THE UNIVERSITY OF WESTERN ONTARIO
BIOHAZARDOUS AGENTS REGISTRY FORM
Approved Biohazards Subcommittee: September 25, 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 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	Lars Rehmann
SIGNATURE	
DEPARTMENT	Chemical and Biochemical Engineering
ADDRESS	Thompson Engineering Building 459
PHONE NUMBER	ext. 89008
EMERGENCY PHONE NUMBER(S)	519 434 7514
EMAIL	rehmann@eng.uwo.ca

Location of experimental work to be carried out: Building(s) TEB Room(s) 313

*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
GRANT TITLE(S): Advanced materials for the biochemical production of second generation biofuels and chemicals

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. A GRANT SUMMARY PAGE MAYBE ADEQUATE IF IT PROVIDES SUFFICIENT DETAIL ABOUT EACH BIOHAZARD USED.

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

Vivek Nagendra
Karen Schwab
Kerstin Schwanitz
Jun Zheng

*** 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 biological agents? ⊗ YES O NO
(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)*	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
Clostridium acetobutylicum	O Yes ⊗ No	O Yes ⊗ No	O Yes ⊗ No	3	DSMZ	⊗ 1 O 2 O 3
Clostridium beijerinkii 6422	O Yes ⊗ No	O Yes ⊗ No	O Yes ⊗ No	3	DSMZ	⊗ 1 O 2 O 3
Clostridium beijerinkii 6423	O Yes ⊗ No	O Yes ⊗ No	O Yes ⊗ No	3	DSMZ	⊗ 1 O 2 O 3
Clostridium saccharobutylicum	O Yes ⊗ No	O Yes ⊗ No	O Yes ⊗ No	3	DSMZ	⊗ 1 O 2 O 3

*Please attach a Material Safety Data Sheet or equivalent from the supplier. Not available for these strains.

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:

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:

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 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 Unknown		O 1 O 2 O 3
Human Blood (fraction) or other Body Fluid		O Yes O No O Unknown		O 1 O 2 O 3
Human Organs or Tissues (unpreserved)		O Yes O No O Unknown		O 1 O 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? 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 made? O YES, complete table below O NO

Virus Used for Vector Construction	Vector(s) *	Source of Vector	Gene(s) Transduced	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 involving a biological agent? O 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? O YES O 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? O YES, number: _____ O NO O PENDING

6.0 Animal Experiments

6.1 Will live animals be used? O 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 O YES, specify: _____ O NO

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

_____

_____

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

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

8.0 Biological Toxins

8.1 Will toxins of biological origin be used? O 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? O YES, Please provide detais:_____ O NO

*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 ☒ 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? O 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 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
If NO, please forward the permit to he Biosafety Officer when available.

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 12.0 ⊗ 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 _____

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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 ○ 2 ○ 3

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

○ YES, permit # if on-campus_____
○ 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: 13 April 2010

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

The microorganisms currently in use are all anaerobe (sensitive to oxygen) and are incubated air-tight bottles and transferred in an enclosed anaerobic chamber which is sterilized via UV-light. Bioreactors are not aerated but kept under positive pressure with Nitrogen, no risks of aerosol formation.

14.3 Please outline what will be done if there is an exposure to the biohazards listed, such as a needlestick injury:

Exposure to skill will be removed under running water followed by disinfection. Needle-stick injuries will be treated with standard first aid measure followed by hospital visit with information on the microbial strain that was used.

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***

Advanced materials for the biochemical production of second generation biofuels and chemicals

NSERC – Discovery grant 2010-2015. PI: Lars Rehmann

The proposed research will utilize advanced functional materials to overcome current bottlenecks in the conversion of biomass into fuels and chemicals. The targeted bottlenecks are the conversion of raw materials into fermentable sugars and the removal of toxic products from the fermenter. The initial process of interest will be the production of biobutanol, a second-generation biofuel, via *Clostridia* fermentation. The feedstock will be waste streams from industrial processes and lignocellulosic biomass. This stands in contrast to food crops such as corn currently used in bioethanol production, eliminating some of the ethical dilemmas of biofuel production and also reducing the environmental footprint. Lignocellulosic biomass (plant biomass such as lumber infected with mountain pine beetle) will initially be enzymatically converted into fermentable sugars followed by microbial fermentation into biobutanol or other products. The enzymatic step will be carried out in the presence of ionic liquids, potentially eliminating the need for additional pre-treatment. Ionic liquids (salts with melting points below 100 °C) have been shown to partly dissolve cellulose and lignin. Task-specific ionic liquids will be designed to dissolve the biomass while allowing for enzymatic activity, thereby providing a new route to produce fuels and chemicals from a variety of renewable resources.

The effect of ionic liquid mediated biomass pre-treatment processes on the fermentability via *Clostridia* will be investigated in high-throughput micro-scale experiments using a multi-mode plate-reader.

