THE UNIVERSITY OF WESTERN ONTARIO
BIOLOGICAL AGENTS REGISTRY FORM
Approved Biohazards Subcommittee: October 14, 2010
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 (UWO) or in charge of a laboratory/facility where the use of Level 1, 2 or 3 biological 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 be updated at least every 3 years or when there are changes to the biological agents 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 Biohazards 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	Wing-Yiu Choy
DEPARTMENT	Biochemistry
ADDRESS	Medical Sciences Building Room 302
PHONE NUMBER	x83161
EMERGENCY PHONE NUMBER(S)	519-697-3888
EMAIL	jchoy4@uwo.ca

Location of experimental work to be carried out: Building(s) _____MSB_____ Room(s) 314, 314B

*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 15.0, Approvals).

FUNDING AGENCY/AGENCIES: CIHR
GRANT TITLE(S): Structural studies of intrinsically disordered proteins

List all personnel working under Principal Investigators supervision in this location:

Name	UWO E-mail Address	Date of Biosafety Training
Anne Brickenden	abricken@uwo.ca	09-May-2008
Elio Cino	ecino@uwo.ca	02-Oct-2008
Halema Khan	hk2010@uwo.ca	02-Oct-2008
Andrzej Maciejewski	amaciej@uwo.ca	24-May-2009
Sarah Skinner	sskinn@uwo.ca	21-Sept-2010
Jennifer Brock	jbrock26@uwo.ca	27-Sept-2010

Please explain the biological agents and/or biohazardous substances used and how they will be stored, used and disposed of. Projects without this description will not be reviewed.

Bacteria: *e.coli* for recombinant protein production.
Stored @ 4^0C, -20^0C, -80^0C.
Growth in incubators in M314, M314B.
Liquid waste and growth vessels treated with Wescodyne© bactericidal detergent before flushing to drain.
Solid waste treated by autoclaving before garbage disposal.

cPrP protein:
Stored @ 4^0C, -20^0C, in M314 and -80^0C in M365.
Liquid waste is Bleach treated before flushing to drain.
Solid waste and glassware is Bleach treated before flushing to drain or autoclaving and garbage disposal.

Please include a one page research summary or teaching protocol.

The focus of this project is on the structural characterization, and dynamic studies of IDPs. Due to their structural plasticity, and the ability to interact with multiple targets, IDPs are frequently found to be involved in signal transduction and transcription regulation. The goal of our research is to understand the molecular mechanisms by which IDPs interact with targets, and carry out their functions. Currently, we are investigating the structure-function relationships of several disease-associated IDPs. TC-1, and Chibby are two IDPs involved in the Wnt signaling pathway. NMR, and other biophysical techniques are used to dissect the molecular mechanism by which TC-1 interacts with Cby, and to establish the mechanism used by TC-1 and β-catenin for competitive binding to Cby. The result will provide insights into the regulation of cancer-associated genes in the Wnt/β-catenin signaling pathway.

Another IDP that we are investigating is ProTα. It is a small, acidic protein with multiple functions. It plays an essential role in cell proliferation, apoptosis, and is involved in transcriptional regulation of oxidative stress-protecting genes. Structural characterization of ProTα demonstrates that this protein is largely unstructured under physiological conditions but undergoes partial folding upon binding to zinc. We have proposed that this metal-binding property acts as an "entropic switch" for its interaction with the protein target Keap1 in the oxidative stress response. Extensive structural, and dynamic studies are carried out in our lab to elucidate the mode of binding between ProTα and Keap1, and the mechanism by which zinc mediates the interaction of these two proteins.

We are also interested in the macromolecular crowding effects on the stability and dynamics of proteins, with the focus particularly on IDPs. Effects of molecular crowding on protein folding, and stability are usually studied by conventional spectroscopic techniques such as circular dichroism, or fluorescence spectroscopy. Even though these methods can be used to detect global structural changes of proteins under different environments, detailed structural and dynamic information at atomic level cannot be obtained. By including multiple disordered proteins with unique structural characteristics in this study, more general effects of molecular crowding on protein disordered state ensembles can be derived. Crowding agents with different structural properties are used to extensively investigate the crowding effects on the conformational propensities and dynamics of these proteins.

