**Subject:** Biological Agents Registry Form: Ferguson
**From:** Peter Ferguson <peter.ferguson@uwo.ca>
**Date:** Thu, 26 Jan 2012 13:52:43 -0500
**To:** Jennifer Stanley <jstanle2@uwo.ca>

New Info

Hello, Jennifer,
As you may have guessed from my last email, I was rather disappointed in the response from the Biohazard review committee. Upon closer examination of my submission, it is even more obvious to me that whatever reviewer raised those questions did not fully read my application. Below I wish to respond to each of the questions/requests that you sent me (every single line is there below). In light of these responses, I respectfully request that I be given the go-ahead to print off my final version, send it to Gail Ryder for her signature, and send it to you for final signing.
I will add that I appreciate your effort to append the ATCC information sheet for each of the cell lines. I think that we should be able to design a process that would make these accessible to a reviewer by simply using a hyperlink, and asking the submitting author to attach them as such, using a table such as the one that I have designed and circulated among our researchers to ponder. (I can send you a draft version if you wish to see it.)
I look forward to hearing from you.
With best regards,
Pete Ferguson

Reviewer: Is the lab infecting prostate cells?
Response: The following is a direct quote from the application: "Normal, primary prostate cells, immortalized by a single genetic change [transfection with human telomerase catalytic subunit (hTERT) to mimic the obligatory constitutive telomerase expression found in cancer cells]." I do not know how to make this any more clear.

Reviewer: If so, what virus is used and what gene is being transduced?
Response: This question is answered in its entirety in section 4.3.
The amount of detail that the author is able to provide is limited by the page restriction on the application, especially since the lab undertakes several different projects. Since a non-scientist may not have appreciated that the lentivirus described in section 1.0 was for this purpose, and/or since that reviewer did not read the application in full, missing section 4.3, I have altered the section that I quoted above to read: " Normal, primary prostate cells, immortalized by a single genetic change [transfection, using a commercially obtained, premade, non-propagatable lentivirus, with human telomerase catalytic subunit (hTERT) to mimic the obligatory constitutive telomerase expression found in cancer cells]"

Reviewer: A statement should be made that the virus will not be propagated.
Response: Quote from section 1.1: "This virus is also designed to be non-replicative in human cells"
Quote from section 3.1: "It will be infected with a non-replicative lentivirus, which is considered non-infectious"
Quote from section 4.5: "The lentivirus is replication defective. "
Since this is not sufficiently clear to one of the reviewers, I have added the following to those 3 sections: "The lentivirus will not be propogated in the laboratory."

Reviewer: The information on mycoplasma is unnecessary.
Response: If I had not put that information in the application, I would absolutely guarantee that somebody would have asked me to put in in. For completeness, and

since it causes no harm, it is staying.

Reviewer: The statement about ATCC in Section 2.3 needs to be deleted as ATCC does provide biosafety levels (see www.atcc.org or the information attached to the protocol).
Response: The author became aware of this information after the last submission. The passage has been altered appropriately. Biosafety information about the cell lines is attached as an appendix.

Reviewer: If hTERT is being transduced, which is an oncogene, Level 3 may be required.
The handling and infection process is Level 3.
Response: An oncogene is defined as a gene that, when overexpressed in mammalian cells (by itself, without overexpression of other genes) allows those cells to form xenograft tumours in mice. This does not apply to a gene that is overexpressed in cancer cells and contributes to some aspect of malignancy, but itself in not oncogenic. hTERT is not an oncogene, as it is not capable of transforming cells to a malignant phenotype. Even combined with known carcinogenic alterations, hTERT overexpression is still not capable of fully transforming epithelial cells [Cancer Res. 71(7): 2541-2549, 2011]. Yes, it may alter the ability of the cells to respond to differentiation signals, but it does not confer tumourigenicity [Eur Urol. 60(1): 141-149, 2011; Oncogene 25(36): 5037-5045, 2006 ]. The virus is handled at Level II+, according to the Health Canada regulations, even though it is not capable of propagation, and once the cells are transfected with the gene, they can be handled in regular level II conditions.

Reviewer: Is the researcher using HEK 293T or HEK 293? The Committee is not clear on the source of the T-antigen.
Response: The following is a direct quote from my previous review, coming from a reviewer: "This section needs to be properly completed as HeLa cells have HPV, HEK293T cells have both E1A and Tag and MEF-1 has T Ag. The PI is correct - his Ad will also have E1A and therefore needs to be indicated. The PI is correct about the plasmid vector. The promoter is of no consequence or relevance to this section." That is why the section on T-antigen was added. This review could be rcycled in perpetuity. I think that it would be best to leave this in for completeness. If there is no T-antigen, what harm could there be in leaving this passage in?

