

**THE UNIVERSITY OF WESTERN ONTARIO  
BIOLOGICAL AGENTS REGISTRY FORM**  
Approved Biohazards Subcommittee: July 9, 2010  
Biosafety Website: [www.uwo.ca/humanresources/biosafety/](http://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, 1<sup>st</sup> 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](mailto: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/](http://www.uwo.ca/humanresources/biosafety/)

PRINCIPAL INVESTIGATOR	<u>Dr. Gregor Reid</u>
DEPARTMENT	<u>Microbiology and Immunology</u>
ADDRESS	<u>Lawson Health Research Institute</u> <u>St. Joseph's Hospital</u> <u>268 Grosvenor St.</u> <u>London, ON N6A 4V2</u>
PHONE NUMBER	<u>(519) 646-6000 x65256</u>
EMERGENCY PHONE NUMBER(S)	<u>N/A</u>
EMAIL	<u><a href="mailto:gregor@uwo.ca">gregor@uwo.ca</a></u>

Location of experimental work to be carried out: Building(s) Lawson Health Research Institute Room(s) F3-127

\*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: Kimberly Clark, Dairy Farmers of Canada, NSERC, Danone

GRANT TITLE(S):

Reid, G., and J. McCormick. 2009-10. Kimberly Clark, \$280,000, studies on biomaterials.

Reid, G. 2009-11. Dairy Farmers of Canada and NSERC, Genomics of lactobacilli for dairy applications, \$85,000.

Reid, G. 2010-11. NSERC Discovery, \$27,000, Deciphering Lactobacillus functionality.

Reid, G. 2010-11 Danone, \$120,000, Detoxication study.

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

<u>Name</u>	<u>UWO E-mail Address</u>	<u>Date of Biosafety Training</u>
Marc Monachese	<u>mmonach@uwo.ca</u>	<u>Dec 8 2009</u>
Roderick MacPhee	<u>rmacphee@uwo.ca</u>	<u>Dec 8 2009</u>
Jordan Bisanz	<u>jbisanz@uwo.ca</u>	<u>Oct 15 2009</u>
Wayne Miller	<u>wmiller5@uwo.ca</u>	<u>Jan 19, 2010</u>
Amy McMillan	<u>amcmil2@uwo.ca</u>	<u>Sep. 15, 2010</u>
Shannon Mifflin	<u>N/A (shannon.mifflin@sjhc.london.on.ca)</u>	<u>Aug. 6, 2010</u>

Camilla Urbaniak  
Rebecca Cheung  
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curbania@uwo.ca  
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jreid10@uoguelph.ca

Feb. 9, 2011  
May 3, 2011  
May 31, 2011

**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.**

In regards to biological agents, our lab primarily works with nonpathogenic species of bacteria from the genera *Lactobacillus* and *Bifidobacterium*. We also work with the urogenital pathogenic bacteria *Atopobium vaginae* and *Gardnerella vaginalis*. Additionally, we work with the VK2 (vaginal epithelial cells) and CaCo-2 (intestinal epithelial cells) cell lines. Stocks of the bacteria are stored in 1.5 ml cryotubes in boxes in a -80° C freezer. Stocks of the cell lines are stored in cryotubes in boxes in a deep freezer containing liquid nitrogen. When working with these bacteria and cells, proper safety precautions will be used, including the use of gloves, lab coats, and aseptic technique. Agar plates and other solid waste that has come in contact with biological agents will be disposed of in the biological waste bins, which are subsequently autoclaved and disposed of as per Biomedical Waste Management guidelines by St. Joseph's Healthcare London. Liquid waste will be bleached, and then disposed of based on the type of solution present (growth media will be dumped down the drain, liquids containing hazardous chemicals will be labeled and sent for chemical waste pickup, where they are disposed of according to Waste Management guidelines by St. Joseph's Healthcare London).

Please include a one page research summary or teaching protocol.

Our research is aimed at using beneficial microbes to improve health. Primarily, we focus on the microbiota of the vagina and how it changes between health and bacterial vaginosis. This involves genomic studies of the organisms using bioinformatics and pyrosequencing. The mechanistic studies involve human epithelial cells, cell lines, blood cells, and microscopy. Most of the organisms we use are food-grade non-pathogens, and of the pathogens, none are highly infectious.

## 1.0 Microorganisms

1.1 Does your work involve the use of biological agents?  YES  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?  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
<i>Lactobacillus</i> spp.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	0.1 L	Human	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 2+ <input type="checkbox"/> 3
** <i>Bifidobacterium</i> spp.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	0.1 L	Human	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 2+ <input type="checkbox"/> 3
** <i>Atopobium vaginae</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	0.1 L	Human	<input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 2+ <input type="checkbox"/> 3
** <i>Gardnerella vaginalis</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	0.1 L	Human	<input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 2+ <input type="checkbox"/> 3
** <i>Enterococcus faecalis</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	0.1 L	Human	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 2+ <input type="checkbox"/> 3
** <i>Enterococcus faecium</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	0.1 L	Human	<input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 2+ <input type="checkbox"/> 3
** <i>Prevotella melaninogenica</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	0.1 L	Human	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 2+ <input type="checkbox"/> 3

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

\*\*MSDS NOT available

See E-mail

## 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Not applicable
Rodent	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Non-human primate	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Other (specify)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	VK2 (vaginal epithelial), CaCo-2 (epithelial)	ATCC
Rodent	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Non-human primate	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Other (specify)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

\*Please attach a Material Safety Data Sheet or equivalent from the supplier. (For more information, see [www.atcc.org](http://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/NO	Name of Infectious Agent (If applicable)	PHAC or CFIA Containment Level (Select one)
Human Blood (whole) or other Body Fluid	Patient	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Unknown	N/A	<input type="radio"/> 1 <input checked="" type="radio"/> 2 <input type="checkbox"/> 2+ <input type="radio"/> 3
Human Blood (fraction) or other Body Fluid		<input type="checkbox"/> Yes <input type="checkbox"/> Unknown		<input type="radio"/> 1 <input type="radio"/> 2 <input type="checkbox"/> 2+ <input type="radio"/> 3
Human Organs or Tissues (unpreserved)		<input type="checkbox"/> Yes <input type="checkbox"/> Unknown		<input type="radio"/> 1 <input type="radio"/> 2 <input type="checkbox"/> 2+ <input type="radio"/> 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
<i>E. coli</i> DH5alpha <i>Lactobacillus</i> spp.	pTRK785	T. Klaenhammer	LINAB10564	<i>Chromosomal copy of gene LINAB10564 will be disrupted. The phenotype that will result is unknown.</i>
<i>E. coli</i> DH5alpha <i>Lactobacillus</i> spp.	pLi50 pG+Host5 pBlueScript II	J. McCormick	Peg 1499 Peg 1498-1505 Peg 918-924	<i>Chromosomal copies of genes listed will be deleted and/or disrupted. The phenotype that will result is unknown.</i>

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

\*\* Please attach a plasmid map.

4.3 Will genetic modification(s) 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 \_\_\_\_\_  YES  NO
- ◆ HTLV 1 or 2 or genes from any Level 1 or Level 2 pathogens  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 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



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

10.5 What is your intention?                      Grow and maintain a crop                       "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, 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: 22 June 2011

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

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

In the event of an exposure, first aid measures will taken as outlined in SJHC Emergency Medical Procedures [See Appendix] and the bulletin "First Aid Process for Exposure to Blood-Borne Pathogen (BBP)" [See Appendix: First Aid Process For Exposure To Blood-Borne Pathogen (Bbp)], in accordance with corporate policy of St. Joseph's Health Care London.

**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: June 28, 2011

Approval Number: \_\_\_\_\_ Expiry Date (3 years from Approval): \_\_\_\_\_

Special Conditions of Approval:

----- Original Message -----

**Subject:**Re: Biological Agents Registry Form - Reid

**Date:**Mon, 06 Jun 2011 13:12:26 -0400

**From:**Shannon Mifflin <Shannon.Mifflin@sjhc.london.on.ca>

**To:**jstanle2@uwo.ca, wmillers5@uwo.ca

**CC:**gregor@uwo.ca

Hi Jennifer,

The vectors used are solely put into bacteria. These transformed vectors are then put into other bacteria - they are never put into animal cell lines - therefore no oncogenes are involved.

We will elaborate on the first aid measures.

Shannon

Shannon Mifflin  
Research Technician  
Screening Lab for Immune Disorders  
Canadian Research & Development Centre for Probiotics  
Lawson Health Research Institute  
Room F2-119 & F3-127  
268 Grosvenor Street  
London, Ontario  
N6A 4V2  
Tel: 519-646-6000 x61574 & x65120  
Fax: 519-646-6110

**Subject:** Re: Biohazardous Agents Registry Form  
**From:** Wayne Miller <wmiller5@uwo.ca>  
**Date:** Thu, 10 Feb 2011 16:01:43 -0500  
**To:** Jennifer Stanley <jstanle2@uwo.ca>  
**CC:** Shannon Mifflin <Shannon.Mifflin@sjhc.london.on.ca>, Gregor Reid <gregor@uwo.ca>

Hi Jennifer,

Yes, please add it:

Name: *E. coli* DH5alpha  
Known pathogen: NO  
Known animal pathogen: NO  
Known zoonotic agent: NO  
Maximum quantity: 0.1 L  
Source/Supplier: Invitrogen  
PHAC or CFIA Containment level: 1

E-mail

Thanks,

Wayne

---

Wayne L. Miller, Ph.D.  
Associate Scientist,  
Canadian Research & Development Centre for Probiotics, and  
Lawson Health Research Institute;  
Assistant Professor,  
Department of Microbiology & Immunology,  
University of Western Ontario;

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[www.waynemiller.ca](http://www.waynemiller.ca)

---

On 10 February 2011 15:56, Jennifer Stanley <[jstanle2@uwo.ca](mailto:jstanle2@uwo.ca)> wrote:

Hi there

Thanks for this. I was able to download it.

I noticed that *E. coli* dH5 alpha was not listed in Table 1.2. I can add it for you but I will need to know about how much you culture and the source (Invitrogen?).