1.0 Microorganisms

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

Do you use microorganisms that require a permit from the CFIA? O YES ✓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)* (Be specific)	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
e.coli	Yes ✓ No	Yes ✓ No	Yes ✓ No	4L	Novagen (Merck)	✓ 1 2 2+ 3
	Yes	Yes	Yes			1 2 2+ 3
						1 2 2+ 3
						1 2 2+ 3

E. coli BL21 (DE3), DH5-alpha, Rosetta

*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? 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:

Cell Type	Is this cell type used in your work?	Source of Primary Cell Culture Tissue	AUS Protocol Number
Human	Yes No		Not applicable
Rodent	Yes No		
Non-human primate	Yes No		
Other (specify)	Yes No		

2.3 Please indicate the type of established cells that will be grown in culture in:

Cell Type	Is this cell type used in your work?	Specific cell line(s)*	Containment Level of each cell line	Supplier / Source of cell line(s)
Human	Yes No			
Rodent	Yes No			
Non-human primate	Yes No			
Other (specify)	Yes 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 1 2 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 in the table below the Human Source Material to be used.

Human Source Material	**Source/Supplier /Company Name**	**Is Human Source Material Infected With An Infectious Agent? YES/UNKNOWN**	**Name of Infectious Agent (If applicable)**	**PHAC or CFIA Containment Level (Select one)**
Human Blood (whole) or other Body Fluid		Yes Unknown		O 1 O 2 2+ O 3
Human Blood (fraction) or other Body Fluid		Yes Unknown		O 1 O 2 2+ O 3
Human Organs or Tissues (unpreserved)		Yes Unknown		O 1 O 2 2+ O 3
Human Organs or Tissues (preserved)		Not Applicable		Not Applicable

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 modification(s) involving plasmids be done? ✓ YES, complete table below NO

Bacteria Used for Cloning *	Plasmid(s) **	Source of Plasmid	Gene Transfected	Describe the change that results from transformation or tranfection
See attachments				

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

E. coli BL21 (DE3), DH5-alpha, Rosetta

4.3 Will genetic modification(s) of bacteria and/or cells involving viral vectors be made?
YES, complete table below ✓ NO

Virus Used for Vector Construction	Vector(s) *	Source of Vector	Gene(s) Transduced	Describe the change that results from transduction

* Please attach a Material Safety Data Sheet or equivalent.

4.4 Will genetic sequences from the following be involved?

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

4.5 Will virus be replication defective? YES ✓ NO

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

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

5.0 Human Gene Therapy Trials

5.1 Will human clinical trials be conducted involving a biological agent? YES ✓ NO
(including but not limited to microorganisms, viruses, prions, parasites or pathogens of plant or animal origin)
If no, please proceed to Section 6.0

5.2 If YES, please specify which biological agent will be used: _____
Please attach a full description of the biological agent.

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

5.3 How will the biological agent 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, number: _____ NO PENDING

6.0 Animal Experiments

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

6.2 Name of animal species to be used_____

6.3 AUS protocol # _____

6.4 Will any of the agents listed in section 4.0 be used in live animals YES, specify: _____ NO

6.5 Will the agent(s) be shed by the animal: YES NO, please justify:

_____

_____

7.0 Use of Animal species with Zoonotic Hazards

7.1 Will any animals with zoonotic hazards or their organs, tissues, lavages or other body fluids including blood be used (see list below)? YES ✓ No If no, please proceed to section 8.0

7.2 Will live animals be used? YES No

7.3 If yes, please specify the animal(s) used:

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

7.4 If no live animals are used, please specify the source of the specimens:

_____

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(s)_____
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*? _____

8.5 How much of the toxin is stored*? _____

8.6 Will any biological toxins be used in live animals? YES, Please provide details:_____ NO

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

9.0 Insects

9.1 Do you use insects? YES ✓ 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 life stage of the insect? _____

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

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

_____
_____

9.7 Do you use insects that require a permit from the CFIA permit? YES NO
If YES, Please attach the CFIA permit & describe any CFIA permit conditions:

_____

_____

10.0 Plants

10.1 Do you use plants? 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? Grow and maintain a crop O "One-time" use

10.6 Do you do any modifications to the plant? YES 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? YES NO
If YES, Please attach the CFIA permit & describe any CFIA permit conditions:

_____

_____

11.0 Import Requirements

11.1 Will any of the above agents be imported? YES, please give country of origin_____ ✓ NO
If no, please proceed to Section 12.0

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

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

11.4 Has the import permit been sent to OHS? YES, please provide permit # _____ 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 biological agents in Sections 1.0 to 9.0 have been trained.

SIGNATURE _____

13.0 Containment Levels

13.1 For the work described in sections 1.0 to 9.0, please indicate the highest HC or CFIA Containment Level required. ✓ 1 2 2+ 3

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

✓ YES, date of most recent biosafety inspection: _____
NO, please certify
NOT REQUIRED for Level 1 containment

13.3 Please indicate permit number (not applicable for first time applicants): _____

14.0 Procedures to be Followed

14.1 Please describe additional risk reduction measures will be taken beyond containment level 1, 2, 2+ or 3 measures, that are unique to this agent.

