

**THE UNIVERSITY OF WESTERN ONTARIO  
BIOLOGICAL AGENTS REGISTRY FORM**  
Approved Biohazards Subcommittee: October 14, 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 Ting Yim Lee  
DEPARTMENT UWO/Schulich/Robarts Research Institute  
ADDRESS \_\_\_\_\_  
PHONE NUMBER Office 24131. Lab 65507 (Jennifer Hadway)  
EMERGENCY PHONE NUMBER(S) \_\_\_\_\_  
EMAIL tlee@imaging.robarts.ca

Location of experimental work to be carried out: Building(s) LHRI/St Joes \_\_\_ Room(s) \_\_\_ F5-115, F5-104, F6-127a, B5-251, C0-232, all cells kept and cell work done by Dr Lisa Hoffman in F4-127a

\*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: \_\_\_\_\_  
GRANT TITLE(S): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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>
<u>Jennifer Hadway</u>	<u>jhadway@uwo.ca or lawsonimaging.ca</u>	<u>* June 13, 2005 On file</u>
<u>Lisa Hoffman</u>	<u>lhoffmann@lawsoni</u>	training?
<u>Lise Desjardins</u>	<u>ldesjar5@uw</u>	
<u>Laura Morrison</u>	<u>lmorri67@uw</u>	
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<u>Joo Ho Tai</u>	<u>jtai@imaging.robarts.ca</u>	<u>* May 28, 2002</u>
<u>Errol Stewart</u>	<u>estewart@imaging.robarts.ca</u>	<u>* June 15, 2005</u>
<u>Mark Dekaban</u>	<u>mdekaban@imaging.robarts.ca</u>	<u>* June 26, 2004</u>

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.

**Other (Rabbit):** VX2 rabbit papilloma virus – is a rabbit tumor that we maintain in the rabbit thigh muscle, then every 3 – 6 weeks we euthanize the rabbit take out small pieces of tumor and mix it with HBSS and inject into a new rabbit thigh and (usually) into the liver (separate protocol) of 2 rabbits on the same day for a liver tumor study. We do also maintain small pieces in -80C freezer but it does not grow as fast or as reliably from the freezer stock. The rabbits are incinerated and the remaining sample that is not used goes into biohazardous waste for autoclaving before disposal. For use in pending protocol 2006-078 and is carried on 2009-087

### 2.3 Established cells:

#### Human:

(1) LoVo – ATCC # CCL-229 derived from human colorectal adenocarcinoma metastatic site, ATCC biosafety level 1. This line is injected into the neck/shoulder region of nude rats and then imaged on the CT scanner for several weeks after. The rat is sent for incineration at the end of the study and the tumor is usually removed for histology and the remainder not used is disposed of in biohazardous waste for incineration. Protocol 2010-288

(2) PC3 cells - ATCC CRL-1435 human prostate tumor, ATCC biosafety level 1. This line is injected into the neck/shoulder region of nude mice for imaging purposes (uPET/CT). Again at the end of the study the tumor is removed and the mouse sent for incineration and the tumor kept for histology purposes. Protocol 2009-013

(3) NCI – H1299 – ATCC # CRL-5803 Human non-small cell lung carcinoma, ATCC biosafety level 1. This is injected into the lungs mixed with matrigel, in nude rats, is followed with uPET and CT imaging. Tumor removed at end of study for histology and rat incinerated, histology done on tumor. Protocol 2009-027

(4) HT-29 – ATCC # HTB-38 derived from human colorectal adenocarcinoma, ATCC level 1, this line is injected into the neck/shoulder region of nude rats and then imaged (CT) for several weeks after. The rat is sent for incineration at the end of the study and the tumor is removed for histology and the remainder not used is disposed of in biohazardous waste. Protocol mod going in for 2010-288 once protocol released from eSirius, is similar to Lovo cells but added this one as we had a lot of problems with the lovos growing last year

**Rodent:**

(1) C6-glioma - ATCC # CCL-107 rat brain tumor, ATCC biosafety level 1. These tumor cells are stereotactically injected into the brain of rats and CT and uPET imaging some radiotherapy done. Brain is removed at end of study for histology and rat is incinerated. Protocol 2010 -009

(2)N1-S1 Fudr - ATCC # CRL 1603 derived from the liver of Sprague Dawley rats, rat hepatoma, ATCC biolevel 1, this cell line is injected directly into the liver of SD rats to induce livers tumors which will then be imaged on a CT scanner. Following final day of scanning the liver is removed and the rat is disposed of in biohazard animal area for incineration. Is active mod in eSirius, Protocol 2007-028-01

Please include a one page research summary or teaching protocol.