Regards

Jennifer

## Appendices

List of Additional Species: *Lactobacillus*, *Bifidobacterium* and *E. coli* strains

Plasmids Used for Cloning

MSDS *Lactobacillus* species

MSDS DH5alpha Competent Cells

MSDS Aflatoxin M<sub>1</sub>

MSDS Aflatoxin B<sub>1</sub>

MSDS Animal Cell Cultures

MSDS Ochratoxin A

ATCC Reference Information:

Atopobium vaginae

Enterococcus faecalis

Enterococcus faecium

Gardnerella vaginalis

First Aid Process For Exposure To Blood-Borne Pathogen (Bbp) (Extract from Corporate Policy of St. Joseph's Healthcare London)

SJHC Emergency Medical Procedures

**List of Additional Species**

***Lactobacillus* Species**

- L. acidophilus*
- L. amylovorus*
- L. brevis*
- L. bulgaricus*
- L. casei*
- L. crispatus*
- L. delbrueckii* subsp. *delbrueckii*
- L. delbrueckii* subsp. *bulgaricus*
- L. delbrueckii* subsp. *lactis*
- L. gasseri*
- L. helveticus*
- L. iners*
- L. fermentum*
- L. jensenii*
- L. johnsonii*
- L. plantarum*
- L. paracasei* subsp. *paracasei*
- L. rhamnosus*
- L. reuteri*

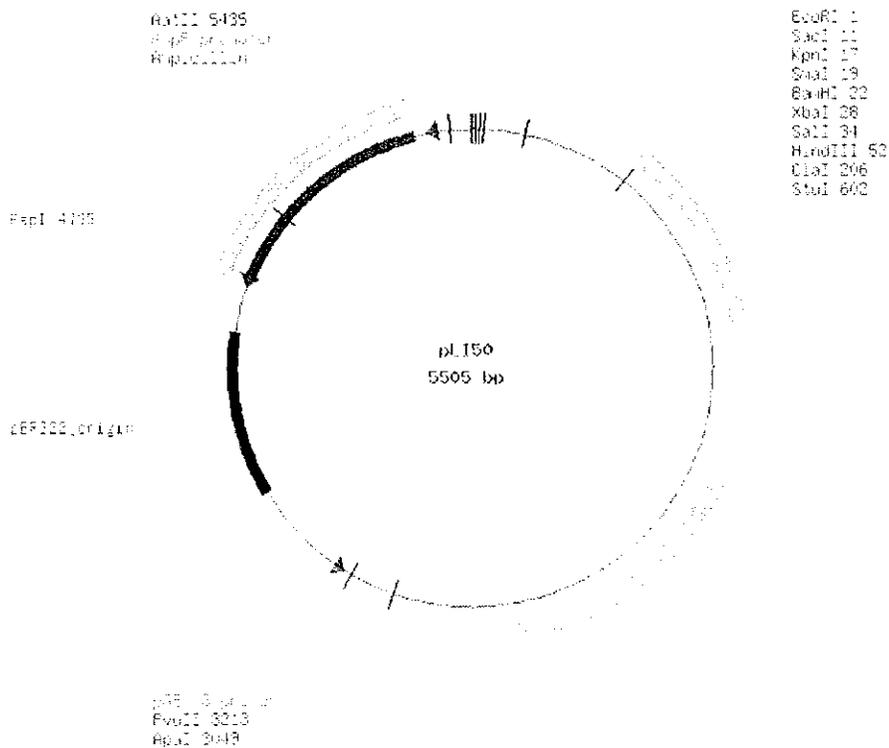
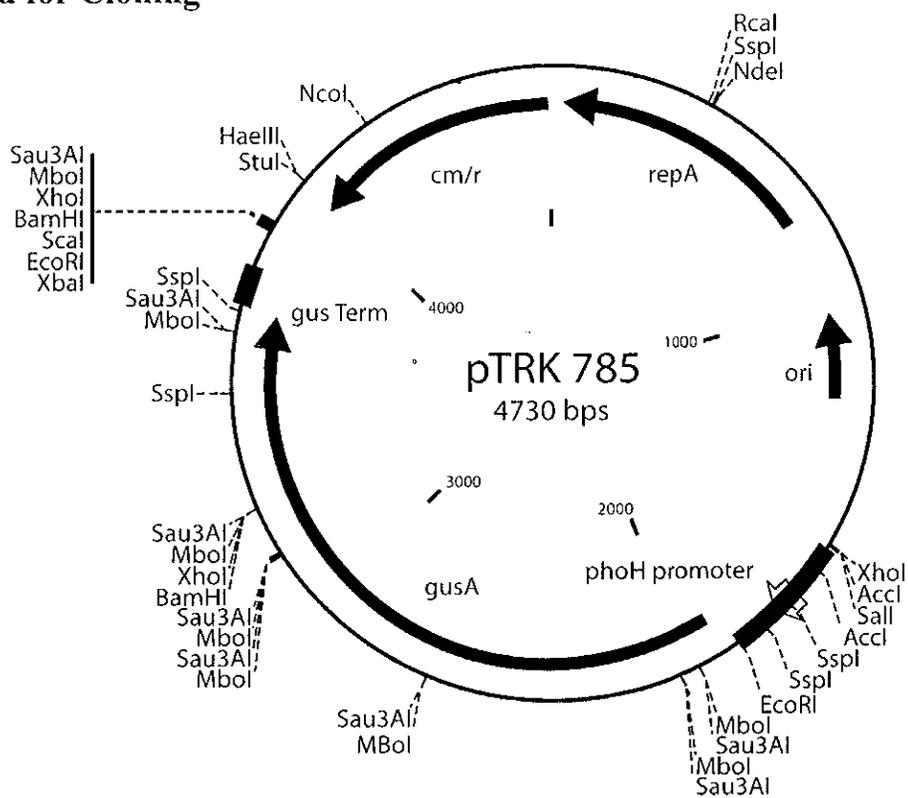
***Bifidobacterium* Species**

- B. adolescentis*
- B. animalis*
- B. longum*

***Escherichia* Species**

- E. coli* DH5 $\alpha$

# Plasmids Used for Cloning







## Lactobacillus spp. - Material Safety Data Sheets (MSDS)

### MATERIAL SAFETY DATA SHEET - INFECTIOUS SUBSTANCES

#### SECTION I - INFECTIOUS AGENT

**NAME:** *Lactobacillus* spp.

**SYNONYM OR CROSS REFERENCE:** *L. acidophilus*, *L. bifidus*, *L. bulgaricus*, *L. casei*, *L. viridescens*, *L. helveiticus*, *L. plantarum*

**CHARACTERISTICS:** Gram-positive large rods, non-spore forming, anaerobic or microaerophilic, occur singly or in pairs

#### SECTION II - HEALTH HAZARD

**PATHOGENICITY:** Very rarely pathogenic; part of normal flora in man and animals (mouth, vagina, and intestinal tract); in the oral cavity, associated with dental caries but no known etiologic role; have been reported to cause endocarditis, neonatal meningitis and bacteremia

**EPIDEMIOLOGY:** Worldwide

**HOST RANGE:** Normal flora of humans and animals

**INFECTIOUS DOSE:** Not known

**MODE OF TRANSMISSION:** Not known

**INCUBATION PERIOD:** Not known

**COMMUNICABILITY:** Not transmitted from person-to-person

MSDS'

#### SECTION III - DISSEMINATION

**RESERVOIR:** Widespread in nature, humans and animals

**ZOONOSIS:** None

**VECTORS:** None

#### SECTION IV - VIABILITY

**DRUG SUSCEPTIBILITY:** Susceptible to antibiotics

**DRUG RESISTANCE:** vancomycin-resistant strains have been isolated

**SUSCEPTIBILITY TO DISINFECTANTS:** Susceptible to many disinfectants - 1% sodium hypochlorite and 70% ethanol, glutaraldehyde, formaldehyde, iodines

**PHYSICAL INACTIVATION:** Susceptible to moist heat (121° C for at least 15 min) and dry heat (160-170° C for at least 1 hour)

**SURVIVAL OUTSIDE HOST:** Feces - 2 days; cheese - 105 years;

## SECTION V - MEDICAL

**SURVEILLANCE:** None

**FIRST AID/TREATMENT:** Wash area in contact with warm water and soap (omit soap for mucous membrane exposure); drug therapy (penicillin and aminoglycosides)

**IMMUNIZATION:** None

**PROPHYLAXIS:** None

## SECTION VI - LABORATORY HAZARDS

**LABORATORY-ACQUIRED INFECTIONS:** No reported cases of laboratory infections with *Lactobacillus* spp.

**SOURCES/SPECIMENS:** Dairy products and other food, feces, specimens from the mouth, vaginal swabs

**PRIMARY HAZARDS:** Hazard of infection from this organism is low, however, it is prudent to avoid accidental inoculation and ingestion

**SPECIAL HAZARDS:** None

## SECTION VII - RECOMMENDED PRECAUTIONS

**CONTAINMENT REQUIREMENTS:** No special design features beyond those suitable for a well designed and functional laboratory with good microbiology practices; this level of containment does not allow for any additional risk that may present for those persons with pre-existing disease, compromised immunity or who are pregnant

**PROTECTIVE CLOTHING:** Laboratory coat; gloves when contact with infected material is unavoidable

**OTHER PRECAUTIONS:** None

## SECTION VIII - HANDLING INFORMATION

**SPILLS:** Allow aerosols to settle; wearing protective clothing, gently cover spill with absorbent paper towel and apply 1% sodium hypochlorite, starting at perimeter and working towards the centre; allow sufficient contact time (30 min) before clean up

**DISPOSAL:** Decontaminate before disposal; steam sterilization, chemical disinfection

**STORAGE:** In sealed containers that are appropriately labelled

## SECTION IX - MISCELLANEOUS INFORMATION

**Date prepared:** March, 2001

**Prepared by:** Office of Laboratory Security, PHAC

Although the information, opinions and recommendations contained in this Material Safety Data Sheet are compiled from sources believed to be reliable, we accept no responsibility for the accuracy, sufficiency, or reliability or for any loss or injury resulting from the use of the information. Newly discovered hazards are frequent and this information may not be completely up to date.

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Health Canada, 2001

Date Modified: 2001-04-23

MATERIAL SAFETY DATA SHEET

LIBRARY EFFICIENCY DH5ALPHA COMPETENT CELLS  
 INVITROGEN CORPORATION  
 MSDS ID: 18263

Page 1 of 8  
 Revised 9/30/03  
 Replaces 9/05/03  
 Printed 9/30/03

**1. PRODUCT AND COMPANY INFORMATION**

INVITROGEN CORPORATION  
 1600 FARADAY AVE.  
 CARLSBAD, CA 92008  
 760/603-7200

GIBCO PRODUCTS  
 INVITROGEN CORPORATION  
 3175 STALEY ROAD P. O. BOX 68  
 GRAND ISLAND, NY 14072  
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EMERGENCY NUMBER (SPILLS, EXPOSURES): 301/431-8585 (24 HOUR)  
 800/451-8346 (24 HOUR)  
 800/955-6288

NON-EMERGENCY INFORMATION:

Product Name: LIBRARY EFFICIENCY DH5ALPHA COMPETENT CELLS  
 Stock Number: 18263012

NOTE: If this product is a kit or is supplied with more than one material, please refer to the MSDS for each component for hazard information.

