.4 mg/kg	Behavioral - analgesia	EJPHAZ European Journal of Pharmacology. (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1967- Volume (issue)/page/year: 416,223,2001
TDLo - Lowest published toxic dose	Parenteral	Rodent - rat	2.5 ug/kg	Biochemical - Metabolism (Intermediary) - effect on inflammation or mediation of inflammation Blood - hemorrhage	TOXIA6 Toxicon. (Pergamon Press Ltd., Headington Hill Hall, Oxford OX3 OBW, UK) V.1- 1962- Volume (issue)/page/year: 40,1487,2002
TDLo - Lowest published toxic dose	Intraduodenal	Rodent - rat	5.55 ug/kg	Gastrointestinal - other changes Biochemical - Metabolism (Intermediary) - effect on inflammation or mediation of inflammation	TOXIA6 Toxicon. (Pergamon Press Ltd., Headington Hill Hall, Oxford OX3 OBW, UK) V.1- 1962- Volume (issue)/page/year: 42,183,2003

REPRODUCTIVE DATA

Type of Test	Route of Exposure	Species Observed	Dose Data	Sex/Duration	Toxic Effects	Reference

TDLo - Lowest published toxic dose	Intravenous	Rodent - mouse	40 ug/kg	female 8-10 day(s) after conception	Reproductive - Fertility - post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants)	JRPFA4 Journal of Reproduction and Fertility. (Biochemical Soc. Book Depot, POB 32, Commerce Way, Colchester, Essex CO2 8HP, UK) V.1- 1960- Volume (issue)/page/year: 45,315,1975
TDLo - Lowest published toxic dose	Intravenous	Rodent - mouse	8 ug/kg	female 4-6 day (s) after conception	Reproductive - Fertility - post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants) Reproductive - Fertility - abortion	IMLCAV Immunological Communications. (Marcel Dekker, 270 Madison Ave., New York, NY 10016) V.1- 1972- Volume (issue)/page/year: 1,223,1972

MUTATION DATA

Type of Test	Route of Exposure	Species Observed	Dose Data	Reference
Unscheduled DNA synthesis		Rodent - mouse Cells - not otherwise specified	10 ug/L	CRNGDP Carcinogenesis (London). (Oxford Univ. Press, Pinkhill House, Southfield Road, Eynsham, Oxford OX8 1JJ, UK) V.1- 1980- Volume (issue)/page/year: 8,377,1987

REVIEWS

TOXICOLOGY REVIEW	MUREAV Mutation Research. (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1964- Volume(issue)/page/year: 544,217,2003

END OF RECORD

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Hide | Mark Record | Show Term(s) | Show Contents | Field Help | Back to Results

Canadian Centre for Occupational Health and Safety

CCOHS RTECS Registry of Toxic Effects of Chemical Substances®

Data source: MDL Information Systems, Inc.

Record Contents

Format: All Sections

- Chemical Identification
- [x] Reproductive Data

REFRESH RECORD

CHEMICAL IDENTIFICATION

RTECS Number	JZ2750000
Chemical Name	Endotoxin, vibrio cholerae
Last Updated	198910
Data Items Cited	1
Compound Descriptor	Reproductive Effector Natural Product

Synonyms/Trade Names

Cholera endotoxin
Vibrio cholerae endotoxin

HEALTH HAZARD DATA

REPRODUCTIVE DATA

Type of Test	Route of Exposure	Species Observed	Dose Data	Sex/Duration	Toxic Effects	Reference
TDLo - Lowest published toxic dose	Intravenous	Rodent - mouse	600 ug/kg	female 12 day (s) after conception	Reproductive - Fertility - post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants)	JRPFA4 Journal of Reproduction and Fertility. (Biochemical Soc. Book Depot, POB 32, Commerce Way, Colchester, Essex CO2 8HP, UK) V.1- 1960- Volume (issue)/page/year:

Reproductive - Effects on Embryo or Fetus - fetal death	45,315,1975

END OF RECORD

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www.ccohs.ca E-mail: clientservices@ccohs.ca Fax: (905) 572-2206 Phone: (905) 572-2981
Mail: 135 Hunter Street East, Hamilton Ontario L8N 1M5

LIST BIOLOGICAL LABORATORIES, INC.
540 DIVISION STREET ▪ CAMPBELL ▪ CALIFORNIA 95008-6906 ▪ USA
408-866-6363 ▪ 800-726-3213 ▪ FAX 408-866-6364 ▪ EMAIL info@listlabs.com
WEBSITE www.listlabs.com

COLLOIDAL GOLD CONJUGATE OF CHOLERA TOXIN B SUBUNIT

Cholera toxin B subunit (choleragenoid), the nontoxic component of cholera toxin, binds to GM1 gangliosides on neuronal cell surfaces.[1,2] As a consequence of this phenomenon, cholera toxin B subunit undergoes internalization followed by retrograde axonal transport. Unlabelled, this neuronal cell marker can be visualized using antibodies and classical immunocytochemical techniques.[3] The availability of horseradish peroxidase and fluorescein conjugates of the B subunit has provided additional options for visualization of this molecule. Irrespective of which detection system is employed, this tracer has become an important reagent for use in connectivity studies in the PNS and CNS.[4,5,6]