See Next Page

## **Human:**

(1) LoVo – ATCC # CCL-229 derived from human colorectal adenocarcinoma metastatic site. ATCC biosafety level 1: The purpose of this study is to use a non-invasive imaging technology to examine blood vessel development during growth of tumors in animal models. This study is designed to assess the changes in blood vessels that occur with cancer progression, and cannot be conducted ex vivo or in phantoms; the use of animals will provide us with a means to refine and modify the imaging process prior to potential use in humans.

With NIRS we are trying to see if we can measure tumor physiology using 2 different optical dyes.

(2) PC3 cells - ATCC CRL-1435 human prostate tumor. ATCC biosafety level 1: The mice will have PC3 cells injected and then be checked every 4 - 5 days for tumor growth. Once the tumors are palpable we will start the imaging portion of the study. They will have CT imaging done then 2 - 3 days later microPET imaging done. Both are done with isoflurane anesthetic, and a tail vein catheter. The purpose of this study is to use imaging techniques (PET and CT) to characterize vascular changes and tumor physiology during tumor growth. Imaging can be used to non-invasively monitor many features of tumor physiology. The characterization of specific changes in tumor physiology during growth have important implications for treatment planning.

(3) NCI – H1299 – ATCC # CRL-5803 Human non-small cell lung carcinoma, ATCC biosafety level 1: This study is a precursor to a treatment model, this tumor has been grown in nude mice, we are transferring the model to nude rats to more easily enable us to (see via) CT image the tumor as it grows and the related blood flow using CT perfusion techniques. Human tumor cells from ATCC will be mixed with matrigel then injected intrathoracically in anesthetized rats. CT (lung) imaging with contrast will be done to follow the tumor growth both visually and also with CT perfusion. This will allow us to learn when the best time line for treatment will be in a follow up protocol.

(4) HT-29 – ATCC # HTB-38 derived from human colorectal adenocarcinoma, ATCC level 1: This cell line will be added protocol 2010-288 as a modification once it is released. The research objectives will be exactly the same as for the Lovo cells in the same protocol and will be used as a substitute not an addition if we are still having difficulties with the Lovo cell line.

## **Rodent:**

(1) C6-glioma - ATCC # CCL-107 rat brain tumor, ATCC biosafety level 1: This study is to see the results of radiotherapy on a C6 glioma tumor in the rat brain and also to assess the ability of the high resolution CT imaging to see changes in perfusion, blood flow etc before and after helical tomotherapy treatment. We will use a control group to compare the changes in the tumor after treatment also and for histology comparison.

We are added 2 new methods for monitoring the growth of tumors in our animals. These are carbogen-challenged perfusion imaging(DCE-CT) and 18-Fluorodeoxyglucose (FDG) positron emission tomography (FDG-PET). FDG is also a radioactive material. We are adding a new drug to treat some of the animals. This drug is called Bevacizumab (trade name Avastin), it is an antibody that inhibits the growth of blood vessels

(2)N1–S1 Fudr – ATCC # CRL 1603 derived from the liver of Sprague Dawley rats, rat hepatoma, ATCC biolevel 1: The purpose of this protocol is to cause fibrosis, cirrhosis and tumors in the rat liver and then follow the changes in the liver with contrast enhanced Computed Tomography. This will be done either with the IP injection of CCl4 or DEN given in the water that will first cause cirrhosis and eventually cause tumors to develop. Some of these rats will be followed with CT imaging and a few will be left to develop tumors that will be used to continue the tumor line in other rats. The rats will be imaged with pentobarbital anesthetic weekly with CT perfusion imaging to follow blood flow changes in the liver

## 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:

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Please attach the CFIA permit.