⇨ *Bleach treatment of cPrP Protein and vessels is considered beyond the requirement.*

14.2 Please outline what will be done if there is an exposure to the biological agents listed, such as a needlestick injury or an accidental splash:

⇨ *Agent exposure would be treated by topical decontamination with bactericidal soap, followed by flushing with tap water. Bench surfaces used for bacterial work are protected by bench paper and are changed weekly. Small spills on other surfaces are dealt with immediately treating with Wescodyne© or 70% Isopropanol in water. Larger spills are dealt with a lab "Spill kit" containing gloves, spill pillows, autoclave bags and 175mL of Roccal disinfectant.*

14.3 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: Feb 23, 2011

15.0 Approvals

1) UWO Biohazards Subcommittee: SIGNATURE: _____
Date: _____

2) Safety Officer for the University of Western Ontario
SIGNATURE: _____
Date: _____

3) Safety Officer for Institution where experiments will take place (if not UWO):
SIGNATURE: _____
Date: _____

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

Special Conditions of Approval:

Conforms to 91/155/EC and ISO 11014-1

SAFETY DATA SHEET

Novagen®

Order Number

Customer Number

1. Identification of the substance/preparation and of the company/undertaking

Product name : BL21(DE3) Glycerol Stock

Catalog # : 69387

Supplier : Manufactured by EMD Biosciences, Inc.
441 Charmany Drive
Madison, WI 53719
(608)238-6110
(800)207-0144
FAX (608)238-1388

P.O. Box 12087
La Jolla, CA 92039-2087
(858)450-5558
(800)854-3417
FAX (858)453-3552

Synonym : Not available

Emergency telephone number : Call Chemtrec at (800)424-9300 (within U.S.A.) (703)527-3887 (outside U.S.A.)

2. Composition / information on ingredients

Substance/Preparation : Substance

Chemical name*	CAS No.	EC Number	Symbol	R-Phrases
BL21(DE3) Glycerol Stock		Not available.	-	-

3. Hazards identification

Physicochemical hazards : Not applicable.

Human health hazards : No specific hazard.

4. First-aid measures

First-Aid measures

Inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion : Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin Contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Eye Contact : Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Aggravating conditions : Repeated or prolonged exposure is not known to aggravate medical condition.

5. Fire-fighting measures

Flammability of the Product : May be combustible at high temperature.

Extinguishing Media

Suitable : SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special fire-fighting procedures : Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Protection of fire-fighters : Be sure to use an approved/certified respirator or equivalent.

6. Accidental release measures

Personal precautions : Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient, consult a specialist BEFORE handling this product.

Small Spill and Leak : Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill and Leak : Absorb with an inert material and put the spilled material in an appropriate waste disposal.

7. Handling and storage

Handling : Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe gas/fumes/ vapor/spray.

Storage : Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above -70°C (-94°F).

Packaging materials

Recommended use : Use original container.

8. Exposure controls/personal protection

Engineering measures : Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Hygiene measures : Wash hands after handling compounds and before eating, smoking, using lavatory, and at the end of day.

Ingredient Name	Occupational Exposure Limits
BL21(DE3) Glycerol Stock	Not available.

Personal protective equipment

Skin and body : Lab coat.

Eyes : Safety glasses.

Protective Clothing (Pictograms) :

9. Physical and chemical properties

Physical state : Liquid.

Color : Not available.

Molecular Weight : Not available.

Solubility : Not available.

Flash point : Not available.

Explosive properties : Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.

10. Stability and reactivity

Stability : The product is stable.

Conditions to avoid : Not available.

11. Toxicological information

RTECS # : Not available.

Local effects

Skin irritation : Not available.

Acute toxicity : LD50: Not available.
LC50: Not available.

Chronic toxicity : Repeated or prolonged exposure is not known to aggravate medical condition.

Other Toxic Effects on Humans : Not available.
No specific information is available in our database regarding the other toxic effects of this material for human
Not available.
To the best of our knowledge, the toxicological properties of this product have not been thoroughly investigate

Carcinogenic effects : Not available.