Product Use:  
 These products are for laboratory research use only and are not intended for human or animal diagnostics, therapeutic, or other clinical uses.

Synonyms:  
 Not available.

**2. COMPOSITION, INFORMATION ON INGREDIENTS**

The following list shows components of this product classified as hazardous based on physical properties and health effects:

Component	CAS No.	Percent
DIMETHYL SULFOXIDE	67-68-5	3 - 7

MATERIAL SAFETY DATA SHEET Page 2 of 8  
 LIBRARY EFFICIENCY DHSALPHA COMPETENT CELLS Revised 9/30/03  
 INVITROGEN CORPORATION Replaces 9/05/03  
 MSDS ID: 19263 Printed 9/30/03

**3. HAZARDS IDENTIFICATION**

\*\*\*\*\* EMERGENCY OVERVIEW \*\*\*\*\*  
 Warning!  
 Irritant.  
 Harmful if absorbed.

Potential Health Effects:  
 Eye:  
 Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.

Skin:  
 Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.  
 Upon prolonged or repeated exposure, harmful if absorbed through the skin.  
 May cause minor systemic damage.

Inhalation:  
 Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.  
 No toxicity expected from inhalation.

Ingestion:  
 Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.

Chronic:  
 No data on cancer.

**4. FIRST AID MEASURES**

Eye:  
 Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.

Skin:  
 Wash with soap and water. Get medical attention if irritation develops or persists.

Inhalation:  
 Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.

Ingestion:  
 Do not induce vomiting and seek medical attention immediately. Drink two

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LIBRARY EFFICIENCY DHSALPHA COMPETENT CELLS  
 INVITROGEN CORPORATION  
**MSDS ID: 18263**

**4. FIRST AID MEASURES (CONT.)**

glasses of water or milk to dilute. Provide medical care provider with this MSDS.

Note To Physician:  
 Treat symptomatically.

**5. FIRE FIGHTING MEASURES**

Flashpoint Deg C: Not available.  
 Upper Flammable Limit %: Not available.  
 Lower Flammable Limit %: Not available.  
 Autoignition Temperature Deg C: Not available.

**Extinguishing Media:**  
 Use alcohol resistant foam, carbon dioxide, dry chemical, or water spray when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the fire. Do not direct a water stream directly into the hot burning liquid. DMSO undergoes a violent exothermic reaction on mixing with copper wool and trichloroacetic acid. On mixing with potassium permanganate it will flash instantaneously. It reacts violently with: acid halides, cyanuric chloride, silicon tetrachloride, phosphorus trichloride and trioxide, thionyl chloride, magnesium perchlorate, silver fluoride, methyl bromide, iodine pentafluoride, nitrogen peroxide, diborane, sodium hydride, perchloric and periodic acids. When heated above its boiling point, DMSO degrades giving off formaldehyde, methyl mercaptan, and sulfur dioxide.

**Firefighting Techniques/Equipment:**  
 Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products.

**Hazardous Combustion Products:**  
 Carbon dioxide Carbon monoxide Sulfur containing gases

**6. ACCIDENTAL RELEASE MEASURES**

Accidental releases may be subject to special reporting requirements and other regulatory mandates. Refer to Section 8 for personal protection equipment recommendations.

**6. ACCIDENTAL RELEASE MEASURES (CONT.)**

Spill Cleanup:  
 Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section VIII of this MSDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill. Ventilate the contaminated area.  
 Absorb spill. Common absorbent materials should be effective. Deposit in appropriate containers for removal and disposal.

**7. HANDLING AND STORAGE**

Storage of some materials is regulated by federal, state, and/or local laws.

Storage Pressure:  
 Ambient

Handling Procedures:

Harmful or irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area.  
 Keep closed or covered when not in use.

Storage Procedures:

Store in a cool dry ventilated location. Isolate from incompatible materials and conditions. Keep container(s) closed.  
 Suitable for most general chemical storage areas.

**8. EXPOSURE CONTROLS, PERSONAL PROTECTION**

Exposure Limits:

Component	OSHA PEL (ppm)	ACGIH TWA (ppm)
DIMETHYL SULFOXIDE	Not established.	Not established.

Engineering Controls:

Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

Personal Protective Equipment:

Eye:  
 Safety glasses should be the minimum eye protection.  
 Wear chemically resistant safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash

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### 8. EXPOSURE CONTROLS, PERSONAL PROTECTION (CONT.)

goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Do not wear contact lenses. Have an eye wash station available.

**Skin:**  
Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work. Gloves should be used as minimum hand protection.

**Respiratory:**  
Use supplied-air respiratory equipment as required.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance/physical state:** Liquid solution / suspension  
**Odor:** No odor.

Not established.  
**Specific Gravity/Density:** Not established.  
**Octanol/water Partition Coeff:** Not established.  
**Volatiles:** Not established.  
**Evaporation Rate:** Not established.  
**Viscosity:** Not established.

### 10. STABILITY AND REACTIVITY

**Stability:**  
Stable under normal conditions.

**Conditions to Avoid:**  
Strong oxidizing agents. Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition. Strong alkalis. DMSO undergoes a violent exothermic reaction on mixing with copper wool and trichloroacetic acid. On mixing with potassium permanganate it will flash instantaneously. It reacts violently with: acid halides, cyanuric chloride, silicon tetrachloride, phosphorus trichloride and trioxide, thionyl chloride, magnesium perchlorate, silver fluoride, methyl bromide, iodine pentafluoride, nitrogen peroxide, diborane, sodium hydride, perchloric and periodic acids. When heated above its boiling point, DMSO

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**10. STABILITY AND REACTIVITY (CONT.)**

---

degrades giving off formaldehyde, methyl mercaptan, and sulfur dioxide.

Hazardous Decomposition Products:  
Carbon monoxide. Carbon dioxide. Sulfur containing gases.

Hazardous Polymerization:  
Hazardous polymerization will not occur.

---

**11. TOXICOLOGICAL INFORMATION**

---

Acute Toxicity:

Dermal/Skin:  
DIMETHYL SULFOXIDE: 40 GM/KG

Inhalation/Respiratory:  
Not determined.

Oral/Ingestion:  
DIMETHYL SULFOXIDE: 14,500 MG/KG

Target Organs: Blood. Eyes. Skin.

Carcinogenicity:

NTP:  
Not tested.

IARC:  
Not listed.

OSHA:  
Not regulated.

Other Toxicological Information

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**12. Ecological Information**

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Ecotoxicological Information: No ecological information available.

Environmental Fate (Degradation, Transformation, and Persistence):  
Bioconcentration is not expected to occur.  
Biodegrades slowly.

MATERIAL SAFETY DATA SHEET Page 7 of 8  
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**13. DISPOSAL CONSIDERATIONS**

Regulatory Information:  
 Not applicable.

Disposal Method:  
 Clean up and dispose of waste in accordance with all federal, state, and local environmental regulations.  
 Dispose of by incineration following Federal, State, Local, or Provincial regulations.

**14. TRANSPORT INFORMATION**

Proper Shipping Name: Not Determined.  
 Subsidiary Hazards:

**15. REGULATORY INFORMATION**

UNITED STATES:

TSCA:  
 This product is solely for research and development purposes only and may not be used, processed or distributed for a commercial purpose. It may only be handled by technically qualified individuals.

Prop 65 Listed Chemicals: PROP 65 PERCENT  
 No Prop 65 Chemicals.

NO 313 Chemicals

CANADA:

DSL/NDL:  
 Not determined.

COMPONENT WHMIS Classification  
 DIMETHYL SULFOXIDE D2B

EUROPEAN UNION:

PRODUCT RISK PHRASES: None assigned.  
 PRODUCT SAFETY PHRASES: Not applicable.  
 PRODUCT CLASSIFICATION: Not applicable.

MATERIAL SAFETY DATA SHEET

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15. REGULATORY INFORMATION (CONT.)

Not classified

Component  
DIMETHYL SULFOXIDE

EINECS  
Number  
200-664-3

16. OTHER INFORMATION

HMIS Rating 0-4:  
FIRE: Not determined.  
HEALTH: Not determined.  
REACTIVITY: Not determined.

Abbreviations

- N/A - Data is not applicable or not available
- SARA - Superfund and Reauthorization Act
- HMIS - Hazard Material Information System
- WHMIS - Workplace Hazard Materials Information System
- NTP - National Toxicology Program
- OSHA - Occupational Health and Safety Administration
- IARC - International Agency for Research on Cancer
- PROP 65 - California Safe Drinking Water and Toxic Enforcement Act of 1986
- EINECS - European Inventory of Existing Commercial Chemical Substances

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## Bacteria

ATCC® Number: **BAA-55™** [Order this Item](#) Price: **\$255.00**

Organism: *Atopobium vaginae* Rodriguez Jovita et al.  
Designations: CCUG 38953 [CIP 106431, DSM 15829]  
Isolation: vaginal flora from a healthy woman, Goteborg, Sweden, 1998 [[49736](#)]  
Depositor: CCUG  
History: ATCC <--CCUG<--I. Mattsby  
Biosafety Level: 1  
Shipped: freeze-dried  
Growth Conditions: **ATCC medium1377:** Haemophilus ducreyi medium  
**Temperature:** 37.0°C  
**Atmosphere:** Anaerobic  
In addition to the [MTA](#) mentioned above, other [ATCC and/or regulatory permits](#) may be required for the transfer of this ATCC material. Anyone purchasing ATCC material is ultimately responsible for obtaining the permits. Please [click here](#) for information regarding the specific requirements for shipment to your location.  
Permits/Forms:

Cross References: Nucleotide (GenBank) : [ACGK01000000](#) Atopobium vaginae DSM 15829, whole genome shotgun sequencing project  
Nucleotide (GenBank) : [Y17195](#) 16S rRNA sequence

Type Strain: yes(type strain)

Comments: This strain has been sequenced as a reference genome for the NIH Human Microbiome Project.