Additional so-called 'smart' polymers will be used to recover the fermentation product (initially biobutanol) from the fermenter (3L vessel). These polymers will be analogous to polymers used in targeted drug delivery. The polymers will be designed to have high affinity for the fermentation product. This affinity however can be 'switched-off' when exposing the polymers to different conditions (e.g. change in pH, temperature, medium conditions, etc.). This effect will used to effectively harvest the reaction product from the fermenter, thereby increasing the productivity of the microorgnisms due to the removal of the toxic product, followed by simple and cost effective recovery of the product from the polymer in a recovery vessel with conditions triggering the product release.

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DSM 13864 - *Clostridium saccharobutylicum* Keis et al. 2001

-see also: Bacterial Nomenclature Up-to-Date

Name:	***Clostridium saccharobutylicum*** Keis et al. 2001
DSM No.:	13864
Other collection no.	ATCC BAA-117
Information:	<- D. T. Jones, New Zealand <- D. T. Jones and D. R. Woods, South Africa <- Natl. Chem. Products Ltd., South Africa; NCP 262 (*Clostridium acetobutylicum*) <- Commercial Solvent Corp., USA; BAS/B3/CSC <- Commercial Solvent Corp., USA (*Clostridium saccharo-butyl-acetonicum-liquefaciens*). Soy beans; USA. **Type strain**. Taxonomy/description (8292). Commercial production of acetone and butanol (by biotransformation of fermentable carbohydrates). (Medium 104b, 35°C, anaerobic)
Isolated from:	soy beans
Medium:	104b, 35°C, anaerobic
Literature:	8292
Supplied as:	(vacuum) dried culture (actively growing cultures available on request at an extra charge)
Risk group:	1 (classification according to German TRBA)
Price:	EURO 50 (non-profit making institutions), EURO 65 (other institutions): Normal price.

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DSM 1731 - *Clostridium acetobutylicum* McCoy et al. 1926 emend. Keis et al. 2001

-see also: Bacterial Nomenclature Up-to-Date

Name:	***Clostridium acetobutylicum*** McCoy et al. 1926 emend. Keis et al. 2001
DSM No.:	1731
Other collection no.	ATCC 4259, NCIB 619
Information:	<- NCIB <- NCTC (*C. acetonigenum*) <- A.C. Thaysen (*Bacillus butyricus*). DNA homology (6850). Produces acetone and n-butanol (Brit. Pat. 4845; U.S. Pat. 1,315,585) (1092). (McCoy and McClung, strain T; L.S. McClung, 2289). (Medium 411, 37°C, anaerobic)
Medium:	411, 37°C, anaerobic
Literature:	1092, 3352, 3353, 6850
Supplied as:	(vacuum) dried culture (actively growing cultures available on request at an extra charge)
Risk group:	1 (classification according to German TRBA)
Price:	EURO 50 (non-profit making institutions), EURO 65 (other institutions): Normal price.

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DSM 6422 - *Clostridium beijerinckii* Donker 1926 emend. Keis et al. 2001

-see also: Bacterial Nomenclature Up-to-Date

Name:	***Clostridium beijerinckii*** Donker 1926 emend. Keis et al. 2001
DSM No.:	6422
Other collection no.	NRRL B-592
Information:	<- NRRL <- E. McCoy, A-39 (*Clostridium butylicum*). DNA homology (6850). Produces acetone and n-butanol (4186). (Medium 54 or 104b or 411, 35°C, anaerobic)
Medium:	54, 35°C, anaerobic or medium 104b, 35°C, anaerobic or medium 411, 35°C, anaerobic
Literature:	4186, 6850
Supplied as:	(vacuum) dried culture (actively growing cultures available on request at an extra charge)
Risk group:	1 (classification according to German TRBA)
Price:	EURO 50 (non-profit making institutions), EURO 65 (other institutions): Normal price.

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DSM 6423 - *Clostridium beijerinckii* Donker 1926 emend. Keis et al. 2001

-see also: Bacterial Nomenclature Up-to-Date

Name:	***Clostridium beijerinckii*** Donker 1926 emend. Keis et al. 2001
DSM No.:	6423
Other collection no.	NRRL B-593
Information:	<- NRRL <- E. McCoy, A-21 ("*Clostridium butylicum*"). DNA homology (6850). Produces 1,3-propanediol from glycerol (4188), butanol and isopropanol (4186). (Medium 54 or 104b or 411, 35°C, anaerobic)
Medium:	54, 35°C, anaerobic or medium 104b, 35°C, anaerobic or medium 411, 35°C, anaerobic
Literature:	4186, 4188, 6850
Supplied as:	(vacuum) dried culture (actively growing cultures available on request at an extra charge)
Risk group:	1 (classification according to German TRBA)
Price:	EURO 50 (non-profit making institutions), EURO 65 (other institutions): Normal price.

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Each microorganism of the DSMZ collection is classified according to German legislation (Biostoff-Verordnung). If a strain is allocated to **Risk Group 2** (equivalent terms are Hazard Group or Biological Safety Level), this information is given in the DSMZ catalogue of strains/homepage under the respective species information, on the delivery note and on the culture vessel.
The distribution of cultures allocated to Risk Group 2* are subject to restrictions according to "Infektionsschutzgesetz" (Act dealing with the prevention and control of infectious diseases in man, IfSG from 20th July 2000, BGBl. I, p. 1045). These restrictions apply only to orders placed from within Germany. A copy of the "Erlaubnis zum Arbeiten mit Krankheitserregern" according to §44 IfSG resp. §19 "Bundesseuchengesetz" (BGBl. I 1979, p. 2262 and BGBl. I 1990, p. 2002) must be provided. Outside Germany the respective national regulations have to be observed. Risk group 2 organisms are shipped to OECD und EU member countries, to EEA - EFTA countries, and to the sovereign European microstates.