MSDS

Mutagenic effects	Not available
Reproduction toxicity	Not available
Teratogenic effects	Not available

12. Ecological information

Ecotoxicity	Not available
Toxicity of the Products of Biodegradation	Not available

13. Disposal considerations

Methods of Disposal, Waste Treatment, Contaminated packaging:	Waste must be disposed of in accordance with federal, state and local environmental control regulations

14. Transport information

International transport regulations

Land - Road/Railway

ADR/RID Class	Not controlled under ADR (Europe)

Sea

IMDG Class	Not controlled under IMDG

Air

IATA-DGR Class	Not controlled under IATA
Special provisions for Transport	Not applicable

15. Regulatory information

EU Regulations

Risk Phrases	This product is not classified according to the EU regulations
U.S. Federal Regulations	TSCA: No products were found SARA 302/304/311/312 extremely hazardous substances: No products were found. SARA 302/304 emergency planning and notification: No products were found. SARA 302/304/311/312 hazardous chemicals: No products were found. SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found SARA 313 toxic chemical notification and release reporting: No products were found Clean Water Act (CWA) 307: No products were found Clean Water Act (CWA) 311: No products were found Clean air act (CAA) 112 accidental release prevention: No products were found Clean air act (CAA) 112 regulated flammable substances: No products were found Clean air act (CAA) 112 regulated toxic substances: No products were found
WHMIS Classification	Not controlled under the HCS (United States)

State Regulations

WHMIS (Canada)	Not controlled under WHMIS (Canada)
	No products were found

16. Other information

Hazardous Material Information System (U.S.A.)

	0
	1
Reactivity	0
Personal Protection	A

National Fire Protection Association (U.S.A.)

Notice to Reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
*Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist. **This product is intended for research use only.**

Canadian Food Inspection Agency | Agence canadienne d'inspection des aliments

Office of Biohazard Containment and Safety
Science Branch, CFIA
59 Camelot Drive, Ottawa, Ontario K1A 0Y9
Tel: (613) 221-7068 Fax: (613) 228-6129
Email: ImportZoopath@inspection.gc.ca

Bureau du confinement des biorisques et sécurité
Direction générale des sciences, ACIA
59 promenade Camelot, Ottawa, Ontario K1A 0Y9
Tél: (613) 221-7068 Téléc: (613) 228-6129
Courriel: ImportZoopath@inspection.gc.ca

October 20th, 2009

Ms. Shamila Survery / Mr. Michael Decosimo
Cedarlane Laboratories Ltd
4410 Paletta Court
Burlington, Ontario L7L 5R2

By Facsimile: (289) 288-0020

SUBJECT: Importation of *Escherichia coli* strains

Dear Ms. Survery / Mr. Decosimo:

Our office received your query about the importation of *Escherichia coli* from the American Type Culture Collection (ATCC) located in Manassas, Virginia, United States. The following *Escherichia coli* strains are consider to be level 1 animal pathogens:

- 5K
- 58
- 58-161
- 679
- 1532
- AB284
- AB311
- AB1157
- AB1206
- AG1
- B
- BB4
- BD792
- BL21
- BL21 (DE3)
- BM25.8
- C
- C-1a
- C-3000
- C25
- C41 (DE3)
- C43 (DE3)
- C600
- Cavalli Hfr
- CIE85
- DH1
- DH10 GOLD
- DH10B
- DH5
- DH5-alpha
- DP50
- DY145
- DY380
- E11
- EJ183
- EL250
- EMG2
- EPI 300
- EZ10
- FDA Seattle 1946
- Fusion-Blue
- H1443
- HF4714
- HB101
- HS(PFAMP)R
- Hfr3000
- Hfr3000 X74
- HMS174
- J52
- J53
- JC3272
- JC7661
- JC9387
- JF1504
- JF1508
- JF1509
- JJ055
- JM83
- JM101
- JM109
- K12
- KC8
- KA802
- KAM32
- KAM33
- KAM43
- LE450
- LE451
- LE452
- MB408
- MBX1928
- MC1061
- MC4100 (MuLac)
- MG1655
- MM294
- MS101
- NC-7
- Nissle 1917
- One Shot STBL3
- OP50
- P678
- PA309
- PK-5
- PMC103
- PR13
- Rri
- RV308
- S17-1λ -PIR
- SCS1
- SMR10
- SOLR
- SuperchargeEZ10
- SURE
- TOP10
- TG1
- U5/41
- W208
- W945
- W1485
- W3104
- W3110
- WA704
- WP2
- X1854
- X2160T
- X2541
- X2547T
- XL1-BLUE
- XL1-BLUE-MRF
- XLOLR
- Y10
- Y1090 (1090)
- YN2980
- W3110
- WG1
- WG439
- WG443
- WG445

The Office of Biohazard Containment and Safety (BCS) of the Canadian Food Inspection Agency (CFIA) only issues import permits for microorganisms that are pathogenic to animals, or parts of microorganisms that are pathogenic to animals. As the products listed above are not considered pathogenic to animals, the Office of BCS does not have any regulatory requirements for their importation.