References: 49736: Rodriguez Jovita M, et al. Characterization of a novel Atopobium isolate from the human vagina: description of Atopobium vaginae sp. nov.. Int. J. Syst. Bacteriol. 49: 1573-1576, 1999. PubMed: [10555338](#)

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## Bacteria

ATCC® Number: **49145™** [Order this Item](#) Price: **\$40.00**

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### Preceptrol® Culture

Organism: *Gardnerella vaginalis* (Gardner and Dukes) Greenwood and Pickett

Designations: AmMS 117

Isolation: clinical isolate

Depositor: Baxter Healthcare Corporation

Biosafety Level: 2

Shipped: freeze-dried

Growth Conditions: ATCC medium 814: GC medium  
Alternate medium 1685: NYC III medium

**Temperature:** 37.0°C

**Atmosphere:** 5%CO<sub>2</sub>

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Applications: quality control strain  
quality control strain for MicroScan [Reg TM] products

Related Products: purified DNA: ATCC [49145D-5](#)

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## Bacteria

ATCC® Number: **23241™**  Price: **\$255.00**

Organism: *Enterococcus faecalis* (Andrewes and Horder) Schleifer and Kilpper-Balz deposited as *Streptococcus faecalis* Andrewes and Horder

Designations: G-K [B-14]

Isolation: urine of patient with pyelonephritis

Depositor: RG Wittler

History: ATCC <<--RG Wittler<<--L. Guze

Biosafety Level: 2

Shipped: freeze-dried

Growth Conditions: ATCC medium260: Trypticase soy agar with defibrinated sheep blood  
**Temperature:** 37.0°C

Permits/Forms: In addition to the MTA mentioned above, other ATCC and/or regulatory permits may be required for the transfer of this ATCC material. Anyone purchasing ATCC material is ultimately responsible for obtaining the permits. Please click here for information regarding the specific requirements for shipment to your location.

Comments: Parent strain of *Streptococcus faecalis* L-Phase variant G-K L (ATCC 23242)

9649: Montgomerie JZ, et al. The effects of antibiotics on the protoplast and bacterial forms of *Streptococcus faecalis*. J. Lab. Clin. Med. 68: 543-551, 1966. PubMed: 4958832

References: 10118: Guze LB, et al. Pyelonephritis. I. Observations on the course of chronic non-obstructed enterococcal infection in the kidney of the rat. Yale J. Biol. Med. 33: 372-385, 1961. PubMed: 13710079  
10663: Cohen RL, et al. Modified biochemical tests for characterization of L-phase variants of bacteria. Appl. Microbiol. 16: 1655-1662, 1968. PubMed: 4302280

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## Bacteria

ATCC® Number: **19434™** [Order this Item](#) Price: **\$40.00**

### [Preceptrol® Culture](#)

Organism: *Enterococcus faecium* (Orla-Jensen) Schleifer and Kilpper-Balz deposited as *Streptococcus* sp.  
Designations: NCTC 7171 [DSM 20477, JCM 8727, NCDO 942]  
Depositor: NCTC  
History: ATCC <<--NCTC<<--A. Grumbach  
[Biosafety Level:](#) 2  
Shipped: freeze-dried  
Growth Conditions: [ATCC medium44](#): Brain heart infusion agar or brain heart infusion  
**Temperature:** 37.0°C

Permits/Forms: In addition to the [MTA](#) mentioned above, other [ATCC and/or regulatory permits](#) may be required for the transfer of this ATCC material. Anyone purchasing ATCC material is ultimately responsible for obtaining the permits. Please [click here](#) for information regarding the specific requirements for shipment to your location.

Antigenic Properties: serotype 11

Nucleotide (GenBank) : [AF029771](#) Enterococcus faecium clone pEMH19 insertion sequence IS1485 right junction.  
Nucleotide (GenBank) : [AX109875](#) Sequence 608 from Patent WO0123604.  
Nucleotide (GenBank) : [AJ387913](#) Enterococcus faecium partial sodA gene for superoxide dismutase, strain CIP 103014 T (ATCC [19434](#)).  
Nucleotide (GenBank) : [X87180](#) E.faecium 16S-23S rRNA spacer DNA, strain ATCC 19434.  
Nucleotide (GenBank) : [AH005622](#) Enterococcus faecium.  
Cross References: Nucleotide (GenBank) : [AX109559](#) Sequence 292 from Patent WO0123604.  
Nucleotide (GenBank) : [AX109888](#) Sequence 621 from Patent WO0123604.  
Nucleotide (GenBank) : [AF029770](#) Enterococcus faecium clone pEMH19 insertion sequence IS1485 left junction.  
Nucleotide (GenBank) : [AX111137](#) Sequence 1870 from Patent WO0123604.  
Nucleotide (GenBank) : [X87181](#) E.faecium 23S-5S rRNA spacer DNA, strain ATCC 19434.  
Nucleotide (GenBank) : [L78127](#) Enterococcus faecium genomic DNA fragment.

Type Strain: yes(type strain)  
Comments: Grumbach serotype 11  
Applications: testing antimicrobial handwashing formulations [[32196](#)]

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6905: Schleifer KH, Kilpper-Balz R. Transfer of *Streptococcus faecalis* and *Streptococcus faecium* to the genus *Enterococcus* nom. rev. as *Enterococcus faecalis* comb. nov. and *Enterococcus faecium* comb. nov.. *Int. J. Syst. Bacteriol.* 34: 31-34, 1984.

References:

32196: Fendler EJ, et al. Antimicrobial cleansing composition containing chlorhexidine, an amphoteric surfactant, and an alkyl polyglucoside. US Patent 5,719,113 dated Feb 17 1998  
36887: Skerman VB, et al. Approved lists of bacterial names. *Int. J. Syst. Bacteriol.* 30: 225-420, 1980.

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## Risk Group Classification for Infectious Agents

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### Bacteria Search Results

Genus: <i>Bifidobacterium</i>	Species: <i>dentium</i>	Risk Group Level	Notes
Australia/New Zealand 2002:			
Belgium 2004:			
Switzerland 2003:		2	
United Kingdom 2004:			
Germany 2001:		2	
NIH 2002			
European Community 2000:			
Singapore 2004:			Singapore Schedule:
Japan:			
Human Pathogen: Yes			Select Agent CDC: No
Animal Pathogen: No			Select Agent USDA: No
Plant Pathogen: No			
MSDS:			

American Biological Safety Association, 1200 Allanson Road, Mundelein, IL 60060-3808  
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Genus: <i>Bifidobacterium</i>	Species: <i>dentium</i>	Risk Group Level	Notes
Australia/New Zealand 2002:			
Belgium 2004:			
Switzerland 2003:		2	
United Kingdom 2004:			
Germany 2001:		2	
NIH 2002			
European Community 2000:			
Singapore 2004:			Singapore Schedule:
Japan:			
Human Pathogen: Yes			Select Agent CDC: No
Animal Pathogen: No			Select Agent USDA: No
Plant Pathogen: No			
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Genus: Enterococcus		Species: faecalis	
	Risk Group Level	Notes	
Australia/New Zealand 2002:			
Belgium 2004:	2		
Switzerland 2003:	2	(Streptococcus faecalis)	
United Kingdom 2004:			
Germany 2001:	2		
NIH 2002			
European Community 2000:			
Singapore 2004:		Singapore Schedule:	
Japan:	2		
Human Pathogen: Yes		Select Agent CDC: No	
Animal Pathogen: No		Select Agent USDA: No	
Plant Pathogen: No			

Genus: Enterococcus		Species: faecium	
	Risk Group Level	Notes	
Australia/New Zealand 2002:			
Belgium 2004:			
Switzerland 2003:	2	TA (Streptococcus faecium)	
United Kingdom 2004:			
Germany 2001:	2		
NIH 2002			
European Community 2000:			
Singapore 2004:		Singapore Schedule:	
Japan:	2		
Human Pathogen: Yes		Select Agent CDC: No	
Animal Pathogen: No		Select Agent USDA: No	
Plant Pathogen: No			

Genus: Enterococcus		Species: flavescens	
	Risk Group Level	Notes	
Australia/New Zealand 2002:			
Belgium 2004:			
Switzerland 2003:	2		
United Kingdom 2004:			
Germany 2001:			
NIH 2002			
European Community 2000:			
Singapore 2004:		Singapore Schedule:	
Japan:			
Human Pathogen: Yes		Select Agent CDC: No	
Animal Pathogen: No		Select Agent USDA: No	
Plant Pathogen: No			

Genus: Enterococcus		Species: gallinarum	
	Risk Group Level	Notes	
Australia/New Zealand 2002:			
Belgium 2004:			
Switzerland 2003:	2	I (Streptococcus gallinarum)	
United Kingdom 2004:			
Germany 2001:	2		
NIH 2002			
European Community 2000:			
Singapore 2004:		Singapore Schedule:	
Japan:			
Human Pathogen: No		Select Agent CDC: No	
Animal Pathogen: Yes		Select Agent USDA: No	
Plant Pathogen: No			

Genus: Enterococcus		Species: hirae	
	Risk Group Level	Notes	
Australia/New Zealand 2002:			
Belgium 2004:			

12/22/2010

ABSA - Risk Group Classification for Inf...

Switzerland 2003:	2	(Bacteroides denbrocola)
United Kingdom 2004:		
Germany 2001:		
NIH 2002		
European Community 2000:		
Singapore 2004:		Singapore Schedule:
Japan:		
Human Pathogen: Yes Animal Pathogen: No Plant Pathogen: No		Select Agent CDC: No Select Agent USDA: No
MSDS:		
Genus: Prevotella Species: disiens		
	Risk Group Level	Notes
Australia/New Zealand 2002:		
Belgium 2004:		
Switzerland 2003:	2	(Bacteroides disiens)
United Kingdom 2004:		
Germany 2001:		
NIH 2002		
European Community 2000:		
Singapore 2004:		Singapore Schedule:
Japan:		
Human Pathogen: Yes Animal Pathogen: No Plant Pathogen: No		Select Agent CDC: No Select Agent USDA: No
MSDS:		
Genus: Prevotella Species: intermedia		
	Risk Group Level	Notes
Australia/New Zealand 2002:		
Belgium 2004:		
Switzerland 2003:	2	(Bacteroides intermedius)
United Kingdom 2004:		
Germany 2001:		
NIH 2002		
European Community 2000:		
Singapore 2004:		Singapore Schedule:
Japan:		
Human Pathogen: No Animal Pathogen: No Plant Pathogen: No		Select Agent CDC: No Select Agent USDA: No
MSDS:		
Genus: Prevotella Species: loeschii		
	Risk Group Level	Notes
Australia/New Zealand 2002:		
Belgium 2004:		
Switzerland 2003:	2	(Bacteroides loeschii)
United Kingdom 2004:		
Germany 2001:		
NIH 2002		
European Community 2000:		
Singapore 2004:		Singapore Schedule:
Japan:		
Human Pathogen: Yes Animal Pathogen: No Plant Pathogen: No		Select Agent CDC: No Select Agent USDA: No
MSDS:		
Genus: Prevotella Species: melaninogenica		
	Risk Group Level	Notes
Australia/New Zealand 2002:		
Belgium 2004:		
Switzerland 2003:	2	(Bacteroides melaninogenicus, Bacteroides melaninogenicus subsp. melaninogenicus)
United Kingdom 2004:		
Germany 2001:		
NIH 2002		

# Info on Cell Line(s)

## Cell Biology

ATCC® Number: CRL-2616™ Order this Item Price: \$338.00

Designations:  E6E7

Depositors: D Anderson, RN Fichorova, JG Rheinwald

Biosafety Level: 2 [Cells contain human Papilloma viral sequences ]

Shipped: frozen

Medium & Serum: [See Propagation](#)

Growth Properties: adherent

Organism: *Homo sapiens* (human)

Morphology: epithelial

Source: Organ: vagina

Tissue: mucosa

Cell Type: epithelial HPV-16 E6/E7 transformed  
cytokeratins 8 (CK8), 10 (CK10), 13 (CK13), 18 (CK18)  
and 19 (CK19) [52983]

Cellular Products: macrophage colony-stimulating factor (M-CSF);  
transforming growth factor beta1; interleukin 8 (IL-8);  
prostaglandin E2; the secretory leukoproteinase inhibitor;  
polymeric immunoglobulin receptor [52984]

Permits/Forms: In addition to the [MTA](#) mentioned above, other [ATCC and/or regulatory permits](#) may be required for the transfer of this ATCC material. Anyone purchasing ATCC material is ultimately responsible for obtaining the permits. Please [click here](#) for information regarding the specific requirements for shipment to your location.