Because any changes are due to items that were overlooked by the reviewers or of a very minor nature, I request that the BARF be approved, tentatively, awaiting the completed, signed copy with the changes indicated above. It would detrimental to the advancement of science at Western to send this back for another review.

Respectfully submitted,
Peter J. Ferguson, Ph. D.

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Peter J. Ferguson, Ph. D.
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**THE UNIVERSITY OF WESTERN ONTARIO**
**BIOLOGICAL AGENTS REGISTRY FORM**
**Approved Biohazards Subcommittee: October 14, 2010**
**Biosafety Website: www.uwo.ca/humanresources/biosafety/**

This form must be completed by each Principal Investigator holding a grant administered by the University of Western Ontario (UWO) or in charge of a laboratory/facility where the use of Level 1, 2 or 3 biological agents is described in the laboratory or animal work proposed. The form must also be completed if any work is proposed involving animals carrying zoonotic agents infectious to humans or involving plants, fungi, or insects that require Public Health Agency of Canada (PHAC) or Canadian Food Inspection Agency (CFIA) permits.

This form must be updated at least every 3 years or when there are changes to the biological agents being used.

Containment Levels will be established in accordance with Laboratory Biosafety Guidelines, 3rd edition, 2004, Public Health Agency of Canada (PHAC) or Containment Standards for Veterinary Facilities, 1st edition 1996, Canadian Food Inspection Agency (CFIA).

Completed forms are to be returned to Occupational Health and Safety, (OHS), (Support Services Building, Room 4190) for distribution to the Biohazards Subcommittee. For questions regarding this form, please contact the Biosafety Officer at extension 81135 or biosafety@uwo.ca. If there are changes to the information on this form (excluding grant title and funding agencies), contact Occupational Health and Safety for a modification form. See website: www.uwo.ca/humanresources/biosafety

| | |
|---|---|
| PRINCIPAL INVESTIGATOR | Peter J Ferguson |
| DEPARTMENT | Oncology |
| ADDRESS | Cancer Research Labs, LRCP-VRL, LHSC-Vic |
| PHONE NUMBER | 53602 |
| EMERGENCY PHONE NUMBER(S) | (H) 519-453-2218; (C) 519-630-1546 |
| EMAIL | Peter.Ferguson@uwo.ca |

Location of experimental work to be carried out: Building(s) _LRCP, VRL__ Room(s)_A4-114, A4-910 (adenovirus), A4-822 (lentivirus), A7-132 (animals)_____

*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:_Medical Oncology Research Fund_____
GRANT TITLE(S): _Molecular Basis of the Anticancer Activity of the Antidiabetic Drug Metformin; Investigation of Antisense Oligonucleotides to Sensitize Tumour Cells to Anticancer Chemotherapy Drugs

List all personnel working under Principal Investigator's supervision in this location:

| Name | UWO E-mail Address | Date of Biosafety Training |
|---|---|---|
| Rene Figueredo | rfp1975@yahoo.com | July 5, 2011 |
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**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.**

Biological Agent: Human Cancer Cell Lines (list attached)
Usage – live cells maintained in cell culture incubator, and handled in laminar flow BSC

- Cells may also be inoculated into mice, which will be undertaken in a BSC in a dedicated Level II animal-handling facility in the VRL vivarium.

Storage - Stored in freezer bank (-80 and -150 freezers)
Disposal – liquids that contain cells are bleached and flushed down drain

- Plasticware that has been in contact with cells is disposed into biohazard waste boxes (lined with a yellow bag) and disposed by licensed waste carrier, SteriCycle (autoclaved and/or incinerated before disposing lin land-fill)

Biological Agent: Lentivirus (pLenti-III-HA)
Usage – virus handled in Level II+ biohazard facility, in a laminar flow BSC, and maintained in a dedicated cell culture incubator. These are maintained in a locked, limited-access cell culture room. Users must wear dedicated PPE, and all material that contacts the virus must be thoroughly decontaminated prior to disposal or transfer to another facility.
The virus is purchased from Applied Biological Materials Inc. This company is in Canada, and an import permit is not required to purchase the virus. It is a non-replicative virus, and is not capable of being propagated in the laboratory. Therefore, it will not be propagated in the laboratory. The virus will be used to transfect an h-TERT-expressing plasmid into cells. This only partially transforms cells. If the cells were implanted into animals, the cells would not be capable of forming a tumour. The non-replicative virus would not replicate in the animal. There is no plan to inject lentivirus –infected cells into animals.
The virus is provided at a concentration of $1.85 \times 10^9$ particles per ml. It is diluted to 1 ml of $10^8$/ml prior to use, in cell culture medium, and is added in a volume of 1 ml or less to 1 ml of cultured cells in a well of a 24-well plate. There may be up to 9 wells infected at a time.
It does not appear from the map provided that this is a self-inactivating (SIN) virus. However, it is not capable of replication without assistance. It will be infected into primary prostate epithelial cells.
**The investigator will not be attempting to propagate the virus in any manner.**
Storage – virus kept in culture medium in -80 freezer
Disposal – virus in liquid is thoroughly bleached prior to flushing down a drain