Please describe any CFIA permit conditions:

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1.2 Please complete the table below:

Name of Biological Agent(s)* (Be specific)	Is it known to be a human pathogen? YES/NO	Is it known to be an animal pathogen? YES/NO	Is it known to be a zoonotic agent? YES/NO	Maximum quantity to be cultured at one time? (in Litres)	Source/Supplier	PHAC or CFIA Containment Level
	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No			<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 2+ <input type="radio"/> 3
	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No			<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 2+ <input type="radio"/> 3
	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No			<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 2+ <input type="radio"/> 3
	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No			<input 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

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 checked="" type="radio"/> Yes <input type="radio"/> No	VX2 papilloma virus, grown in rabbit thigh	2009-087 & 2006-078

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

Cell Type	Is this cell type used in your work?	Specific cell line(s)*	Containment Level of each cell line	Supplier / Source of cell line(s)
Human	<input checked="" type="radio"/> Yes <input type="radio"/> No	Lovo PC3 NCI-H1299 HT-29	1 1 1 1	All ATCC
Rodent	<input checked="" type="radio"/> Yes <input type="radio"/> No	C6 – glioma N1-S1 Fudr	1 1	ATCC ATCC
Non-human primate	<input type="radio"/> Yes <input type="radio"/> No			
Other (specify)	<input type="radio"/> Yes <input type="radio"/> No			

NO NHP ?

\*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/UNKNOWN	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) of bacteria and/or cells involving viral vectors be made?

YES, complete table below  NO

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

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

4.4 Will genetic sequences from the following be involved?

- ◆ HIV  YES, please specify \_\_\_\_\_  NO
- ◆ HTLV 1 or 2 or genes from any Level 1 or Level 2 pathogens  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\_\_mice, rats and rabbits\_\_\_\_\_

6.3 AUS protocol # \_See protocol numbers on description pages 2 and 3\_\_\_\_\_

6.4 Will any of the agents listed in section 4.0 be used in live animals  YES, specify: \_n/a\_\_\_  NO

6.5 Will the agent(s) be shed by the animal:  YES  NO, please justify:  
 \_\_\_\_\_All cells are injected into the animal and are not shed by the animal once  
 injected\_\_\_\_\_

## 7.0 Use of Animal species with Zoonotic Hazards

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

7.2 Will live animals be used?  YES  No

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

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

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

## 8.0 Biological Toxins

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

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

8.3 What is the LD<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:  
\_\_\_\_\_  
\_\_\_\_\_



**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. X 1   O 2   O 2+   O 3

13.2 Has the facility been certified by OHS for this level of containment?  
 YES, date of most recent biosafety inspection: \_\_\_\_\_  
 NO, please certify  
 NOT REQUIRED for Level 1 containment *[Handwritten mark]*

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

**14.0 Procedures to be Followed**

14.1 Please describe additional risk reduction measures will be taken beyond containment level 1, 2, 2+ or 3 measures, that are unique to this agent.  
\_\_\_When all agents are handled those handling and assisting with holding animals will be wearing lab coats and gloves and with the nude animals the injections are done within a BSC so the sash protects our faces \_\_\_\_\_

14.2 Please outline what will be done if there is an exposure to the biological agents listed, such as a needlestick injury or an accidental splash:  
\_\_\_If there is an accidental needlestick or splash, if required eyewash station will be used to clear eyes/face, if needle stick then area will be run under water and made to bleed then person will go to OH&S \_\_\_\_\_

14.3 As the Principal Investigator, I will ensure that this project will follow the Western Biosafety Guidelines and Procedures Manual for Containment Level 1 & 2 Laboratories (and the Level 3 Facilities Manual for Level 3 projects). I will ensure that UWO faculty, staff and students working in my laboratory have an up-to-date Hazard Communication Form, found at <http://www.wph.uwo.ca/>

SIGNATURE *Tony M. Lee* Date: May 12 2011.

**15.0 Approvals**

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

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

3) Safety Officer for Institution where experiments will take place (if not UWO):  
SIGNATURE: *[Signature]*  
Date: May 12, 2011

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

Special Conditions of Approval:

<b>Designations:</b>	LoVo	<b>Related Links</b>
<b>Depositors:</b>	M Romsdahl	<a href="#">NCBI Entrez Search</a>
<b>Biosafety Level:</b>	1	<a href="#">Make a Deposit</a>
<b>Shipped:</b>	frozen	<a href="#">Frequently Asked Questions</a>
<b>Medium &amp; Serum:</b>	<a href="#">See Propagation</a>	<a href="#">Material Transfer Agreement</a>
<b>Growth Properties:</b>	adherent	<a href="#">Technical Support</a>
<b>Organism:</b>	<i>Homo sapiens</i> (human)	<a href="#">Related Cell Culture Products</a>
<b>Morphology:</b>	epithelial	<b>Login Required</b>
<b>Source:</b>	<b>Organ:</b> colon <b>Tumor Stage:</b> Dukes' type C, grade IV <b>Disease:</b> colorectal adenocarcinoma <b>Derived from metastatic site:</b> left supraclavicular region	<a href="#">Product Information Sheet</a>
<b>Cellular Products:</b>	carcinoembryonic antigen (CEA) 908 ng/10 exp6 cells/10 days	
<b>Permits/Forms:</b>	In addition to the <a href="#">MTA</a> mentioned above, other <a href="#">ATCC and/or regulatory permits</a> may be required for the transfer of this ATCC material. Anyone purchasing ATCC material is ultimately responsible for obtaining the permits. Please <a href="#">click here</a> for information regarding the specific requirements for shipment to your location.	
<b>Applications:</b>	transfection host ( <a href="#">Roche FuGENE® Transfection Reagents</a> )	
<b>Tumorigenic:</b>	Yes	
<b>Oncogene:</b>	myc +; myb +; ras +; fos +; p53 +; sis -; abl -; ros -; src -	
<b>Antigen Expression:</b>	HLA A11, B15, B17, Cw1, Cw3; blood type B	
<b>DNA Profile (STR):</b>	Amelogenin: XY CSF1PO: 10,11,13,14 D13S317: 8, 11 D16S539: 9, 12 D5S818: 11, 12, 13 D7S820: 9.3,10, 11 THO1: 9.3 TPOX: 8,9 vWA: 17,18	<b>Info on Cell Line(s)</b>
<b>Cytogenetic Analysis:</b>	The stemline chromosome number is hyperdiploid with the 2S component occurring at about 2.7% and 3 marker chromosomes were common to all S metaphases. Karyotypes were generally homogeneous and stable.	
<b>Isoenzymes:</b>	ES-D, 1 G6PD, B PGD, A PGM1, 2 PGM3, 1-2	
<b>Age:</b>	56 years	
<b>Gender:</b>	male	
<b>Comments:</b>	LoVo was initiated in 1971 from a fragment of a metastatic tumor nodule in the left supraclavicular region of a 56-year-old Caucasian male patient with a histologically proven diagnosis of adenocarcinoma of the colon. [1049] The cells are negative for expression of CSAp (CSAp-) and colon antigen 3. The line is positive for expression of c-myc, K-ras, H-ras, N-ras, Myb, sis and fos oncogenes. [22861] Myb, and fos oncogenes. [22861] N-myc and sis oncogene expression were not detected. [22861] Tumor specific nuclear matrix proteins CC-3 and CC-4 are expressed. [23341]	
<b>Propagation:</b>	<b>ATCC complete growth medium:</b> The base medium for this cell line is ATCC-formulated F-12K Medium, Catalog No. 30-2004. To make the complete growth medium, add the following components to the base medium: fetal bovine serum to a final concentration of 10%. <b>Temperature:</b> 37.0°C	
<b>Subculturing:</b>	<b>Subcultivation Ratio:</b> A subcultivation ratio of 1:3 to 1:10 is recommended <b>Medium Renewal:</b> 2 to 3 times per week Remove medium, and rinse with 0.25% trypsin, 0.03% EDTA solution. Remove the solution and add an additional 1 to 2 ml of trypsin-EDTA solution. Allow the flask to sit at room temperature (or at 37C) until	