Restrictions: The line is available with the following restrictions: 1. This cell line was deposited at the ATCC by Dr. Deborah Anderson of The Brigham and Women's Hospital, Inc. and is provided for academic research purposes only. Neither the cell line nor products derived from it may be sold or used for commercial purposes, including screening of compounds. Nor can the cells be distributed to third parties for purposes of sale, or producing for sale, cells or their products. The cells are provided as a service to the research community. They are provided without warranty of merchantability or fitness for a particular purpose or any other warranty, express or implied. 2. All products derived from the cells or genetically altered forms of the cells cannot be commercialized without express written permission from the The Brigham and Women's Hospital, Inc. 3. Any proposed commercial manufacture, use, or sale of the these cells, or their products must first be approved and the terms for such commercial manufacture, use, or sale must first be negotiated with The Brigham and Women's Hospital, Inc., Office of Corporate Sponsored Research and Licensing, 75 Francis Street, Boston, MA 02115 (617) 525-6010.

Isolation: Isolation date: 1996

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• [level services BioStandards](#)

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• [community](#)

## Cell Biology

ATCC® Number: **HTB-37™** [Order this Item](#) | Price: **\$272.00**

Designations:

Depositors: **Caco-2**  
J FoghBiosafety Level: 1

Shipped: frozen

Medium & Serum: [See Propagation](#)

Growth Properties: adherent

Organism: *Homo sapiens* (human)  
epithelial

Morphology:



Source:

**Organ:** colon  
**Disease:** colorectal adenocarcinoma  
keratin

Cellular Products: retinoic acid binding protein 1  
retinol binding protein 2

Permits/Forms:

In addition to the [MTA](#) mentioned above, other [ATCC and/or regulatory permits](#) may be required for the transfer of this ATCC material. Anyone purchasing ATCC material is ultimately responsible for obtaining the permits. Please [click here](#) for information regarding the specific requirements for shipment to your location.

Restrictions:

NaviCyte Scientific holds the exclusive commercial distribution rights to the Caco-2 cell line as deposited by the Memorial Sloan-Kettering Cancer Center (SK) with the American Type Culture Collection (ATCC). **Note:** All uses of ATCC® HTB-37™, other than for research by a non-commercial or academic entity, require a license and use authorization from NaviCyte Scientific under its exclusive arrangement with Memorial Sloan-Kettering.

Applications:

transfection host ([Nucleofection technology from Lonza Roche FuGENE® Transfection Reagents](#))

Receptors:

heat stable enterotoxin (Stx, *E. coli*), expressed  
epidermal growth factor (EGF), expressed

Virus Susceptibility: Human immunodeficiency virus 1

Tumorigenic: Yes

DNA Profile (STR):

Amelogenin: X  
CSF1PO: 11  
D13S317: 11,13,14  
D16S539: 12,13  
D5S818: 12,13  
D7S820: 11,12  
TH01: 6  
TPOX: 9,11  
vWA: 16,18

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# Toxin Info



## TOXIN USE RISK ASSESSMENT

Name of Toxin:	Aflatoxin B1
Proposed Use Dose:	1000 µg
Proposed Storage Dose:	1000 µg
LD <sub>50</sub> (species):	9000 µg

<u>Calculation:</u>			
	9000 µg/kg	x	50 kg/person
Dose per person based on LD <sub>50</sub> in µg =	450000		
LD <sub>50</sub> per person with safety factor of 10 based on LD <sub>50</sub> in µg =	45000		

### Comments/Recommendations:

OK



### TOXIN USE RISK ASSESSMENT

Name of Toxin:	Aflatoxin M1
Proposed Use Dose:	1000 µg
Proposed Storage Dose:	1000 µg
LD <sub>50</sub> (species):	300 µg

<u>Calculation:</u>			
	300 µg/kg	x	50 kg/person
	Dose per person based on LD <sub>50</sub> in µg = 15000		
	LD <sub>50</sub> per person with safety factor of 10 based on LD <sub>50</sub> in µg = 1500		

<u>Comments/Recommendations:</u>
OK



TOXIN USE RISK ASSESSMENT

Name of Toxin:	Ochratoxin A
Proposed Use Dose:	1000 µg
Proposed Storage Dose:	1000 µg
LD <sub>50</sub> (species):	20000 µg

<u>Calculation:</u>			
	20000 µg/kg	x	50 kg/person
Dose per person based on LD <sub>50</sub> in µg =			1000000
LD <sub>50</sub> per person with safety factor of 10 based on LD <sub>50</sub> in µg =			100000

Comments/Recommendations:  
OK

## Material Safety Data Sheet

Version 4.1  
Revision Date 10/26/2010  
Print Date 12/03/2010

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : **Aflatoxin M<sub>1</sub>**

Product Number : A6428  
Brand : Sigma  
Product Use : For laboratory research purposes.

Supplier : Sigma-Aldrich Canada, Ltd  
2149 Winston Park Drive  
OAKVILLE ON L6H 6J8  
CANADA

Manufacturer : Sigma-Aldrich Corporation  
3050 Spruce St.  
St. Louis, Missouri 63103  
USA

Telephone : +19058299500  
Fax : +19058299292  
Emergency Phone # (For both supplier and manufacturer) : 1-800-424-9300

Preparation Information : Sigma-Aldrich Corporation  
Product Safety - Americas Region  
1-800-521-8956

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

#### Target Organs

Liver

#### WHMIS Classification

D1A	Very Toxic Material Causing Immediate and Serious Toxic Effects	Highly toxic by ingestion Highly toxic by skin absorption Highly toxic by inhalation
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#### GHS Classification

Acute toxicity, Inhalation (Category 2)  
Acute toxicity, Dermal (Category 2)  
Acute toxicity, Oral (Category 2)  
Carcinogenicity (Category 1B)

#### GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H300 + H310	Fatal if swallowed or in contact with skin.
H330	Fatal if inhaled.
H350	May cause cancer.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.  
 P271 Use only outdoors or in a well-ventilated area.  
 P280 Wear protective gloves/ protective clothing.  
 P284 Wear respiratory protection.  
 P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.  
 P302 + P350 IF ON SKIN: Gently wash with plenty of soap and water.  
 P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
 P310 Immediately call a POISON CENTER or doctor/ physician.  
 P320 Specific treatment is urgent (see supplemental first aid instructions on this label).  
 P330 Rinse mouth.  
 P361 Remove/Take off immediately all contaminated clothing.  
 P363 Wash contaminated clothing before reuse.  
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
 P405 Store locked up.  
 P501 Dispose of contents/ container to an approved waste disposal plant.

**HMIS Classification**

**Health hazard:** 3  
**Chronic Health Hazard:** \*  
**Flammability:** 0  
**Physical hazards:** 1

**Potential Health Effects**

**Inhalation** May be fatal if inhaled. May cause respiratory tract irritation.  
**Skin** May be fatal if absorbed through skin. May cause skin irritation.  
**Eyes** May cause eye irritation.  
**Ingestion** May be fatal if swallowed.

---

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Formula : C<sub>17</sub>H<sub>12</sub>O<sub>7</sub>  
 Molecular Weight : 328.27 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
<b>Aflatoxin M1</b>			
6795-23-9	229-865-4	-	-

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**4. FIRST AID MEASURES**

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

**In case of eye contact**

Flush eyes with water as a precaution.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

---

**5. FIRE-FIGHTING MEASURES**

**Conditions of flammability**

Not flammable or combustible.

**Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for fire-fighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**Hazardous combustion products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides

**Explosion data - sensitivity to mechanical impact**

no data available

**Explosion data - sensitivity to static discharge**

no data available

---

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions**

Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

---

**7. HANDLING AND STORAGE****Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

**Conditions for safe storage**

Keep container tightly closed in a dry and well-ventilated place.

Light sensitive.

---

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Contains no substances with occupational exposure limit values.

**Personal protective equipment****Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Eye protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

**Specific engineering controls**

Use mechanical exhaust or laboratory fumehood to avoid exposure.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form	solid
Colour	no data available

### Safety data

pH	no data available
Melting/freezing point	no data available
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

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## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

no data available

### Conditions to avoid

no data available

### Materials to avoid

Strong oxidizing agents

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

---

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Oral LD50

no data available

#### Inhalation LC50

#### Dermal LD50

no data available

### Other information on acute toxicity

no data available

**Skin corrosion/irritation**

no data available

**Serious eye damage/eye irritation**

no data available

**Respiratory or skin sensitization**

no data available

**Germ cell mutagenicity**

no data available

**Carcinogenicity**

Possible human carcinogen

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Aflatoxin M1)

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

**Reproductive toxicity**

no data available

**Teratogenicity**

no data available

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

no data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

no data available

**Aspiration hazard**

no data available

**Potential health effects**

<b>Inhalation</b>	May be fatal if inhaled. May cause respiratory tract irritation.
<b>Ingestion</b>	May be fatal if swallowed.
<b>Skin</b>	May be fatal if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	May cause eye irritation.