- Plasticware that has contacted virus is thoroughly bleached, then autoclaved immediately prior to disposal in a biohazardous waste container.
- The operational procedures described above are in compliance with the university guidelines described in the document located at:

http://www.uwo.ca/humanresources/docandform/docs/healthandsafety/biosafety/viral_vector_policy.pdf

Biological Agent: Adenovirus
Usage – virus handled in Level II biohazard facility, in a laminar flow BSC, and maintained in a dedicated cell culture incubator. Users must wear PPE, and all material that contacts the virus must be thoroughly decontaminated prior to disposal or transfer to another facility. This virus is already in the lab, and was obtained from a laboratory in the U. S. through the appropriate channels, using a Health Canada import permit.
Storage – virus kept in culture medium in -80 freezer
Disposal – virus in liquid is thoroughly bleached prior to flushing down a drain

- Plasticware that has contacted virus is bleached, then autoclaved immediately prior to disposal in a biohazardous waste container.
- There is no plan to inject adenovirus into animals.
- The operational procedures described above are in compliance with the university guidelines described in the document located at:

http://www.uwo.ca/humanresources/docandform/docs/healthandsafety/biosafety/viral_vector_policy.pdf

Possible Biological Agent: Mycoplasma

Many cultured cell lines carry mycoplasma, and so it is assumed that any cell line could be carrying this bacteria. The methodology described above for handling of cultured cell lines provides the appropriate methodology for usage, storage, and disposal of this organism should a cell line happen to be contaminated.

The investigator does not intend to import, propagate, or work with any other virus, plasmid, or bacteria.

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

**PLEASE NOTE THAT THE FOLLOWING INFORMATION IS STRICTLY CONFIDENTIAL**

The incidence of prostate cancer could be greatly reduced with a convenient and safe preventive intervention. The overall goal of this research program is to generate a dietary supplement that will prevent the development of prostate cancer. Our laboratory has demonstrated *in vivo* and *in vitro* that isolates from cranberry extracts, enriched in flavonoids and other polyphenols, kill cancer cells. In particular, treatment with cranberry extracts inhibited the growth of human prostate tumour explants in mice. This specific project will determine if cranberry extracts can prevent the early steps of oncogenic progression of non-cancerous human prostate cells. Normal, primary prostate cells, immortalized by a single genetic change [transfection with human telomerase catalytic subunit (hTERT) to mimic the obligatory constitutive telomerase expression found in cancer cells] can spontaneously undergo "epithelial to mesenchymal transition" (EMT), an important step in malignant transformation. As a collaborative team of scientists, a pharmacologist, and a uroncology surgeon, we will establish this model system and study the effect of cranberry on the process of malignant progression. We **hypothesize** that cranberry extracts Fr6 and PACs can prevent EMT of prostate epithelial cells and inhibit malignant activities of cells that acquire the mesenchymal phenotype.
**Objectives and Methods:** (1) *To generate a stock of flavonoid-rich cranberry extracts,* using established chromatographic procedures. (2) *To generate primary and immortalized cultures of prostate epithelial cells.* Normal prostate cells, propagated from surgical specimens, will be immortalized by transfection with hTERT and cultured. (3) *To determine if the presence of cranberry extracts can prevent malignant progression (EMT) of primary prostate cultures.* Markers of mesenchymal cells will be assayed (increased p16 and N-cadherin, decreased E-cadherin). (4) *To determine if cranberry extracts can inhibit malignant properties of transformed prostate cells*, namely migration and invasion of the mesenchymal cells generated above in non-cranberry-treated cultures.

Metformin is currently being investigated for its potential antineoplastic activity. This research has been spurred in part by the observation that patients receiving metformin for control of diabetes have lower rates of malignancy than diabetic patients on insulin or sulfonylureas. Many researchers have also observed growth inhibition in vitro in many cell lines with metformin. The anti-neoplastic mechanism of action of metformin is not well understood. Putative mechanisms include changes in insulin and insulin-like receptor signaling, indirect inhibition of mammalian target of rapamycin, inhibition of her-2 neu signaling and antiangiogenic effects. The principal target of metformin is likely to be adenosine monophosphate kinase, a regulator of cell metabolism. We therefore seek to study the potential mechanism of anti-neoplastic action of metformin, looking for molecular predictors of activity in vitro. We will test our hypothesis using the cell lines A549b and SK-MEL-5 in which we see the most promising anti-tumour activity.