Please note that other legislation may apply. You may wish to contact the Public Health Agency of Canada's (PHAC) Office of Laboratory Security at (613) 957-1779.

Note: Microorganisms pathogenic to animals and veterinary biologics require an import permit from the CFIA.

Sincerely,

Cinthia Labrie
Head, Animal Pathogen Importation Program
Office of Biohazard Containment & Safety

Canada

Subject: Re: Biological Agents Registry Form (Choy)
From: James Choy <jchoy4@uwo.ca>
Date: Tue, 29 Mar 2011 15:18:48 -0400
To: Jennifer Stanley <jstanle2@uwo.ca>

Hi Jennifer,
Sorry that I missed your call. The E. coli strains that we use are BL21, DH5-alpha, and Rosetta (they are all E. coli).

Regards,

James Choy

-------- Original Message --------
Subject: Re: Containment Level Request
Date: Tue, 29 Mar 2011 16:10:51 -0400
From: Permit-Permis <permitpermis@phac-aspc.gc.ca>
To: Jennifer Stanley <jstanle2@uwo.ca>

Dear Jennifer Stanley,

Our classification for E. coli Rosetta (strain B) is Risk Group 1.

However, is you intent to introduce a gene coding for a toxin, the recombinant bacteria would be consider as Risk Group 2.

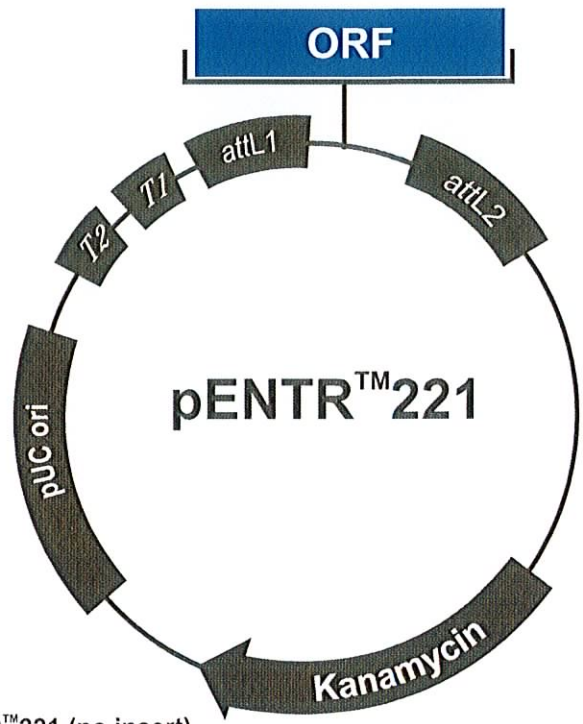
Best

Normand Labbé

Pathogen Regulation Directorate / Direction de la réglementation des agents pathogènes
Public Health Agency of Canada/ Agence de santé publique du Canada
100 ch. Colonnade Rd. AL: 6201A Ottawa, Ontario, Canada, K1A 0K9
Tel: (613) 957-1779/ Fax: (613)941-0596
http://www.phac-aspc.gc.ca/lab-bio/index-eng.php