As a further extension of this product line, List Biological Laboratories, Inc. has introduced colloidal gold conjugated to cholera toxin B subunit. This product is suitable for use in both electron and light microscopic studies. Absorption of B subunit onto negatively charged colloidal gold particles results in the formation of a stable conjugate which is insensitive to a variety of fixation conditions.[7]

Because of the noncovalent nature of the reaction product, maximal retention of the binding activity of B subunit to gangliosides is possible.[8] Retrogradely transported B subunit-colloidal gold conjugate has been demonstrated in medullary neurons, in the dorsal motor nucleus of the vagus and the nucleus ambiguus of the rat.[7]

Cholera toxin B subunit-colloidal gold conjugate (BGOLD) is available in a 7 nm particle size. The conjugate is assessed for its ability to bind GM1 gangliosides or specific antisera in modified hemagglutination and immunodiffusion assays, respectively. The gold conjugate is packaged on the basis of optical density at 520 nm. The BGOLD conjugate is provided in 0.01M sodium phosphate buffer, pH 7.5, containing 0.05% polyethylene glycol. This product is lyophilized and stoppered under vacuum.

The above product is intended for research purposes only and is not for human use. For further information, please contact List Biological Laboratories, Inc.

References

1. Holmgren, J. (1981) Nature 292, 413-417.
2. Brady, R.O. and Fishman, P.H. (1979) Adv. Enzymol. 50, 303-329.
3. Luppi, P.-H., Sakai, K., Salvert, D., Fort, P. and Jouvet, M. (1987) Brain Res. 402, 339-345.
4. Robertson, B. and Grant, G (1985) Neuroscience 14, 895-905.
5. Kuwayma, Y., Terenghi, G., Polak, J.M., Trojanowski, J.Q. and Stone, R.A. (1987) Brain Research 405, 220-226.
6. Fort, P., Sakai, K., Luppi, P.H. Salvert, D. and Jouvet, M. (1989) J. Comp. Neurol. 283, 285-305.
7. Llewellyn-Smith, I.J., Minson, J.B., Wright, A.P. and Hodgson, A.J. (1990) J. Comp. Neurol. 294, 179-191.
8. Horisberger, M. (1983) Trends Biochem. Sci. 8, 395-397.

Ordering Information

Product Number	Description	Size
108	Cholera Toxin B Subunit-Colloidal Gold Conjugate, 7 nm	50.0 µg

LIST BIOLOGICAL LABORATORIES, INC.
540 DIVISION STREET ▪ CAMPBELL ▪ CALIFORNIA 95008-6906 ▪ USA
408-866-6363 ▪ 800-726-3213 ▪ FAX 408-866-6364 ▪ EMAIL info@listlabs.com
WEBSITE www.listlabs.com

Product #108

CERTIFICATE OF ANALYSIS
Cholera Toxin B Subunit-Colloidal Gold Conjugate (BGOLD), 7nm
Lot #10812A1

Contents:

Each vial contains approximately 50.0 µg of protein (or 350 µg of BGOLD) lyophilized from 0.5 ml of 0.01 M sodium phosphate, pH 7.5, and 0.05% polyethylene glycol. Upon reconstitution, this product may be sonicated to aid dispersion.

Preparation:

This product is prepared by conjugating the B subunit of cholera toxin to 7 nm colloidal gold particles by a modification of the method of Slot and Geuze.[1]

Assay Results:

When compared to a standard solution of B subunit, BGOLD exhibits ganglioside binding activity in a hemagglutination assay using coated sheep red blood cells.[2] In immunodiffusion studies, BGOLD shows comparable immunoprecipitation to cholera toxin B subunit standard when reacted against a specific antiserum to B subunit.

Packaging/Reconstitution/Storage:

This product is provided as a lyophilized powder, sealed under vacuum. For microinjection, reconstitute with a small volume of sterile purified water and suspend uniformly. Store at 4°C prior to and following reconstitution.

Handling:

Good laboratory technique should be employed in the safe handling of this product. This requires observing the following practices:

1. **Wear appropriate laboratory attire including a lab coat, gloves and safety glasses.**

2. **Do not mouth pipette, inhale, ingest or allow to come into contact with open wounds. Wash thoroughly any area of the body which comes into contact with the product.**

3. **Avoid accidental autoinoculation by exercising extreme care when handling in conjunction with any injection device.**

4. **This product is intended for research purposes by qualified personnel only. It is not intended for use in humans or as a diagnostic agent. List Biological Laboratories, Inc. is not liable for any damages resulting from the misuse or handling of this product.**

FOR RESEARCH PURPOSES ONLY. NOT FOR HUMAN USE.

(continued)

References:

1. Slot, J.W. and Geuze, H.J. (1985) *Eur. J. Cell Bio.* **38**, 87-93.

2. Tayot, J.-L. *et al.* (1981) *Eur. J. Biochem.* **113**, 249-258.

Approved:_____ Date:_____ Approved:_____ Date:_____