## 1.0 Microorganisms

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

Do you use microorganisms that require a permit from the CFIA? X YES O NO
If YES, please give the name of the species. _lentivirus, adenovirus_____
What is the origin of the microorganism(s)? ___obtained from commercial sources_____
Please describe the risk (if any) of escape and how this will be mitigated: ___If handled extremely carelessly, a virus particles could become airborne. This risk is mitigated by handling inside of a laminar flow BSC._ Liquids and plasticware that contact virus particles are thoroughly bleached and/or washed with 70%____ ethanol, and then autoclaved to prevent any live virus from becoming airborne or able to spread by contact.
Please attach the CFIA permit.
Please describe any CFIA permit conditions:
_The lentivirus was obtained from a Canadian supplier, and therefore no CFIA permit was required to _ obtain it. This virus is also designed to be non-replicative in human cells, and therefore is not a pathogen unless genetically engineered to do so. A copy of the permit to import adenovirus is enclosed, as well as a copy of the Level II certification.

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 |
|---|---|---|---|---|---|---|
| Lentivirus | X Yes<br>O No | X Yes<br>O No | O Yes<br>X No | 0.001 | Applied Biological Materials Inc | O 1 O 2<br>X 2+ O 3 |
| Adenovirus | X Yes<br>O No | X Yes<br>O No | O Yes<br>X No | 0.010 | Univ. of California | O 1 X 2<br>O 2+ O 3 |
| | O Yes<br>O No | O Yes<br>O No | O Yes<br>O No | | | O 1 O 2<br>O 2+ O 3 |
| | O Yes<br>O No | O Yes<br>O No | O Yes<br>O No | | | O 1 O 2<br>O 2+ O 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? X YES O 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 | X Yes O No | prostate | Not applicable |
| Rodent | O Yes X No | | |
| Non-human primate | O Yes X No | | |
| Other (specify) | O Yes X No | | |

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

| Cell Type | Is this cell type used in your work? | Specific cell line(s)* | Containment Level of each cell line | Supplier / Source of cell line(s) |
|---|---|---|---|---|
| Human | O Yes O No | | | |
| Rodent | O Yes O No | | | |
| Non-human primate | O Yes O No | | | |
| Other (specify) | O Yes O No | | | |

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

The information from ATCC does not provide any information that indicates whether the cell lines are considered level I, II or otherwise. ATCC will also not provide any information as to whether the cell lines contain mycoplasma, or if they express virus particles. For these reasons, all cell lines are handled under the assumption that they are Level II and may contain mycoplasma and may express virus particles. The ATCC information sheets do not contain any information that suggests how the cell lines should be handled safely, or what to do should any accidentally be ingested or exposed to skin or eyes. Because the ATCC information sheets are thus considered to be non-informative for the purposes of safe handling, and because this laboratory handles at least 58 different cell lines, the ATCC information sheets are not attached to this form.

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

**3.0 Use of Human Source Materials**

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

If no, please proceed to Section 4.0

It is not known whether a primary prostate epithelial cell line constitutes a "tissue" for the purpose of this document. In the event that it is interpreted as such, the investigator has completed the table below. A description of the process used in these experiments is provided on pages 2 and 3. The cell line is not infected with an infectious agent. It will be infected with a non-replicative lentivirus, which is considered non-infectious.

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 | | O Yes<br>O Unknown | | O 1 O 2<br>O 2+ O 3 |
| Human Blood (fraction) or other Body Fluid | | O Yes<br>O Unknown | | O 1 O 2<br>O 2+ O 3 |
| Human Organs or Tissues (unpreserved) – normal prostate epithelial cell line | Sciencell Research Laboratories | O Yes<br>X Unknown | Not applicable | O 1 O 2<br>X 2+ O 3 |
| Human Organs or Tissues (preserved) | | Not Applicable | | Not Applicable |

**4.0 Genetically Modified Organisms and Cell lines**

4.1 Will genetic modifications be made to the microorganisms, biological agents, or cells described in Sections 1.0 and 2.0? X YES O NO If no, please proceed to Section 5.0

4.2 Will genetic modification(s) involving plasmids be done? O YES, complete table below X NO

| Bacteria Used for Cloning * | Plasmid(s) ** | Source of Plasmid | Gene Transfected | Describe the change that results from transformation or transfection |
|---|---|---|---|---|
| | | | | |

