



**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.**

Bacterial cultures E. coli , M.luteus, Zymomanas sp.  
Yeast culture S. cerevisiae

Undergraduate student labs

Cultures are stored on agar slants in a lab refridgerator

All culture tubes and agar plates are autoclaved and disposed of in labeled bags in the regular garbage.

**Please include a one page research summary or teaching protocol.**

**Aseptic technique  
Transfer and sub culture of microorganisms  
Use of differential media  
Water quality  
Food evaluation  
Gram staining**

**Fermentation methods  
Ethanol production  
Oxygen transfer kinetics**

## 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)? ATCC

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

\_\_\_\_\_ no risk \_\_\_\_\_

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>E. coli</i> *	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Yes <input checked="" type="radio"/> No	1	ATCC	<input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 2+ <input type="radio"/> 3
<i>M. luteus</i>	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Yes <input checked="" type="radio"/> No	1	ATCC	<input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 2+ <input type="radio"/> 3
<i>S. cerevisiae</i>	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Yes <input checked="" type="radio"/> No	3	ATCC	<input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 2+ <input type="radio"/> 3
<i>ZYMOGENAS</i> sp.	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Yes <input checked="" type="radio"/> No	1	ATCC	<input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 2+ <input type="radio"/> 3

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

## 2.0 Cell Culture

\* ATCC 35339 *E. coli* (MIRULA) CASTELLANI & GHALMERS FC02 20  
 NO OTHER INFO WAS PROVIDED BY ATCC OR CEDERLAFNE WBS

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="radio"/> Yes <input type="radio"/> No		Not applicable
Rodent	<input type="radio"/> Yes <input type="radio"/> No		
Non-human primate	<input type="radio"/> Yes <input type="radio"/> No		
Other (specify)	<input type="radio"/> Yes <input type="radio"/> 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 type="radio"/> Yes <input type="radio"/> No		
Rodent	<input type="radio"/> Yes <input type="radio"/> No		
Non-human primate	<input type="radio"/> Yes <input type="radio"/> No		
Other (specify)	<input type="radio"/> Yes <input type="radio"/> No		

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

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

### 3.0 Use of Human Source Materials

3.1 Does your work involve the use of human source materials?  YES  NO

If no, please proceed to Section 4.0

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

Human Source Material	Source/Supplier /Company Name	Is Human Source Material Infected With An Infectious Agent? YES/NO	Name of Infectious Agent (If applicable)	PHAC or CFIA Containment Level (Select one)
Human Blood (whole) or other Body Fluid		<input type="radio"/> Yes <input type="radio"/> Unknown		<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 2+ <input type="radio"/> 3
Human Blood (fraction) or other Body Fluid		<input type="radio"/> Yes <input type="radio"/> Unknown		<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 2+ <input type="radio"/> 3
Human Organs or Tissues (unpreserved)		<input type="radio"/> Yes <input type="radio"/> Unknown		<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 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

\* 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 \_\_\_\_\_  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
- ◆ Wild caught animals  YES, please specify species & colony # \_\_\_\_\_  NO
- ◆ Birds  YES, please specify species \_\_\_\_\_  NO
- ◆ Others (wild or domestic)  YES, please specify \_\_\_\_\_  NO

## 8.0 Biological Toxins

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

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

8.3 What is the LD<sub>50</sub> (specify species) of the toxin \_\_\_\_\_

8.4 How much of the toxin is handled at one time\*? \_\_\_\_\_

8.5 How much of the toxin is stored\*? \_\_\_\_\_

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

\*For information on biosecurity requirements, please see:

[http://www.uwo.ca/humanresources/docandform/docs/healthandsafety/biosafety/Biosecurity\\_Requirements.pdf](http://www.uwo.ca/humanresources/docandform/docs/healthandsafety/biosafety/Biosecurity_Requirements.pdf)

## 9.0 Insects

9.1 Do you use insects?  YES  NO If no, please proceed to Section 10.0

9.2 If YES, please give the name of the species. \_\_\_\_\_

9.3 What is the origin of the insect? \_\_\_\_\_

9.4 What is the life stage of the insect? \_\_\_\_\_

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

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

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

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

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

## 10.0 Plants

10.1 Do you use plants?  YES  NO If no, please proceed to Section 11.0

10.2 If YES, please give the name of the species. \_\_\_\_\_

10.3 What is the origin of the plant? \_\_\_\_\_

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

10.5 What is your intention?  Grow and maintain a crop  "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

\* STUDENTS RECEIVE AN INHOUSE WRITTEN LAB MANUAL WHICH LISTS ALL  
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 \_\_\_\_\_

LABORATORY PSE REQUIREMENTS AND DO'S & DON'T'S

**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 Bruno deini Date: 8/26/10

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:

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

**15.0 Approvals**

1) UWO Biohazards Subcommittee: SIGNATURE: \_\_\_\_\_  
Date: \_\_\_\_\_

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

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

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

Special Conditions of Approval:



Home > Emergency Preparedness > Laboratory Security > Material Safety Data Sheets (MSDS) - Infectious Substances > Micrococcus spp. - Material Safety Data Sheets (MSDS)

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

### MATERIAL SAFETY DATA SHEET - INFECTIOUS SUBSTANCES

#### SECTION I - INFECTIOUS AGENT

**NAME:** *Micrococcus* spp.

**SYNONYM OR CROSS REFERENCE:** *M. luteus*, *M. lacticum*, *M. freundenreichii*, *M. roseus*, *M. varians*

**CHARACTERISTICS:** Gram-positive cocci, aerobic, occur in irregular masses (characteristically divide in one or more planes)