**Signs and Symptoms of Exposure**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Synergistic effects**

no data available

**Additional Information**

RTECS: Not available

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**12. ECOLOGICAL INFORMATION**

**Toxicity**

no data available

**Persistence and degradability**

no data available

**Bioaccumulative potential**

no data available

**Mobility in soil**

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

no data available

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**13. DISPOSAL CONSIDERATIONS****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated packaging**

Dispose of as unused product.

---

**14. TRANSPORT INFORMATION****DOT (US)**

UN-Number: 3462 Class: 6.1

Packing group: I

Proper shipping name: Toxins, extracted from living sources, solid, n.o.s. (Aflatoxin M1)

Marine pollutant: No

Poison Inhalation Hazard: No

**IMDG**

UN-Number: 3462 Class: 6.1

Packing group: I

EMS-No: F-A, S-A

Proper shipping name: TOXINS, EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S. (Aflatoxin M1)

Marine pollutant: No

**IATA**

UN-Number: 3462 Class: 6.1

Packing group: I

Proper shipping name: Toxins, extracted from living sources, solid, n.o.s. (Aflatoxin M1)

---

**15. REGULATORY INFORMATION****DSL Status**

This product contains the following components that are not on the Canadian DSL nor NDSL lists.

Aflatoxin M1

CAS-No.

6795-23-9

**WHMIS Classification**

D1A Very Toxic Material Causing Immediate and Serious Toxic Effects

Highly toxic by ingestion  
Highly toxic by skin absorption  
Highly toxic by inhalation

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

---

**16. OTHER INFORMATION****Further information**

Copyright 2010 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only. 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 Co., 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.

**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : Aflatoxin B<sub>1</sub> solution

Product Number : 44647-U  
Brand : Supelco

Company : Sigma-Aldrich Canada, Ltd  
2149 Winston Park Drive  
OAKVILLE ON L6H 6J8  
CANADA

Telephone : +19058299500  
Fax : +19058299292  
Emergency Phone # : 800-424-9300

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

CAS-No.	EC-No.	Index-No.	Concentration
<b>Methanol</b>			
67-56-1	200-659-6	603-001-00-X	>= 99 - <= 100 %
<b>Aflatoxin B1</b>			
1162-65-8	214-603-3	-	<= 0.001 %

**3. HAZARDS IDENTIFICATION****Emergency Overview****Target Organs**

Eyes, Kidney, Liver, Heart, Central nervous system

**WHMIS Classification**

B2	Flammable liquid	Flammable liquid
D1A		Highly toxic by inhalation
D1B		Toxic by ingestion
D2B		Toxic by skin absorption
		Moderate skin irritant
		Moderate eye irritant

**HMIS Classification**

Health hazard:	3
Chronic Health Hazard:	*
Flammability:	3
Physical hazards:	0

**Potential Health Effects**

<b>Inhalation</b>	Toxic if inhaled. Causes respiratory tract irritation.
<b>Skin</b>	Toxic if absorbed through skin. Causes skin irritation.
<b>Eyes</b>	Causes eye irritation.
<b>Ingestion</b>	Toxic if swallowed.

#### 4. FIRST AID MEASURES

##### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

##### If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

##### In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

##### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

##### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

#### 5. FIRE-FIGHTING MEASURES

##### Flammable properties

Flash point 10 °C (50 °F) - closed cup

Ignition temperature no data available

##### Suitable extinguishing media

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

##### Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

##### Further information

Use water spray to cool unopened containers.

#### 6. ACCIDENTAL RELEASE MEASURES

##### Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

##### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

##### Methods for cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

#### 7. HANDLING AND STORAGE

##### Handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

**Storage**

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in cool place.

Recommended storage temperature: 2 - 8 °C

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Update	Basis
Methanol	67-56-1	TWA	200 ppm	2006-11-29	Canada. British Columbia OEL
Remarks	Contributes significantly to the overall exposure by the skin route.				
		STEL	250 ppm	2006-11-29	Canada. British Columbia OEL
	Contributes significantly to the overall exposure by the skin route.				
		TWAE V	200 ppm 260 mg/m <sup>3</sup>	2005-12-17	Canada. Ontario OELs
	Skin				
		STEV	250 ppm 325 mg/m <sup>3</sup>	2005-12-17	Canada. Ontario OELs
	Skin				
		TWA	200 ppm 262 mg/m <sup>3</sup>	2004-04-30	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
	Substance may be readily absorbed through intact skin				
		STEL	250 ppm 328 mg/m <sup>3</sup>	2004-04-30	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
	Substance may be readily absorbed through intact skin				
		TWAE V	200 ppm 262 mg/m <sup>3</sup>	2006-12-29	Canada. Quebec OELs
	Skin (percutaneous)				
		STEV	250 ppm 328 mg/m <sup>3</sup>	2006-12-29	Canada. Quebec OELs
	Skin (percutaneous)				
		TWA	200 ppm 262 mg/m <sup>3</sup>	2007-01-01	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)

Substance may be readily absorbed through intact skin					
		STEL	250 ppm 328 mg/m <sup>3</sup>	2007-01-01	Canada, Alberta, Occupational Health and Safety Code (table 2: OEL)
Substance may be readily absorbed through intact skin					

### Personal protective equipment

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Hand protection

Handle with gloves.

#### Eye protection

Face shield and safety glasses

#### Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

#### Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form liquid

### Safety data

pH no data available  
Melting point -98 °C (-144 °F)  
Boiling point 65 °C (149 °F) at 1,013 hPa (760 mmHg)  
Flash point 10 °C (50 °F) - closed cup  
Ignition temperature no data available  
Lower explosion limit 6 %(V)  
Upper explosion limit 36.5 %(V)  
Vapour pressure 129 hPa (97 mmHg) at 25 °C (77 °F)  
Density 0.790 g/cm<sup>3</sup>  
Water solubility no data available  
Evaporation rate 5.9

## 10. STABILITY AND REACTIVITY

### Storage stability

Stable under recommended storage conditions.

### Conditions to avoid

Heat, flames and sparks.

**Materials to avoid**

Acids, Oxidizing agents, Alkali metals, Acid chlorides, Acid anhydrides, Reducing agents

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides

**Hazardous reactions**

Vapours may form explosive mixture with air.

**11. TOXICOLOGICAL INFORMATION****Acute toxicity**

no data available

**Irritation and corrosion**

no data available

**Sensitisation**

no data available

**Chronic exposure**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**Signs and Symptoms of Exposure**

Methyl alcohol may be fatal or cause blindness if swallowed., Cannot be made non-poisonous., Effects due to ingestion may include:, Nausea, Dizziness, Gastrointestinal disturbance, Weakness, Confusion., Drowsiness, Unconsciousness, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Potential Health Effects**

<b>Inhalation</b>	Toxic if inhaled. Causes respiratory tract irritation.
<b>Skin</b>	Toxic if absorbed through skin. Causes skin irritation.
<b>Eyes</b>	Causes eye irritation.
<b>Ingestion</b>	Toxic if swallowed.
<b>Target Organs</b>	Eyes, Kidney, Liver, Heart, Central nervous system,

**12. ECOLOGICAL INFORMATION****Elimination information (persistence and degradability)**

no data available

**Ecotoxicity effects**

no data available

**Further information on ecology**

no data available

**13. DISPOSAL CONSIDERATIONS****Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**  
Dispose of as unused product.

**14. TRANSPORT INFORMATION**

**DOT (US)**

UN-Number: 1230 Class: 3 Packing group: II  
Proper shipping name: Methanol, solution  
Reportable Quantity (RQ): 5000 lbs  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

UN-Number: 1230 Class: 3 (6.1) Packing group: II EMS-No: F-E, S-D  
Proper shipping name: METHANOL, SOLUTION  
Marine pollutant: No

**IATA**

UN-Number: 1230 Class: 3 (6.1) Packing group: II  
Proper shipping name: Methanol, solution

**15. REGULATORY INFORMATION**

**DSL Status**

This product contains the following components that are not on the Canadian DSL nor NDSL lists.

Aflatoxin B1

CAS-No.  
1162-65-8

**WHMIS Classification**

B2 Flammable liquid  
D1A  
D1B  
D2B

Flammable liquid  
Highly toxic by inhalation  
Toxic by ingestion  
Toxic by skin absorption  
Moderate skin irritant  
Moderate eye irritant

**16. OTHER INFORMATION**

**Further information**

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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 Co., 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.

**MSDS FOR ANIMAL CELL CULTURES (Biosafety Level 1 or 2)**

ATCC cultures are not hazardous as defined by OSHA 1910.1200. However, as live cells they are potential biohazards.

**ATCC Emergency Telephone:** (703) 365-2710 (24 hours)

**Chemtec:** (800) 424-9300

To be used only in the event of an emergency involving a spill, leak, fire, exposure or accident.

**Description**

Either frozen or growing cells shipped in liquid cell culture medium (a mixture of components that may include, but is not limited to: inorganic salts, vitamins, amino acids, carbohydrates and other nutrients dissolved in water).

**SECTION I****Hazardous Ingredients**

Frozen cultures may contain 5 to 10% Dimethyl sulfoxide (DMSO)

**SECTION II****Physical data**

Pink or red aqueous liquid

**SECTION III****Health hazards****For Biosafety Level 1 Cell Lines**

This cell line is not known to harbor an agent known to cause disease in healthy adult humans. This cell line has **NOT** been screened for Hepatitis B, human immunodeficiency viruses or other adventitious agents. Handle as a potentially biohazardous material under at least Biosafety Level 1 containment.

**For Biosafety Level 2 Cell Lines**

This cell line is known to contain an agent that requires handling at Biosafety Level 2 containment [U.S. Government Publication **Biosafety in Microbiological and Biomedical Laboratories** (CDC, 1999)]. These agents have been associated with human disease. This cell line has **NOT** been screened for Hepatitis B, human immunodeficiency viruses or other adventitious agents. Cell lines derived from primate lymphoid tissue may fall under the regulations of 29 CFR 1910.1030 Bloodborne Pathogens.

**SECTION IV****Fire and explosion**

Not applicable

**SECTION V****Reactivity data**

Stable. Hazardous polymerization will not occur.

**SECTION VI****Method of disposal**

Spill: Contain the spill and decontaminate using suitable disinfectants such as chlorine bleach or 70% ethyl or isopropyl alcohol.

Waste disposal: Dispose of cultures and exposed materials by autoclaving at 121°C for 20 minutes. Follow all Federal, State and local regulations.

**SECTION VII****Special protection information****For Biosafety Level 1 Cell Lines**

Handle as a potentially biohazardous material under at least Biosafety Level 1 containment. Cell lines derived from primate lymphoid tissue may fall under the regulations of 29 CFR 1910.1030 Bloodborne Pathogens.