* Please attach a Material Data Sheet or equivalent if available.
** Please attach a plasmid map.
**Note: the investigator works in a laboratory in which DH5alpha is stored, and so it is listed among the biological cell lines (appendix attached). However, the investigator will not be using this bacteria in any of the experiments described in this document. The bacteria is not used to make the lentivirus vector described elsewhere in this document, nor any other material described herein.**

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

| Virus Used for Vector Construction | Vector(s) * | Source of Vector | Gene(s) Transduced | Describe the change that results from transduction |
|---|---|---|---|---|
| *Lentivirus* | *pLenti-III-EF1alpha* | *Applied Biological Materials, Inc.* | *hTERT* | *Immortalization of primary, normal epithelial cells (but not made tumourigenic)* |

* Please attach a Material Safety Data Sheet or equivalent.
**Note: The adenovirus described above is not listed in 4.3 because it is not used to modify any cells. The adenovirus is being tested as an antiproliferative anti-tumour agent, and is added to cells with the purpose of either killing cells or propagating more virus for the purpose of future experiments. There will be no intentional genetic modifications made of cells. Any cells involved in these experiments will either be burst by the virus or bleached at the end of a cytotoxicity experiment, as indicated above and in compliance with UWO and Health Canada regulations.**

4.4 Will genetic sequences from the following be involved?

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

**Note: HEK293 cells express T antigen and E1A. MEF-1 cells are reported to express T-antigen. The investigator is not aware of T-antigen or E1A being expressed in any of the other cell lines listed in the attached appendix, but would be interested on knowing this if there is information available. HeLa cells are known to be infected with human papilloma virus, which is causative of cancer. The cells express E6 and E7 proteins of HPV. It was not possible to find a report of HPV being expressed by HeLa cells.**
**The lentivirus expression vector map indicates the presence of an SV40 promoter. However, the plasmid does not code for any SV40 proteins. This promoter is only present so that the puromycin-resistance gene can be constitutively expressed in an infected cell, apparently under the transcriptional control of endogenous cellular machinery.**
**The NCI of the US has declared that SV40 likely does not cause cancer in humans, based on extensive epidemiological evidence.**

4.5 Will virus be replication defective? X YES X NO
The lentivirus is replication defective. The adenovirus can be propagated in the HEK293 cell line. The conditions under which this virus will be propagated are described above (page 2).

4.6 Will virus be infectious to humans or animals? X YES O NO
The adenovirus may infect humans if not handled correctly. It usually causes symptoms similar to that of a cold, and will not cause cancer in humans. It can cause cancer in rodents. This virus or cells containing the virus will not be introduced into humans or animals.

4.7 Will this be expected to increase the containment level required? O YES X NO
The containment levels are Level 2 for adenovirus, and Level 2+ for lentivirus. These will be maintained for all experiments.

**5.0 Human Gene Therapy Trials**

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

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

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

5.3 How will the biological agent be administered? _____

5.4 Please give the Health Care Facility where the clinical trial will be conducted:_____

5.5 Has human ethics approval been obtained? O YES, number: _____ O NO O PENDING

**6.0 Animal Experiments**

6.1 Will live animals be used? X YES O NO If no, please proceed to section 7.0
The cells that are to be used in mice are not infected with plasmid or virus. This is not described in the mouse protocol, because it is not being done. The mouse protocol describes the implantation of tumour cell lines into mice. It does not describe any experiments that involve virus-infected or plasmid-transduced cells.

6.2 Name of animal species to be used_____nude mice_____

6.3 AUS protocol # _____2008-090_____

6.4 Will any of the agents listed in section 4.0 be used in live animals O YES, specify: _____ X NO
There will be no experiments in animals using virus, plasmids, or cells that have been infected/transduced with virus or plasmids.

6.5 Will the agent(s) be shed by the animal: O YES X NO, please justify:
____The agent will not be shed because it will not be administered to the animals.
_____

**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)? O YES X No If no, please proceed to section 8.0

7.2 Will live animals be used? O YES O No

7.3 If yes, please specify the animal(s) used:
- Pound source dogs O YES O NO

- Pound source cats O YES O NO
- Cattle, sheep or goats O YES, please specify species _____ O NO
- Non-human primates O YES, please specify species _____ O NO
- Wild caught animals O YES, please specify species & colony # _____ O NO
- Birds O YES, please specify species _____ O NO
- Others (wild or domestic) O YES, please specify _____ O 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? O YES X NO If no, please proceed to Section 9.0