PLASMID NAME	SOURCE OF PLASMID	GENE	ON TRANSFORMATION
pcDNA3 Apaf-1	G Nunez, Ann Arbor USA	Human Apaf-1	Ampicillin Resistance
pDEST 14	J. Forman-Kay, Toronto		Ampicillin Resistance
pDEST 15 Neh2	Choy Lab Construction	Human Neh2	Ampicillin Resistance
pDEST 15 TC-1	Choy Lab Construction	Human TC-1	Ampicillin Resistance
pDEST 17	J. Forman-Kay, Toronto		Ampicillin Resistance
pDEST 17 mKelch	Choy Lab Construction	Mouse Kelch	Ampicillin Resistance
pDEST 17 Neh2	Choy Lab Construction	Human Neh2	Ampicillin Resistance
pDEST 17 Nrf2	Choy Lab Construction	Human Nrf2	Ampicillin Resistance
pDEST 17 P8	Choy Lab Construction	Human P8	Ampicillin Resistance
pDEST 17 TPR1	Choy Lab Construction	Mouse TPR1 domain of STI-1	Ampicillin Resistance
pDEST 17 TPR2a	Choy Lab Construction	Mouse TPR2a domain of STI-1	Ampicillin Resistance
pDEST 17 TPR2a delta	Choy Lab Construction	Mouse TPR2a delta	Ampicillin Resistance
pDEST 17 14.3.3	Choy Lab Construction	Human 14.3.3	Ampicillin Resistance
pDEST 17 b-Catenin	Choy Lab Construction	Human b-Catenin	Ampicillin Resistance
pDEST 17 Chibby	Choy Lab Construction	Human Chibby	Ampicillin Resistance
pDEST 24	J. Forman-Kay, Toronto		Ampicillin Resistance
pDEST 42	J. Forman-Kay, Toronto		Ampicillin Resistance
pDEST His MBP	Addgene		Ampicillin Resistance
pDEST His MBP N-term Chibby	Choy Lab Construction	Human Chibby	Ampicillin Resistance
pDEST His MBP TC-1	Choy Lab Construction	Human TC-1	Ampicillin Resistance
pDONR 201	J. Forman-Kay, Toronto		Kanamycin Resistance
pENTR	J. Forman-Kay, Toronto		Kanamycin Resistance
pENTR 221 14.3.3	GeneCopoeia	Human 14.3.3	Kanamycin Resistance
pENTR 221 b-Catenin	Invitrogen	Human b-Catenin	Kanamycin Resistance
pENTR 221 Nrf2	Invitrogen	Human NRF2	Kanamycin Resistance
pET 11a	Novagen		Ampicillin Resistance
pET 11a TC-1		Human TC-1	Ampicillin Resistance
pET 15b hKelch	C. Eberle, MO USA	Human Kelch	Ampicillin Resistance
pET 15b TC-1	M. Sunde, U of Sydney, Austrailia	Human TC-1	Ampicillin Resistance
pET 17b ING	Y. Bai, NIH USA	Human ING	Ampicillin Resistance
pGEX 4T	B. Sanwal Lab, Canada		Ampicillin Resistance
pGEX 4T AANAT	J. Boutin, France	Sheep N-acetyltransferase	Ampicillin Resistance
pGEX 4T1 b-Cat 3	Choy Lab Construction		Ampicillin Resistance
pGEX 4T-1 TEV	S. Li Lab, Canada	TEV Protease	Ampicillin Resistance
pGEX 4T1 TEV Chibby	Choy Lab Construction	Human Chibby	Ampicillin Resistance
pHP12a Prothymosin Alpha	A. Vartapetian, Moscow Russia	Human Prothymosin Alpha	Ampicillin Resistance
pReceiver B03y P8	GeneCopoeia	Human P8	Ampicillin Resistance
pRK793 His TEV	G. Shaw Lab, Canada	TEV Protease	Ampicillin Resistance
pRSETA mPrP 23-231	K. Wuthrich, Switzerland	Mouse cPrP	Ampicillin Resistance
pRSETA mPrP 90-232	K. Wuthrich, Switzerland	Mouse cPrP	Ampicillin Resistance
pT7-7 alpha-Synuclein	M Volles, Harvard USA	Human alpha-Synuclein	Ampicillin Resistance
pTrc His STI-1	Prado Lab, Canada	Mouse STI-1	Ampicillin Resistance
pTrc His STI-1 delta	Prado Lab, Canada	Mouse STI-1 delta	Ampicillin Resistance
pYX-Asc mKelch	ATCC, USA	Mouse Kelch	Ampicillin Resistance

Section 4



Comments for pENTR™221 (no insert)
2546 nucleotides

*rrn*B T2 transcription termination sequence: bases 268-295
*rrn*B T1 transcription termination sequence: bases 427-470
M13 forward (-20) priming site: bases 537-552
*att*L1: bases 569-667 (complementary strand)
ORF insertion site: bases 668-669
*att*L2: bases 671-770
M13 reverse priming site: bases 811-827
Kanamycin resistance gene: bases 940-1749
pUC origin: bases 1870-2543