**For Biosafety Level 2 Cell Lines**

Handle as a potentially biohazardous material under at least Biosafety Level 2 containment. Cell lines derived from primate lymphoid tissue may fall under the regulations of 29 CFR 1910.1030 Bloodborne Pathogens.

**SECTION VIII****Special precautions or comments**

ATCC recommends that appropriate safety procedures be used when handling all cell lines, especially those derived from human or other primate material. Detailed discussions of laboratory safety procedures are provided in **Laboratory Safety: Principles and Practice** (Fleming, et al., 1995) the ATCC manual on quality control (Hay, et al., 1992), the *Journal of Tissue Culture Methods* (Caputo, 1988), and in the U.S. Government Publication, **Biosafety in Microbiological and Biomedical Laboratories** (CDC, 1999). This publication is available in its entirety in the Center for Disease Control Office of Health and Safety's web site at <http://www.cdc.gov/od/ohs/biosfty/bmbl4/bmbl4toc.htm>.

**THE ABOVE INFORMATION IS CORRECT TO THE BEST OF OUR KNOWLEDGE. ALL MATERIALS AND MIXTURES MAY PRESENT UNKNOWN HAZARDS AND SHOULD BE USED WITH CAUTION. THE USER SHOULD MAKE INDEPENDENT DECISIONS REGARDING THE COMPLETENESS OF THE INFORMATION BASED ON ALL SOURCES AVAILABLE. ATCC SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR CONTACT WITH THE ABOVE PRODUCT.**

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February 2002

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Ochratoxin A

Product Number : O1877

Brand : Sigma

Product Use : For laboratory research purposes.

Supplier : Sigma-Aldrich Canada, Ltd  
2149 Winston Park Drive  
OAKVILLE ON L6H 6J8  
CANADA

Manufacturer : Sigma-Aldrich Corporation  
3050 Spruce St.  
St. Louis, Missouri 63103  
USA

Telephone : +19058299500

Fax : +19058299292

Emergency Phone # (For both supplier and manufacturer) : 1-800-424-9300

Preparation Information : Sigma-Aldrich Corporation  
Product Safety - Americas Region  
1-800-521-8956

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

##### Target Organs

Liver, Kidney, Central nervous system, Blood

##### WHMIS Classification

D1A	Very Toxic Material Causing Immediate and	Highly toxic by ingestion
D2A	Serious Toxic Effects	Teratogen
D2B		Carcinogen
		Moderate skin irritant
		Moderate eye irritant
		Mutagen

##### GHS Classification

Acute toxicity, Oral (Category 2)

Skin irritation (Category 3)

Carcinogenicity (Category 2)

Reproductive toxicity (Category 2)

Specific target organ toxicity - repeated exposure, Inhalation (Category 2)

Chronic aquatic toxicity (Category 4)

##### GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H300	Fatal if swallowed.
H316	Causes mild skin irritation.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure if inhaled.

H413 May cause long lasting harmful effects to aquatic life.

Precautionary statement(s)  
 P264 Wash hands thoroughly after handling.  
 P281 Use personal protective equipment as required.  
 P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

**HMIS Classification**

Health hazard: 3  
 Chronic Health Hazard: \*  
 Flammability: 0  
 Physical hazards: 0

**Potential Health Effects**

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.  
 Skin May be harmful if absorbed through skin. Causes skin irritation.  
 Eyes Causes eye irritation.  
 Ingestion May be fatal if swallowed.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Synonyms : N-[(3R)-(5-Chloro-8-hydroxy-3-methyl-1-oxo-7-isochromanyl)carbonyl]-L-phenylalanine

CAS-No.	EC-No.	Index-No.	Concentration
<b>(-)-Ochratoxin A</b>			
303-47-9	206-143-7	-	-
<b>Ethyl acetate</b>			
141-78-6	205-500-4	607-022-00-5	<= 2 %
<b>Petroleum ether, Bp 40 - 70°C</b>			
101316-46-5	309-852-0	-	<= 1 %

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**4. FIRST AID MEASURES**

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

**In case of eye contact**

Flush eyes with water as a precaution.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

---

**5. FIRE-FIGHTING MEASURES**

**Conditions of flammability**

Not flammable or combustible.

**Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for fire-fighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**Hazardous combustion products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), Hydrogen chloride gas

**Explosion data - sensitivity to mechanical impact**

no data available

**Explosion data - sensitivity to static discharge**

no data available

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions**

Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**7. HANDLING AND STORAGE****Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

**Conditions for safe storage**

Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature: 2 - 8 °C

Keep in a dry place.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Update	Basis
Ethyl acetate	141-78-6	TWA	150 ppm	2006-11-29	Canada. British Columbia OEL
		TWAE V	400 ppm 1,440 mg/m <sup>3</sup>	2005-12-17	Canada. Ontario OELs
		TWA	400 ppm 1,440 mg/m <sup>3</sup>	2007-01-01	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
Remarks	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required				
		TWAE V	400 ppm 1,440 mg/m <sup>3</sup>	2006-12-29	Canada. Quebec OELs

**Personal protective equipment****Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Eye protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

**Specific engineering controls**

Use mechanical exhaust or laboratory fumehood to avoid exposure.

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**9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

Form	powder
Colour	light yellow

**Safety data**

pH	no data available
Melting/freezing point	169.0 °C (336.2 °F)
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	log Pow: 4.70
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

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**10. STABILITY AND REACTIVITY****Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

no data available

**Conditions to avoid**

no data available

**Materials to avoid**

Strong oxidizing agents

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), Hydrogen chloride gas

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**11. TOXICOLOGICAL INFORMATION****Acute toxicity****Oral LD50**

LD50 Oral - rat - 20.0 mg/kg

Remarks: Lungs, Thorax, or Respiration:Chronic pulmonary edema. Nutritional and Gross Metabolic:Weight loss or decreased weight gain.

**Inhalation LC50**

no data available

**Dermal LD50**

no data available

**Other information on acute toxicity**

no data available

**Skin corrosion/irritation**

no data available

**Serious eye damage/eye irritation**

no data available

**Respiratory or skin sensitization**

no data available

**Germ cell mutagenicity**

Laboratory experiments have shown mutagenic effects.

**Carcinogenicity**

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Limited evidence of carcinogenicity in animal studies

IARC: 2B - Group 2B: Possibly carcinogenic to humans ((-)-Ochratoxin A)

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

**Reproductive toxicity**

no data available

**Teratogenicity**

Laboratory experiments have shown teratogenic effects.

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

no data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

no data available

**Aspiration hazard**

no data available

**Potential health effects**

<b>Inhalation</b>	May be harmful if inhaled. Causes respiratory tract irritation.
<b>Ingestion</b>	May be fatal if swallowed.
<b>Skin</b>	May be harmful if absorbed through skin. Causes skin irritation.
<b>Eyes</b>	Causes eye irritation.

**Signs and Symptoms of Exposure**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Synergistic effects**

no data available

**Additional Information**

RTECS: Not available

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**12. ECOLOGICAL INFORMATION**

**Toxicity**

no data available

**Persistence and degradability**

no data available

**Bioaccumulative potential**

no data available

**Mobility in soil**

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

no data available

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**13. DISPOSAL CONSIDERATIONS**

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated packaging**

Dispose of as unused product.

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**14. TRANSPORT INFORMATION**

**DOT (US)**

UN-Number: 3462 Class: 6.1 Packing group: II  
Proper shipping name: Toxins, extracted from living sources, solid, n.o.s.  
Reportable Quantity (RQ): 250000 lbs  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

UN-Number: 3462 Class: 6.1 Packing group: II EMS-No: F-A, S-A  
Proper shipping name: TOXINS, EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S.  
Marine pollutant: No

**IATA**

UN-Number: 3462 Class: 6.1

Packing group: II

Proper shipping name: Toxins, extracted from living sources, solid, n.o.s.

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**15. REGULATORY INFORMATION****DSL Status**

This product contains the following components that are not on the Canadian DSL nor NDSL lists.

	CAS-No.
(-)-Ochratoxin A	303-47-9

**WHMIS Classification**

D1A	Very Toxic Material Causing Immediate and	Highly toxic by ingestion
D2A	Serious Toxic Effects	Teratogen
D2B		Carcinogen
		Moderate skin irritant
		Moderate eye irritant
		Mutagen

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

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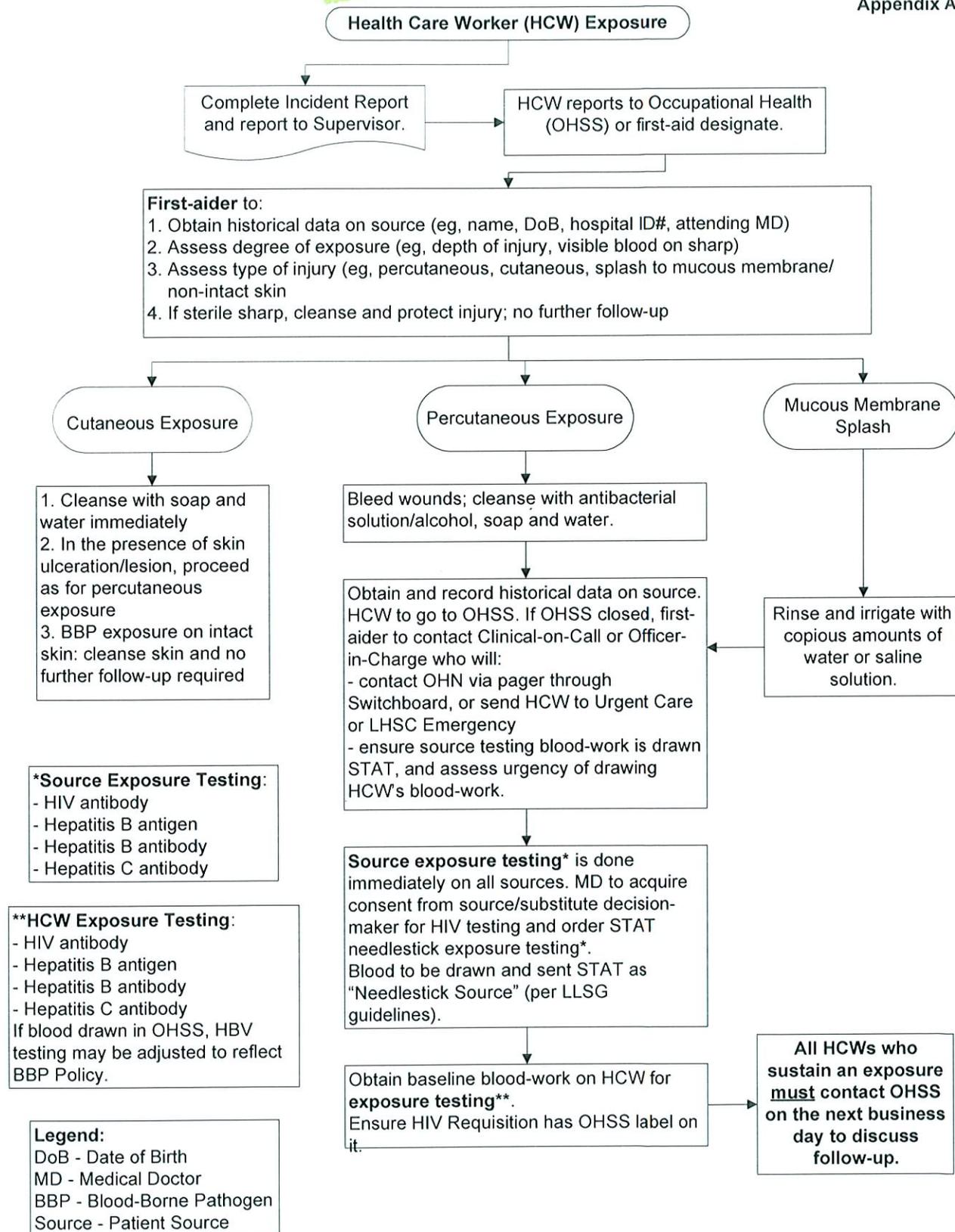
**16. OTHER INFORMATION****Further information**