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

8.3 What is the $LD_{50}$ (specify species) of the toxin_____

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

8.5 How much of the toxin is stored*? _____

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

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

**9.0 Insects**

9.1 Do you use insects? O YES X NO If no, please proceed to Section 10.0
9.2 If YES, please give the name of the species. _____
9.3 What is the origin of the insect? _____
9.4 What is the life stage of the insect? _____
9.5 What is your intention? O Initiate and maintain colony, give location: _____
O "One-time" use, give location: _____
9.6 Please describe the risk (if any) of escape and how this will be mitigated:
_____
_____

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

**10.0 Plants**

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

10.2 If YES, please give the name of the species. _____

10.3 What is the origin of the plant? _____

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

10.5 What is your intention? O Grow and maintain a crop O "One-time" use

10.6 Do you do any modifications to the plant? O YES O NO
If yes, please describe: _____
_____

10.7 Please describe the risk (if any) of loss of the material from the lab and how this will be mitigated:
_____
_____
_____

10.8 Is the CFIA permit attached? O YES O NO
If 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? O YES, please give country of origin_____ X NO
If no, please proceed to Section 12.0
The adenovirus has already been imported. A Health Canada import permit was obtained at the time, and has now expired. It is not expected that more virus will be imported within the duration of this permit. The lentivirus is obtained from a Canadian company, for which an import permit is not required.
11.2 Has an Import Permit been obtained from HC for human pathogens? X YES O NO
An import permit was obtained previously for the import of adenovirus. The permit numbers are P-09559 and P-07009.
11.3 Has an import permit been obtained from CFIA for animal or plant pathogens? O YES O NO
Health Canada declared that a single permit was sufficient for the import of adenovirus. Therefore, a CFIA permit was not obtained.
11.4 Has the import permit been sent to OHS? O YES, please provide permit # _____ O NO

**12.0 Training Requirements for Personnel Named on Form**

All personnel named on the above form who will be using any of the above named agents are required to attend the following training courses given by OHS:

- Biosafety
- Laboratory and Environmental/Waste Management Safety
- WHMIS (Western or equivalent)
- Employee Health and Safety Orientation

As the Principal Investigator, I have ensured that all of the personnel named on the form who will be using any of the biological agents in Sections 1.0 to 9.0 have been trained.

SIGNATURE _____ 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. O 1 O 2 X 2+ O 3

13.2 Has the facility been certified by OHS for this level of containment?
X YES, date of most recent biosafety inspection: _December 10, 2010
O NO, please certify
O NOT REQUIRED for Level 1 containment

13.3 Please indicate permit number (not applicable for first time applicants): R-06-000599_

**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.

_____N/A_____

_____

_____

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:

__Staff have been trained to do the following: get immediate medical attention at either LHSC_ Occupational Health and Safety or Victoria Emergency, visit Occ Health as soon as possible, and file an LHSC incident report. UWO employees are asked to visit UWO Occ Health to file an incident report.