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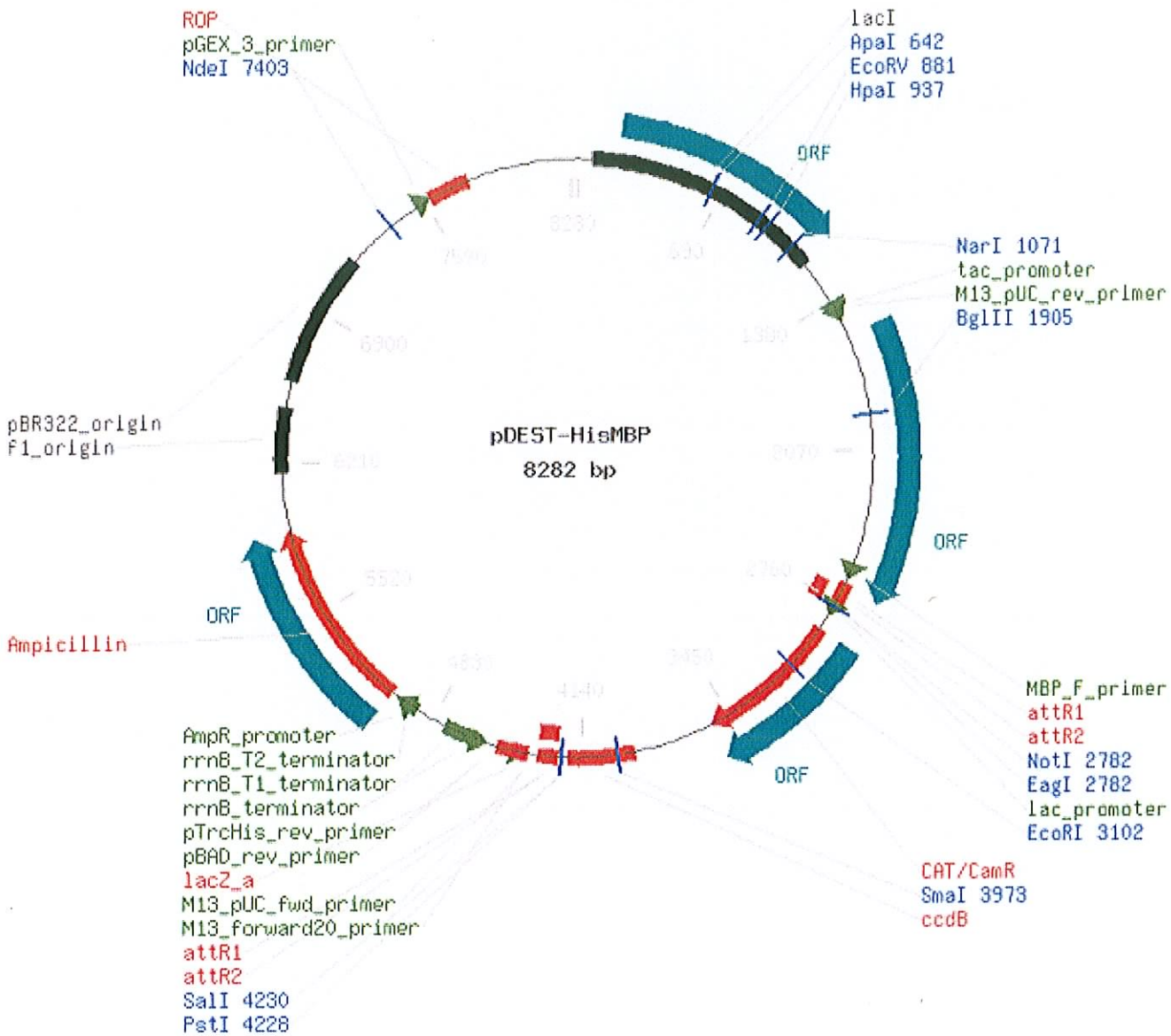

pDEST-HisMBP
8282 bp
ROP
pGEX_3_primer
NdeI 7403
lacI
ApaI 642
EcoRV 881
HpaI 937
ORF
NarI 1071
tac_promoter
M13_pUC_rev_primer
BglII 1905
ORF
MBP_F_primer
attR1
attR2
NotI 2782
EagI 2782
lac_promoter
EcoRI 3102
CAT/CamR
SmaI 3973
ccdB
ORF
AmpR_promoter
rrnB_T2_terminator
rrnB_T1_terminator
rrnB_terminator
pTrcHis_rev_primer
pBAD_rev_primer
lacZ_a
M13_pUC_fwd_primer
M13_forward20_primer
attR1
attR2
SalI 4230
PstI 4228
ORF
Ampicillin
pBR322_origin
f1_origin