Copyright 2010 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only. 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 Co., 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.

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# FIRST AID PROCESS FOR EXPOSURE TO BLOOD-BORNE PATHOGEN (BBP)

Appendix A



## Emergency Medical Procedures

In situations requiring immediate medical attention, telephone 55555, explain your situation.

First aid kit is located in

The following emergency procedures shall be followed by a worker exposed to:

- Blood or body fluids (via needlestick, cut or puncture wound, via mucous membrane contact)
  - Infectious or communicable disease agents (via inhalation, a needlestick, cut or puncture wound, via ingestion or mucous membrane contact), or
  - Zoonotic agents (via a needlestick, cut, animal bite or scratch, via mucous membrane contact).
1. The exposed site must be washed immediately
    - a. If a needlestick, cut, puncture wound, animal bite or scratch, wash with soap and water after allowing the wound to bleed freely.
    - b. If mucous (eye nose, mouth) membrane or non-intact (cuts, rash, acne or dermatitis) skin contact, flush with water at the nearest faucet or eye wash station.
  2. The worker must immediately inform the supervisor of the exposure incident.
  3. The worker must seek prompt medical attention at the nearest hospital emergency department.
  4. The worker must provide information for a SJHC or University Accident / Incident / Occupational Disease Report (obtained from her / his supervisor / principal investigator), describing the incident in detail, including the route of exposure and the emergency actions taken, and a description of the worker's duties as they relate to the exposure incident.
  5. The accident must be reported in the Laboratory accident Log book.

### Purpose of Reporting:

- First aid documentation, as per the Workplace Safety and Insurance Act
- Identification of hazardous situation(s) and trigger for follow up and corrective action
- Documentation of accident investigation for due diligence
- Data collection used in assessing accident trends, for purposes of creating future preventative measures

### Circumstances to Report:

- When an employee sustains an injury that occurs, or may have occurred, during the course of employment which results from a sudden event or develops gradually over a period of time.
- When an employee sustains an exposure that occurs, or may have occurred, during the course of employment, that may result in injury/illness immediately or develops over time;
- When a hazardous occurrence or near miss occurs that could have resulted in an injury to an employee, patient/resident, volunteer or visitor.

Note: for the purpose of this policy employees refer to employees paid by St. Josephs Health Care London, residents, physicians, students, volunteers and contract workers. Contract workers applies to those from companies who are not required to provide first aid on site.

### Process:

If an employee is injured or sustains an exposure while at work:

1. Ensure the employee receives appropriate first aid. (Refer to site specific processes.)
2. Ensure the occurrence is reported to the leader/supervisor.
3. Report the occurrence using a *Workplace Occurrence Form* and follow up as per the attached [flow chart](#).

## Accountabilities:

### *Employee*

- Seek first aid or emergent intervention if required.
- Immediately report injury, exposure to leader/supervisor or designate.
- Complete Workplace Occurrence Form fully, filling out corrective actions in consultation with leader/supervisor.
- Notify Occupational Health and Safety Services (OHSS) of any medical attention required for the injury/exposure as soon as possible.
- Notify OHSS if any lost time occurs as a result of the injury at the time of the injury or at a later date as a result of the initial injury.

### *Leader*

- Assume responsibility or assign a designate on each shift to be responsible for management of occurrences.
- In the event of an occurrence, assist the employee involved in seeking appropriate first aid or emergent intervention, if required.
- Review the occurrence with the involved employee and ensure the *Workplace Occurrence Form* is filled out by the employee. Leader/supervisor fills in any underlying factors and corrective preventative action as appropriate, preferable jointly with employee.
- Distribute *Workplace Occurrence Form* as follows:
  - keep pink (bottom) copy of report, or in the case of a designate, send copy of report to the leader
  - send two other copies to Occupational Health & Safety Services
- Ensure corrective action and/or preventative measures are implemented to prevent further occurrences.
- If the employee is unable to do so, notify Occupational Health and Safety Services (OHSS) of any medical attention required, beyond first aid, for the injury/exposure as soon as possible.
- If the employee is unable to do so, notify OHSS if any lost time occurs as a result of the injury at the time of the injury or at a later date as a result of the initial injury.

### *Occupational Health & Safety Services (OHSS)*

- If incident occurs when OHSS is open, provide first aid treatment and arrange for other medical intervention if required. Otherwise, first aid is provided by designated first aider where injury occurs.
- Assess fitness to work and communicate to leader if employee's status is changed as a result of the occurrence. Facilitate transitional accommodation program if appropriate.
- Report occurrences to Workplace Safety and Insurance Board as per the Act and Regulations.
- Review and investigate occurrences, ensuring appropriate corrective action and follow up plan are in place.
- Report any critical incidents to the Ministry of Labour, as required by the Occupational Health & Safety Act.
- Track and report injury trends to leaders and to Joint Health & Safety Committee(s).

## References:

Occupational Health & Safety Act and Regulations  
Workplace Safety & Insurance Act

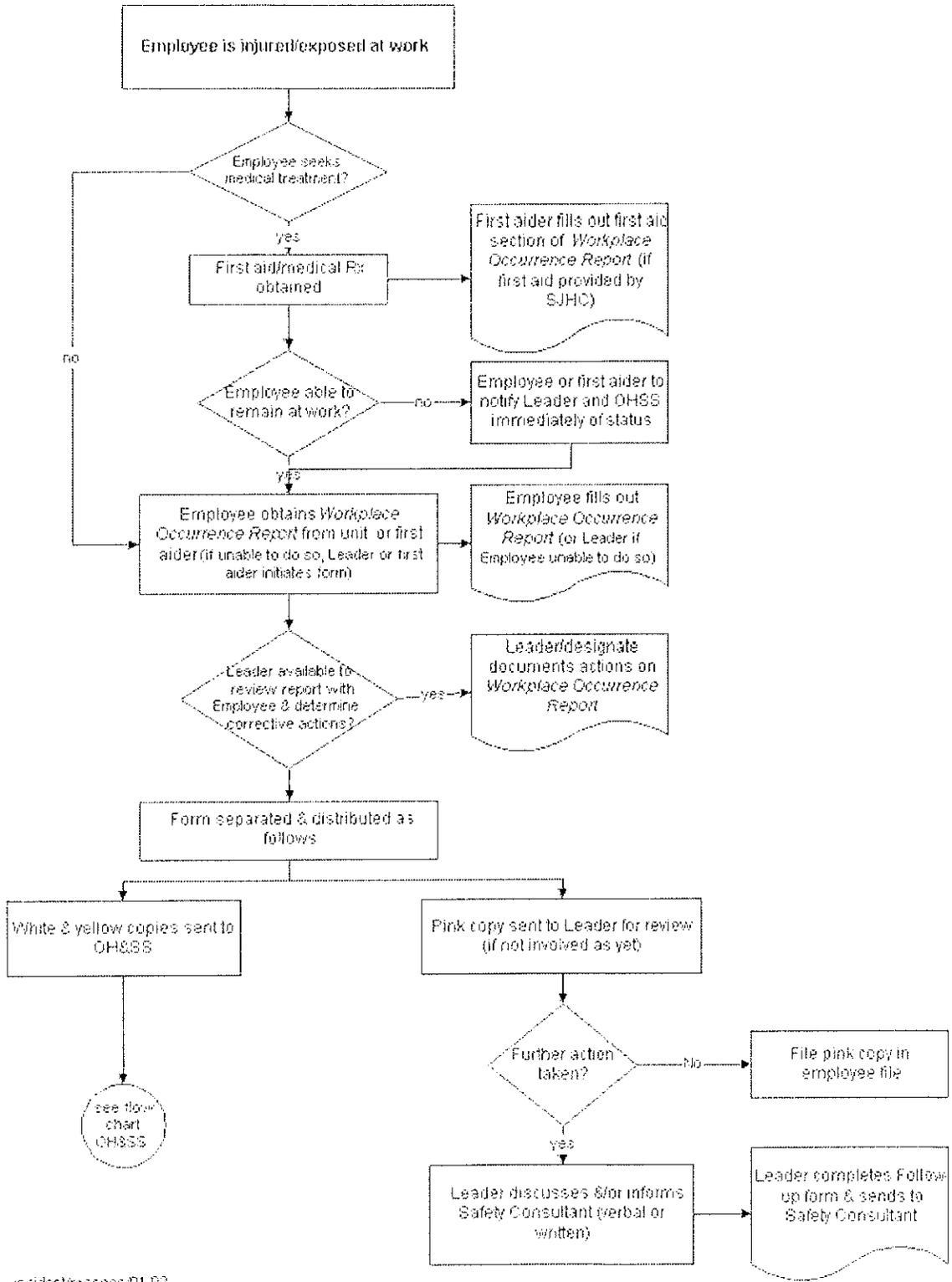
## Important Emergency Contact Numbers

**SJHC Occupational Health and Safety:** x64332

### **University Biosafety Office**

Report incident to: Christine Stutt, Wellness Information Coordinator 661-2111 x85562

### Process for Reporting Employee Injury/Exposure at Work



incidentprocess:01:02