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

SIGNATURE _____ Date:_____

**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:

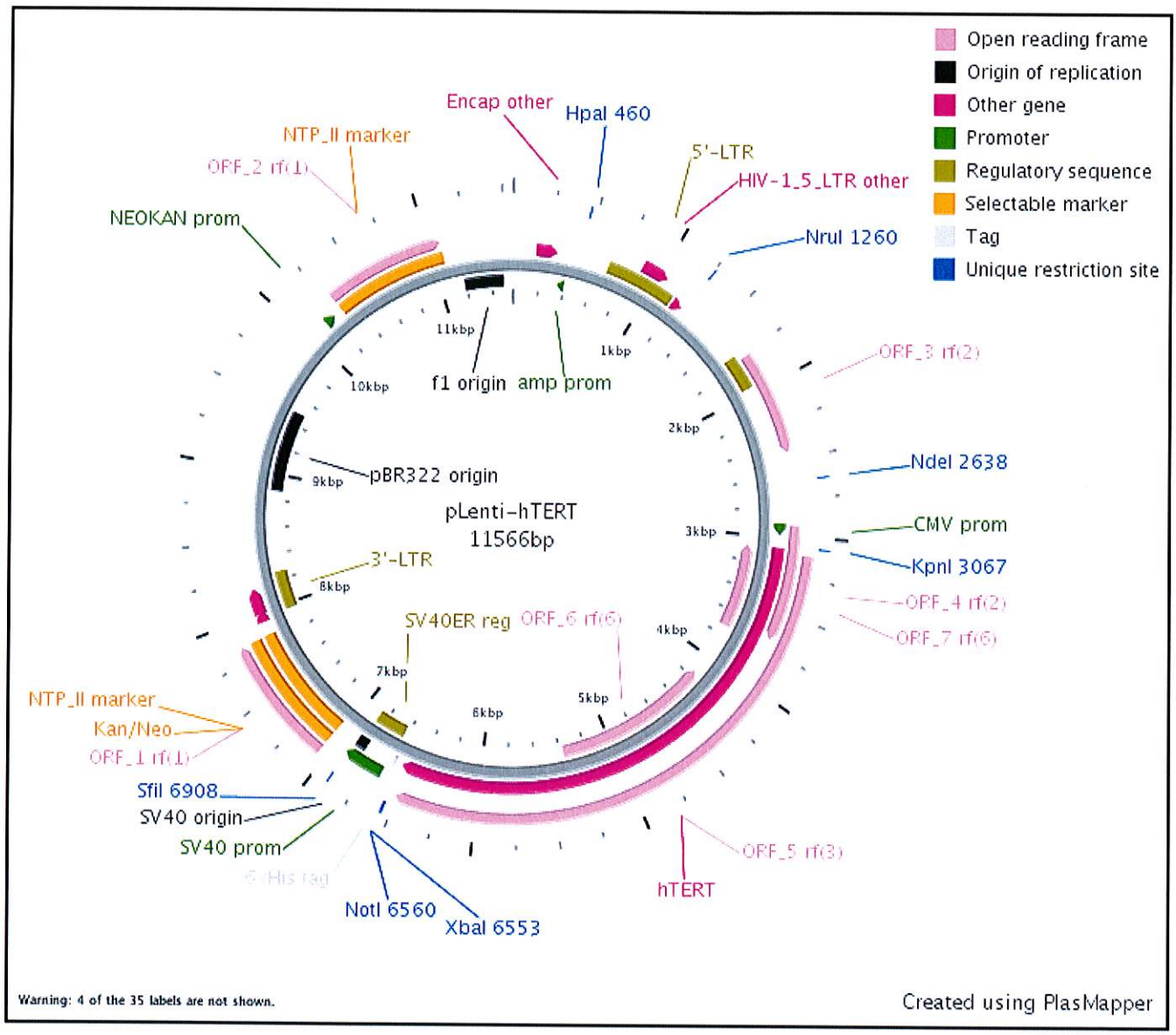
Cell Culture - Koropatnick Laboratory - London Regional Cancer Program, Cancer Research Laboratories - VRL
Last updated June 29, 2011
Cell Lines Used and/or Stored in the Laboratory

Human:
Anaplastic astrocytoma SF-268
Breast MCF-7, MDA-MB-435, MDA-MB-231, MDA-MB-468, SK-BR-3
Cervical epithelial HeLa
Colon tumour HT-29, CaCo-2, HCT-15, HCT-116, SW620
Epidermoid carcinoma A431
Erythroleukemia K562
Fibrosarcoma HT1080
Foreskin fibroblast NIH3T3
Gastric adenocarcinoma AGS, Hs746T, N87
Glioma U87, A172, SF-295, SNB-19, U373MG
Hepatoma Hep-G2
Kidney, embryonic (non-tumour) 293T (E1A/E1B-transformed; T-antigen-expressing)
Leukemia, promyelocytic HL-60
Lung fibroblast WI-38
Lymphoblastoid W1-L2
Lymphoblastic leukemia U937
Lymphoma, histiocytic U-937
Mammary epithelial line 1001-8 (ATCC)
Melanoma SK-MEL-5
Muscle tumour $BC_3H1$
Non-small cell lung carcinoma A549, H226, H460, H520
Osteosarcoma SaOS-2
Ovarian carcinoma OV-90
Pancreatic carcinoma PANC-1, Panc 02.03, Panc 03.27, Panc 10.05
Prostate carcinoma DU145, LNCaP; (untransformed prostate epithelial HPEpiC)
Small cell lung carcinoma DMS114, DMS153, H69, SHP-77
Squamous cell carcinoma, gingival HN-5a
Squamous cell carcinoma, head and neck Cal27, Detroit562, FaDu, SCC9
Testicular Leydig cell tumour line MA10
Umbilical vein epithelial cell (HUVEC) (non-tumour)

Rodent:
Mouse kidney primary
Mouse embryonic fibroblast (MEF)
Mouse mammary tumour 2305
Mouse melanoma B16 F10
Chinese hamster ovary