pET-11a-d Vectors

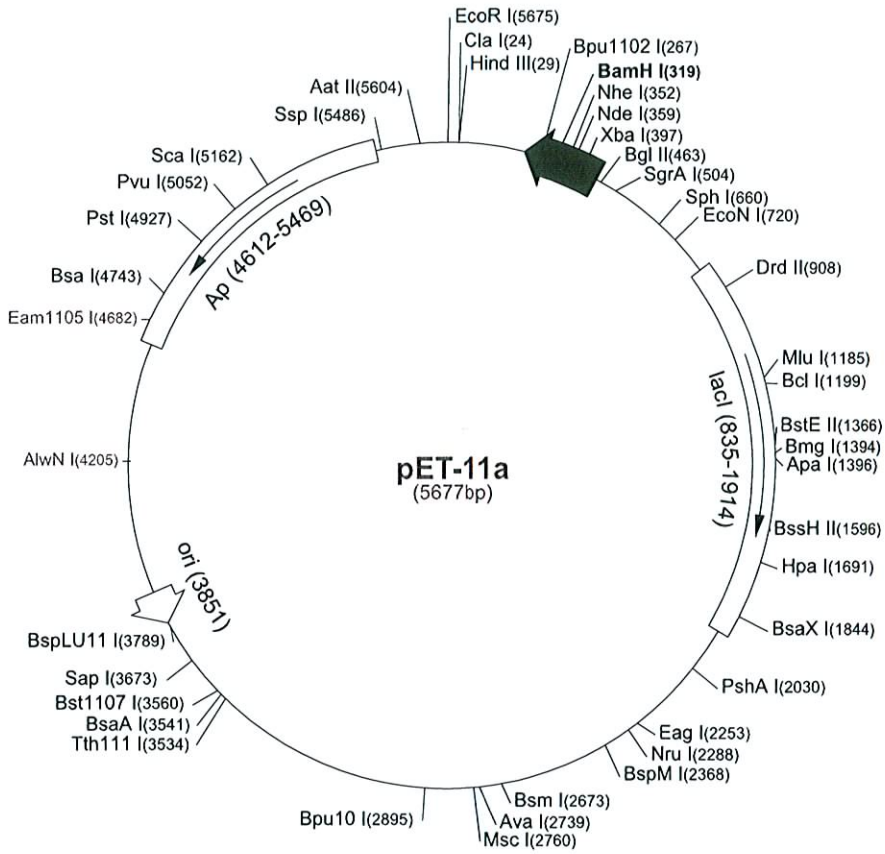
TB042 12/98

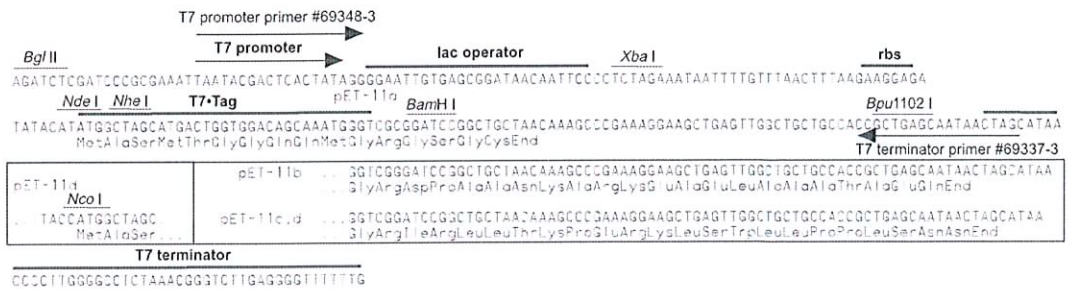
	Cat. No.
pET-11a DNA	69436-3
pET-11b DNA	69437-3
pET-11c DNA	69438-3
pET-11d DNA	69439-3

The pET-11a-d vectors carry an N-terminal T7•Tag® sequence and *Bam*H I cloning site. These vectors are the precursors to many pET family vectors; the pET-21a-d(+) series corresponds to pET-11a-d but incorporates several additional features. Unique sites are shown on the circle map. Note that the sequence is numbered by the pBR322 convention, so the T7 expression region is reversed on the circular map. The cloning/expression region of the coding strand transcribed by T7 RNA polymerase is shown below.

pET-11a sequence landmarks	
T7 promoter	432-448
T7 transcription start	431
T7•Tag coding sequence	328-360
T7 terminator	213-259
lacI coding sequence	835-1914
pBR322 origin	3851
bla coding sequence	4612-5469

The maps for pET-11b, pET-11c and pET-11d are the same as pET-11a (shown) with the following exceptions: pET-11b is a 5676bp plasmid; subtract 1bp from each site beyond *Bam*H I at 319. pET-11c is a 5675bp plasmid; subtract 2bp from each site beyond *Bam*H I at 319. pET-11d is a 5674bp plasmid; the *Bam*H I site is in the same reading frame as in pET-11c. An *Nco* I site is substituted for the *Nde* I site with a net 1bp deletion at position 359 of pET-11c. As a result, *Nco* I cuts pET-11d at 355. For the rest of the sites, subtract 3bp from each site beyond position 360 in pET-11a. *Nde* I does not cut pET-11d.





pET-11a-d cloning/expression region