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<b>Designations:</b>	PC-3
<b>Depositors:</b>	ME Kaighn
<b>Biosafety Level:</b>	1
<b>Shipped:</b>	frozen
<b>Medium &amp; Serum:</b>	<a href="#">See Propagation</a>
<b>Growth Properties:</b>	adherent (The cells form clusters in soft agar and can be adapted to suspension growth)
<b>Organism:</b>	<i>Homo sapiens</i> (human)
<b>Morphology:</b>	epithelial 
<b>Source:</b>	<b>Organ:</b> prostate <b>Tumor Stage:</b> grade IV <b>Disease:</b> adenocarcinoma <b>Derived from metastatic site:</b> bone
<b>Permits/Forms:</b>	In addition to the <a href="#">MTA</a> mentioned above, other <a href="#">ATCC and/or regulatory permits</a> may be required for the transfer of this ATCC material. Anyone purchasing ATCC material is ultimately responsible for obtaining the permits. Please <a href="#">click here</a> for information regarding the specific requirements for shipment to your location.
<b>Applications:</b>	transfection host ( <a href="#">Nucleofection technology from Lonza Roche FuGENE® Transfection Reagents</a> )
<b>Tumorigenic:</b>	Yes
<b>Antigen Expression:</b>	HLA A1, A9
<b>DNA Profile (STR):</b>	Amelogenin: X CSF1PO: 11 D13S317: 11 D16S539: 11 D5S818: 13 D7S820: 8,11 THO1: 6,7 TPOX: 8,9 vWA: 17
<b>Cytogenetic Analysis:</b>	The line is near-triploid with a modal number of 62 chromosomes. There are nearly 20 marker chromosomes commonly found in each cell; and normal N2, N3, N4, N5, N12, and N15 are not found. No normal Y chromosomes could be detected by Q-band analysis.
<b>Age:</b>	62 years adult
<b>Gender:</b>	male
<b>Ethnicity:</b>	Caucasian
<b>Comments:</b>	The PC-3 was initiated from a bone metastasis of a grade IV prostatic adenocarcinoma from a 62-year-old male Caucasian. [22363] The cells exhibit low acid phosphatase and testosterone-5-alpha reductase activities.
<b>Propagation:</b>	<b>ATCC complete growth medium:</b> The base medium for this cell line is ATCC-formulated F-12K Medium, Catalog No. 30-2004. To make the complete growth medium, add the following components to the base medium: fetal bovine serum to a final concentration of 10%. <b>Atmosphere:</b> air, 95%; carbon dioxide (CO <sub>2</sub> ), 5% <b>Temperature:</b> 37.0°C
<b>Subculturing:</b>	<b>Protocol:</b> <ol style="list-style-type: none"><li>1. Remove and discard culture medium.</li><li>2. Briefly rinse the cell layer with 0.25% (w/v) Trypsin- 0.53 mM EDTA solution to remove all traces of serum that contains trypsin inhibitor.</li><li>3. Add 2.0 to 3.0 ml of Trypsin-EDTA solution to flask and observe cells under an inverted microscope until cell layer is dispersed (usually within 5 to 15 minutes). Note: To avoid clumping do not agitate the cells by hitting or shaking the flask while waiting for the cells to detach. Cells that are difficult to detach may be placed at 37°C to facilitate dispersal.</li><li>4. Add 6.0 to 8.0 ml of complete growth medium and aspirate cells by gently pipetting.</li></ol>

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<b>Designations:</b>	NCI-H1299
<b>Depositors:</b>	AF Gazdar, JD Minna
<b>Biosafety Level:</b>	1
<b>Shipped:</b>	frozen
<b>Medium &amp; Serum:</b>	<a href="#">See Propagation</a>
<b>Growth Properties:</b>	adherent
<b>Organism:</b>	<i>Homo sapiens</i> (human)
<b>Morphology:</b>	epithelial
<b>Source:</b>	<b>Organ:</b> lung <b>Disease:</b> carcinoma; non-small cell lung cancer <b>Derived from metastatic site:</b> lymph node
<b>Cellular Products:</b>	neuromedin B
<b>Permits/Forms:</b>	In addition to the <a href="#">MTA</a> mentioned above, other <a href="#">ATCC and/or regulatory permits</a> may be required for the transfer of this ATCC material. Anyone purchasing ATCC material is ultimately responsible for obtaining the permits. Please <a href="#">click here</a> for information regarding the specific requirements for shipment to your location.
<b>Restrictions:</b>	The line is available with the following restrictions: 1. This cell line was deposited at the ATCC by Dr. A. Gazdar and Dr. J. Minna and is provided for research purposes only. Neither the cell line nor products derived from it may be sold or used for commercial purposes. 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 service to the research community. They are provided without warranty of merchantability or fitness for a particular purpose or any other warranty, expressed or implied. 2. Any proposed commercial use of these cells, or their products must first be negotiated with the University of Texas Southwestern Medical Center at Dallas, 5323 Harry Hines Blvd., Dallas, Texas 75235. Telephone (214) 699-8056, FAX (214) 688-7233.
<b>Applications:</b>	transfection host ( <a href="#">Nucleofection technology from Lonza Roche FuGENE® Transfection Reagents</a> )
<b>DNA Profile (STR):</b>	Amelogenin:X CSF1PO:12 D13S317:12 D16S539:12,13 D5S818:11 D7S820:10 THO1:6,9,3 TPOX:8 vWA: 16,17,18
<b>Age:</b>	43 years adult
<b>Gender:</b>	male
<b>Ethnicity:</b>	Caucasian
<b>Comments:</b>	The cells have a homozygous partial deletion of the p53 protein, and lack expression of p53 protein. They reported to be able to synthesize the peptide neuromedin B (NMB) at 0.1 pmol/mg protein, but not the gastrin releasing peptide (GRP).
<b>Propagation:</b>	<b>ATCC complete growth medium:</b> The base medium for this cell line is ATCC-formulated RPMI-1640 Medium, Catalog No. 30-2001. To make the complete growth medium, add the following components to the base medium: fetal bovine serum to a final concentration of 10%. <b>Temperature:</b> 37.0°C <b>Atmosphere:</b> air, 95%; carbon dioxide (CO <sub>2</sub> ), 5%
<b>Subculturing:</b>	<b>Protocol:</b> <ol style="list-style-type: none"> <li>1. Remove and discard culture medium.</li> <li>2. Briefly rinse the cell layer with 0.25% (w/v) Trypsin - 0.53 mM EDTA solution to remove all traces of serum that contains trypsin inhibitor.</li> <li>3. Add 2.0 to 3.0 ml of Trypsin-EDTA solution to flask and observe cells under an inverted microscope until cell layer is dispersed (usually within 5 to 15 minutes). Note: To avoid clumping do not agitate the cells by hitting or shaking the flask while waiting for the cells to detach. Cells that are difficult to detach may be placed at 37C to facilitate dispersal.</li> <li>4. Add 2.0 to 3.0 ml of complete growth medium and resuspend</li> </ol>