*see TRBA (Technische Regeln für Biologische Arbeitsstoffe): 'Einstufung von Bakterien in Risikogruppen' (TRBA 466) and 'Einstufung von Pilzen in Risikogruppen' (TRBA 460); Council Directive 2000/54/EEC on the protection of workers from risks related to exposure to biological agents at work (OJ L262/21 of 17.10.2000).

Public Health Agency of Canada | Agence de la santé publique du Canada

Canada

Clostridium spp. - Material Safety Data Sheets (MSDS)

MATERIAL SAFETY DATA SHEET - INFECTIOUS SUBSTANCES

SECTION I - INFECTIOUS AGENT

NAME: *Clostridium spp. (C. histolyticum, C. butyricum, C. septicum, C. sordellii, C. novyi, C. ramosum, C.bifermentans, C. paraperfringes, C. cadaveris, C. clostridiiforme, C. innocuum, C. limosum, C. paraputrificum, C. sporogenes, C. subterminale, C. tertium)*

SYNONYM OR CROSS REFERENCE: N/A

CHARACTERISTICS: Gram positive rod usually with subterminal spores; anaerobic

SECTION II - HEALTH HAZARD

PATHOGENICITY: Involved with gas gangrene of wounds; *C. septicum* - bacteremia and infections associated with malignancy; *C. butyricum* - necrotizing enterocolitis in infants; opportunistic pathogen

EPIDEMIOLOGY: Worldwide, especially in areas where contact with contaminated soil is likely

HOST RANGE: Humans, animals

INFECTIOUS DOSE: Not known

MODE OF TRANSMISSION: Introduced through a wound contaminated with soil

INCUBATION PERIOD: Usually 1-3 days

COMMUNICABILITY: Not directly transmitted from person to person

SECTION III - DISSEMINATION

RESERVOIR: Intestine of animals including humans; soil; animal feces

ZOONOSIS: None

VECTORS: None

SECTION IV - VIABILITY

DRUG SUSCEPTIBILITY: Susceptible to clindamycin, chloramphenicol, erythromycin, tetracycline

SUSCEPTIBILITY TO DISINFECTANTS: Sporeformers are fairly resistant; moderate susceptibility to 1% sodium hypochlorite; susceptible to glutaraldehyde (prolonged contact time)

PHYSICAL INACTIVATION: Sporeformers are fairly resistant to heat (spores destroyed by moist heat 121°C for at least 15 min)

SURVIVAL OUTSIDE HOST: Spores survive for long periods outside host

SECTION V - MEDICAL

SECTION VI - LABORATORY HAZARDS

SECTION VII - RECOMMENDED PRECAUTIONS

SECTION VIII - HANDLING INFORMATION

SECTION IX - MISCELLANEOUS INFORMATION

Date Modified: 1997-10-11

-------- Original Message --------
Subject: Re: Fwd: Clostridium spp. - Containment Level Request
Date: Thu, 15 Apr 2010 10:43:12 -0400
From: Permit-Permis <permitpermis@phac-aspc.gc.ca>
To: Jennifer Stanley <jstanle2@uwo.ca>

Hi Jennifer,

The four species of Clostridium listed are all Risk Group 1 in Canada.

The DSMZ classification does not always match the Canadian Risk Group classification, so you can not rely of the DSMZ classification for Canadian
importation requirements.

Regards,

Denis Laframboise
Regulatory Technologist/ technologiste en réglementation
Pathogen Regulation Directorate (formerly Office of Laboratory Security) /
Direction de la réglementation des agents pathogènes (anciennement le Bureau de la sécurité des laboratoires)
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

Subject: Clostridium spp. - Containment Level Request
From: Jennifer Stanley <jstanle2@uwo.ca>
Date: Wed, 14 Apr 2010 11:44:49 -0400
To: Geneviève Lacroix <genevieve.lacroix@phac-aspc.gc.ca>

Hello there

There is a researcher who is proposing work with ***Clostridium spp.***

The stains have been classified by the German "TRBA" (this appears to be their biosafety guidelines) as Risk Group 1 - see the four websites below.

http://www.dsmz.de/microorganisms/html/strains/strain.dsm006422.html

http://www.dsmz.de/microorganisms/html/strains/strain.dsm006423.html

http://www.dsmz.de/microorganisms/html/strains/strain.dsm013864.html

http://www.dsmz.de/microorganisms/html/strains/strain.dsm001731.html

I know that Health Canada normally classifies ***Clostridium spp.*** **as Level 2. Is there any equivalency with the German guidelines here or do we need to use Level 2 for these strains of bacteria?**

Regards,
Jennifer