#### SECTION II - HEALTH HAZARD

**PATHOGENICITY:** Most strains are saprophytic and non-pathogenic found in soil, water, dust, and dairy products; frequently found on the skin of man and other animals; some species are opportunistic pathogens (pathogenicity is uncertain because isolations are very frequently from sites where other potential pathogens are present); may occasionally participate in infections like endocarditis; localized cutaneous infections in the immune-compromised

**EPIDEMIOLOGY:** Worldwide

**HOST RANGE:** Humans, animals

**INFECTIOUS DOSE:** Not known

**MODE OF TRANSMISSION:** Not known

**INCUBATION PERIOD:** Not known

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

#### SECTION III - DISSEMINATION

**RESERVOIR:** Widespread in nature - soil, water, dust; skin of humans and animals

**ZOONOSIS:** None

**VECTORS:** None

#### SECTION IV - VIABILITY

**DRUG SUSCEPTIBILITY:** Susceptible to antibiotics (rifampicin, gentamicin, vancomycin, teicoplanin)

## 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.

Copyright ©  
Health Canada, 2001

**Date Modified:** 2001-05-15

## Bacteria

ATCC® Number:

35339™

[Order this Item](#)

Price:

\$255.00

**Related Links ▶**[NCBI Entrez Search](#)[Make a Deposit](#)[Frequently Asked Questions](#)[Material Transfer Agreement](#)[Technical Support](#)[Related Products](#)Organism: *Escherichia coli* (Migula) Castellani and Chalmers

Designations: ECOR 20

Isolation: Steer, Bali

Depositor: H Ochman

History: ATCC&lt;&lt;--H Ochman&lt;&lt;--R. Milkman RM213I(e)

[Biosafety Level:](#) 1

Shipped: freeze-dried

Growth Conditions: [ATCC medium3](#): Nutrient agar or nutrient broth**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: reference strain [[9410](#)]

References: 9410: Ochman H, Selander RK. Standard reference strains of *Escherichia coli* from natural populations. *J. Bacteriol.* 157: 690-693, 1984. PubMed: [6363394](#)

**[BioProducts](#)**

[Cell, microbial and molecular genomics products for the life sciences](#)

- [sciences](#)

**[BioServices](#)**

[Bio-materials management; basic repository to complex partnership-level](#)

- [services](#)

**[BioStandards](#)**

[Biological Reference Material and Consensus Standards for the life science](#)

- [community](#)

[Return to Top](#)

## Bacteria

ATCC® Number:

147™

[Order this Item](#)

Price:

\$205.00

**Related Links ▶**[NCBI Entrez Search](#)[147.pdf](#)[Make a Deposit](#)[Frequently Asked Questions](#)[Material Transfer Agreement](#)[Technical Support](#)[Related Products](#)

Organism: *Micrococcus luteus* (Schroeter) Cohn deposited as *Sarcina flava* de Bary

Designations: [IFO 12992, NRRL B-2617]

Depositor: AMC - Walter Reed Army Medical Center

[Biosafety Level:](#) 1

Shipped: freeze-dried

Growth Conditions: [ATCC medium3](#): Nutrient agar or nutrient broth

**Temperature:** 30.0°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.

**[BioProducts](#)**

[Cell, microbial and molecular genomics products for the life sciences](#)

- [sciences](#)

**[BioServices](#)**

[Bio-materials management; basic repository to complex partnership-level services](#)

- [services](#)

**[BioStandards](#)**

[Biological Reference Material and Consensus Standards for the life science community](#)

- [community](#)

[Return to Top](#)

## Bacteria

ATCC® Number: **10988™** [Order this Item](#) Price: **\$205.00**

Organism: *Zymomonas mobilis* subsp. *mobilis* (Lindner) Kluver and van Niel deposited as *Pseudomonas lindneri* Kluver and Hoppenbrouwers

Designations: NRRL B-806 [ICPB 2463, NCIB 8938]

Depositor: NRRL

Biosafety Level: 1

Shipped: freeze-dried

ATCC medium948: *Zymomonas* medium

Growth Conditions: **Temperature:** 30.0°C

Duration: anaerobic

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.

Nucleotide (GenBank) : [AF281031](#) *Zymomonas mobilis* strain ATCC10988 16S ribosomal RNA gene, partial sequence.

Nucleotide (GenBank) : [X14438](#) *Zymomonas mobilis* 2.7kb plasmid DNA.

Nucleotide (GenBank) : [X17065](#) *Zymomonas mobilis* adhB gene for alcohol dehydrogenase (EC 1.1.1.1).

Nucleotide (GenBank) : [AF329200](#) *Zymomonas mobilis* strain ATCC10988 16S-23S internal transcribed spacer, complete sequence.

Cross References: Nucleotide (GenBank) : [AJ009976](#) *Zymomonas mobilis* ATCC10988 cryptic plasmid pZMO2 encoding Rep-like protein.

Nucleotide (GenBank) : [E03388](#) Xylose isomerase expression vector for *Zymomonas mobilis*.

Nucleotide (GenBank) : [AJ009975](#) *Zymomonas mobilis* ATCC10988 cryptic plasmid pZMO1 encoding Rep-like protein.

Type Strain: yes(type strain)

Comments: Effects of CaCl<sub>2</sub> on ethanol production by immobilized cells [9739]

Applications: produces ethyl alcohol ethanol [[50960](#)] [[50970](#)]

**Related Links ▶**

[NCBI Entrez Search](#)

[Make a Deposit](#)

[Frequently Asked Questions](#)

[Material Transfer Agreement](#)

[Technical Support](#)

[Related Products](#)

**BioProducts**

[Cell, microbial and molecular genomics products for the life sciences](#)

- [sciences](#)

**BioServices**

[Bio-materials management; basic repository to complex partnership-level services](#)

- [services](#)

**BioStandards**

[Biological Reference Material and Consensus Standards for the life science](#)

- [community](#)