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<b>Designations:</b>	HT-29
<b>Depositors:</b>	J Fogh
<b>Biosafety Level:</b>	1
<b>Shipped:</b>	frozen
<b>Medium &amp; Serum:</b>	<a href="#">See Propagation</a>
<b>Growth Properties:</b>	adherent
<b>Organism:</b>	<i>Homo sapiens</i> (human)
<b>Morphology:</b>	epithelial
	
<b>Source:</b>	<b>Organ:</b> colon <b>Disease:</b> colorectal adenocarcinoma
<b>Cellular Products:</b>	secretory component of IgA; carcinoembryonic antigen (CEA); transforming growth factor beta binding protein; mucin
<b>Permits/Forms:</b>	In addition to the <a href="#">MTA</a> mentioned above, other <a href="#">ATCC and/or regulatory permits</a> may be required for the transfer of this ATCC material. Anyone purchasing ATCC material is ultimately responsible for obtaining the permits. Please <a href="#">click here</a> for information regarding the specific requirements for shipment to your location.
<b>Restrictions:</b>	The cells are distributed for research purposes only. The Memorial Sloan-Kettering Cancer Center releases the line subject to the following: 1.) The cells or their products must not be distributed to third parties. Commercial interests are the exclusive property of Memorial Sloan-Kettering Cancer Center. 2.) Any proposed commercial use of these cells must first be negotiated with The Director, Office of Industrial Affairs, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, NY 10021; phone (212) 639-6181; FAX (212) 717-3439.
<b>Isolation:</b>	<b>Isolation date:</b> 1964
<b>Applications:</b>	transfection host ( <a href="#">Nucleofection technology from Lonza</a> <a href="#">Roche FuGENE® Transfection Reagents</a> )
<b>Receptors:</b>	human adrenergic alpha2A [ <a href="#">23560</a> ] urokinase receptor (u-PAR) vitamin D (moderate expression) urokinase receptor (u-PAR); vitamin D (moderate expression)
<b>Tumorigenic:</b>	Yes
<b>Oncogene:</b>	myc +; ras +; myb +; fos +; sis +; p53 +; abl -; ros -; src -
<b>Antigen Expression:</b>	Blood Type A; Rh+; HLA A1, A3, B12, B17, Cw5
<b>DNA Profile (STR):</b>	Amelogenin: X CSF1PO: 11,12 D13S317: 11,12 D16S539: 11,12 D5S818: 11,12 D7S820: 10 THO1: 6,9 TPOX: 8,9 vWA: 17,19
<b>Cytogenetic Analysis:</b>	modal number = 71; range = 68 to 72. The stemline chromosome number is hypertriploid with the 2S component occurring at 2.4%. Seventeen marker chromosomes are found in most metaphases, generally in single copy per chromosome. The marker designations are: M1p-(=t(3p-;?) with a deleted short arm), t(7q;?), t(10q;?), i(13q), 19q+a; M6, ?t(8q;9q-), ?Xp, M9, 6q+, t(13;?)a, t(13;?)b, 19q+b, M14, M15, 15p+, and Xq-. Chromosome 13 is nullisomic and chromosomes 8 and 14 are generally monosomic. No Y chromosome was detected by QM band analysis.
<b>Isoenzymes:</b>	AK-1, 1 ES-D, 1 G6PD, B GLO-I, 1-2 Me-2, 1 PGM1, 1-2 PGM3, 1-2

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<b>Designations:</b>	C6
<b>Depositors:</b>	G Sato
<b>Biosafety Level:</b>	1
<b>Shipped:</b>	frozen
<b>Medium &amp; Serum:</b>	<a href="#">See Propagation</a>
<b>Growth Properties:</b>	adherent
<b>Organism:</b>	Rattus norvegicus (rat)
<b>Morphology:</b>	fibroblast
<b>Source:</b>	Organ: brain Disease: glioma Cell Type: glial cell;
<b>Cellular Products:</b>	S-100 protein; produce glyceryl phosphate dehydrogenase in response to glucocorticoids; somatotrophin
<b>Permits/Forms:</b>	In addition to the <a href="#">MTA</a> mentioned above, other <a href="#">ATCC and/or regulatory permits</a> may be required for the transfer of this ATCC material. Anyone purchasing ATCC material is ultimately responsible for obtaining the permits. Please <a href="#">click here</a> for information regarding the specific requirements for shipment to your location.
<b>Applications:</b>	transfection host ( <a href="#">Nucleofection technology from Lonza Roche FuGENE® Transfection Reagents</a> )
<b>Receptors:</b>	glucocorticoid
<b>Virus Resistance:</b>	poliovirus 3
<b>Cytogenetic Analysis:</b>	Stemline number is diploid. Karyotype is stable within the stemline number and is that of a normal male. Three cells with breaks; one with a secondary constriction, one with a dicentric, one with a rearrangement and four with terminal or centromere associations.
<b>Comments:</b>	The glial cell strain, C6, was cloned from a rat glial tumor induced by N-nitrosomethylurea by Benda et al. after a series of alternate culture and animal passages [PubMed: 4873531]. S-100 production increases ten fold as cells grow from low density to confluency.
<b><u>Propagation:</u></b>	<b>ATCC complete growth medium:</b> The base medium for this cell line is ATCC-formulated F-12K Medium, Catalog No. 30-2004. To make the complete growth medium, add the following components to the base medium: fetal bovine serum to a final concentration of 2.5%; horse serum to a final concentration of 1%. <b>Atmosphere:</b> air, 95%; carbon dioxide (CO <sub>2</sub> ), 5% <b>Temperature:</b> 37.0°C
<b>Subculturing:</b>	<b>Protocol:</b> <ol style="list-style-type: none"> <li>1. Remove and discard culture medium.</li> <li>2. Briefly rinse the cell layer with 0.25% (w/v) Trypsin - 0.53 mM EDTA solution to remove all traces of serum which contains trypsin inhibitor.</li> <li>3. Add 2.0 to 3.0 ml of Trypsin-EDTA solution to flask and observe cells under an inverted microscope until cell layer is dispersed (usually within 5 to 15 minutes). Note: To avoid clumping do not agitate the cells by hitting or shaking the flask while waiting for the cells to detach. Cells that are difficult to detach may be placed at 37C to facilitate dispersal.</li> <li>4. Add 6.0 to 8.0 ml of complete growth medium and aspirate cells by gently pipetting.</li> <li>5. Add appropriate aliquots of the cell suspension to new culture vessels.</li> <li>6. Incubate cultures at 37C.</li> </ol> <p><b>Subcultivation Ratio:</b> A subcultivation ratio of 1:2 to 1:3 is recommended <b>Medium Renewal:</b> 2 to 3 times per week</p>
<b>Preservation:</b>	<b>Freeze medium:</b> culture medium, 95%; DMSO, 5% <b>Storage temperature:</b> liquid nitrogen vapor phase
<b>Related Products:</b>	Recommended medium (without the additional supplements or serum described under ATCC Medium): <a href="#">ATCC 30-2004</a> recommended serum: <a href="#">ATCC 30-2020</a> recommended serum: <a href="#">ATCC 30-2040</a> 0.25% (w/v) Trypsin - 0.53 mM EDTA in Hank' BSS (w/o Ca <sup>++</sup> ,

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## Product Description

Before submitting an order you will be asked to read and accept the terms and conditions of ATCC's [Material Transfer Agreement](#) or, in certain cases, an MTA specified by the depositing institution.

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### Cell Biology

<b>ATCC® Number:</b>	CRL-1603™	<a href="#">Order this Item</a>
<b>Designations:</b>	N1-S1 Fudr	
<b>Depositors:</b>	JE Becker	
<b><u>Biosafety Level:</u></b>	1	
<b>Shipped:</b>	frozen	
<b>Medium &amp; Serum:</b>	<a href="#">See Propagation</a>	
<b>Growth Properties:</b>	suspension	
<b>Organism:</b>	Rattus norvegicus (rat)	

**Price:** \$429.00

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### Morphology:

**Source:**  
**Organ:** liver  
**Strain:** Sprague-Dawley  
**Disease:** hepatoma; Novikoff hepatoma

**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.

**Gender:** male

**Comments:** The cells are resistant to 5-fluoro-2'-deoxyuridine (FUdR) at 0.05 mM and to 5-fluorouracil.  
This line is derivative of N1-S1 (ATCC [CRL-1604](#)).

**Propagation:** **ATCC complete growth medium:** The base medium for this cell line is ATCC-formulated Dulbecco's Modified Eagle's Medium, Catalog No. 30-2002. To make the complete growth medium, add the following components to the base medium:

- 10% fetal bovine serum
- 0.05 mM FUdR
- 0.1% pluronic F68

### Subculturing:

**Medium Renewal:** Twice per week  
Cultures can be maintained by addition or replacement of fresh medium. Start cultures at 4 X 10 exp4 viable cells/ml and subculture at 1 X 10 exp6 cells/ml (about 3 days). Cells can be grown in Florence flasks on a rotary shaker at 180 to 190 RPM.

### References:

1084: Potter VR, Morse PA Jr.. Pyrimidine metabolism in tissue culture cells derived from rat hepatomas. I. Suspension cell cultures derived from the Novikoff hepatoma. Cancer Res. 25: 499-508, 1965. PubMed: [14297488](#)  
 26107: Cory JG, et al. Evidence for role of purine nucleoside phosphorylase in sensitivity of Novikoff hepatoma cells to 5-fluorouracil. Adv. Enzyme Regul. 15: 153-166, 1976. PubMed: [197803](#)

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VX2 info

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

**Subject:**Re: Containment level request - Cotton rabbit papilloma virus

**Date:**Mon, 11 Jan 2010 13:48:14 -0500

**From:**Permit-Permis <permitpermis@phac-aspc.gc.ca>

**To:**Jennifer Stanley <jstanle2@uwo.ca>

Dear Jennifer Stanley

This is a RG1 human pathogen you can work in a CL1. CFIA may have other requirements.

Regards

Josee DaviesA/Regulatory Technologist/ technologiste en réglementation  
Pathogen Regulation Directorate (formerly Office of Laboratory  
Security) /

Direction de la réglementation des agents pathogènes (anciennement le  
Bureau de la sécurité des laboratoires)

Public Health Agency of Canada/ Agence de santé publique du Canada

100 ch. Colonnade Rd. AL: 6201A Ottawa, Ontario, Canada K1A 0K9

Tel: (613) 957-1779

Fax: (613) 941-0596

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

**Subject:**Re: Containment level request - Cotton  
rabit papilloma virus

**Date:**Tue, 12 Jan 2010 09:58:52 -0500

**From:**ImportZoopath

<ImportZoopath@inspection.gc.ca>

**To:**Jennifer Stanley <jstanle2@uwo.ca>

Level 2.

Cinthia Labrie

Office of Biohazard Containment & Safety, CFIA | Bureau du  
confinement des biorisques et de la sécurité, ACIA  
Government of Canada | Gouvernement du Canada  
59 Camelot, Ottawa ON K1A0Y9  
Phone/Tél.: (613) 221-7068  
Fax/ Téléc.: (613) 228-6129  
ImportZoopath@inspection.gc.ca

You will find an updated CL2 Inspection Checklist in the Forms and  
Checklists section of our website;  
<http://www.inspection.gc.ca/english/sci/bio/bioe.shtml> /  
Vous trouverez une nouvelle version de la liste de vérification NC2  
dans la section Listes de vérification et formulaires de notre site  
internet; <http://www.inspection.gc.ca/francais/sci/bio/biof.shtml>

>>> Jennifer Stanley <jstanle2@uwo.ca> 2010-01-12 09:58 >>>  
Sorry...which containment level is it?

On 1/12/2010 9:57 AM, ImportZoopath wrote:

> Hi Ms. Stanley,

>

> My database list the Shope / Rabbit papilloma virus as a containment  
> level organism affecting rabbit skin.

>

> Have a nice day,

>

> Cinthia Labrie

>

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