Insect:
SF9

Bacteria:
Escherichia coli DH5-alpha and DH10-beta


Open reading frame
Origin of replication
Other gene
Promoter
Regulatory sequence
Selectable marker
Tag
Unique restriction site
Encap other
HpaI 460
NTP_II marker
ORF_2 rf(1)
5'-LTR
HIV-1_5_LTR other
NEOKAN prom
NruI 1260
11kbp
1kbp
10kbp
f1 origin
amp prom
ORF_3 rf(2)
2kbp
NdeI 2638
9kbp
pBR322 origin
pLenti-hTERT
11566bp
3kbp
CMV prom
3'-LTR
KpnI 3067
8kbp
ORF_4 rf(2)
SV40ER reg
ORF_6 rf(6)
4kbp
ORF_7 rf(6)
7kbp
5kbp
6kbp
NTP_II marker
Kan/Neo
ORF_1 rf(1)
SfiI 6908
SV40 origin
SV40 prom
ORF_5 rf(3)
6-His tag
hTERT
NotI 6560
XbaI 6553
Warning: 4 of the 35 labels are not shown.
Created using PlasMapper

On 9/27/2011 5:53 PM, Peter Ferguson wrote:
Thank you, Jennifer. I have attached a gif file of the lentivirus map. If you double-click on it, it should open with Internet Explorer, or else you can reply to open with that if it asks you. It has a lot of faint colours in it, so I did not want to scan a print of it, because I don't think it would scan well. I lifted this image from the ABM website, the company that supplied it, so no choice in the colours.

Thanks for looking after the E1A and SV40 check. I was forgetting that E1A is in the adeno that I use. As for SV40, I see that the hTERT-lentivirus vector has an SV40 promoter in it, but I do not see an ORF for the large T-antigen itself, which is what the BARF asks. If this is expressed, please let me know, since I need to know that for the purposes of my experiment, as it could affect cell behaviour. Perhaps the committee member that brought this up could double-check on that and get back to me if it is in fact true.

Thanks again. See you at our next meeting.

Cheers,
Pete

**Applied Biological Materials Inc.**
Telephone: 1-866-757-2414
Email: info@abmgood.com
Website: www.abmGood.com

# pLenti-III-EF1a-h-TERT

| Cat. No. | Quantity | Titer | Accession Number |
|---|---|---|---|
| LV028153 | 1ug | | NM_001193376 |

| | |
|---|---|
| **Species** | Human |
| **Accession Number** | NM_001193376 |
| **Vector** | pLenti-III-EF1alpha |
| **Vector Size** | 8751bp |
| **Insert Size** | 3210bp |
| **Tags** | N.A |
| **Selection Marker** | Kanamycin |
| **Format** | Plasmid |
| **Appearance** | Clear Liquid |
| **Storage Buffer** | 10mM Tris-HCl, 1mM EDTA, pH8.0 |
| **Storage** | 1 year when stored at -20°C or lower in a non-frost free freezer |

UNIVERSITY OF CALIFORNIA, LOS ANGELES

BERKELEY · DAVIS · IRVINE · LOS ANGELES · RIVERSIDE · SAN DIEGO · SAN FRANCISCO

UCLA

SANTA BARBARA · SANTA CRUZ

MOLECULAR BIOLOGY INSTITUTE
611 Charles E. Young Drive East
Box 951570
Los Angeles, California 90095-1570

Arnold Berk
Paul D. Boyer Hall -Molecular Biology Institute
University of California
Los Angeles, CA 90095-1570

September 14, 2009

Dr. Peter J. Ferguson
Cancer Research Laboratories
London Regional Cancer Program – LHSC
790 Commissioners Road East
London, ON N6A 4L6
CANADA

Dear Dr. Ferguson,

Please find enclosed the following:

- *dl*1520 virus stock – 100 µl - titer: $4X10^9$ pfu/ml

Thank you,

Carol Eng
Specialist
310-825-9370
carole@microbio.ucla.edu

In -80, 72 G8 (16-9-09)

Public Health Agency of Canada
Centre for Emergency Preparedness and Response

**Permit to import human pathogen(s)**

Under the authority of the Human Pathogens Importation Regulations.

Agence de la santé publique du Canada
Centre de mesures et d'interventions d'urgence

**Permis d'importation d'agent(s) anthropopathogène(s)**

Sous le régime du Règlement sur l'importation des agents anthropopathogènes.

Permit no.-Permis no.

**P- 17139**

| Importer-Name, address and postal code • Importateur-Nom, adresse et code postal | Facsimile-Télécopieur | Telephone no.- No. de téléphone |
|---|---|---|
| London Health Sciences Centre<br>London Regional Cancer Program<br>790 Commissioners Road East<br>London, ON N6A 4L6 Attn: Dr. Peter J. Ferguson | 519-685-8616 | 519-685-8600<br>ext: 53602# |

| Supplier-Name and address • Fournisseur-Nom et adresse | Name(s) of Port(s) of Entry- To Clear Customs at Port(s) of entry<br>Nom(s) de(s) point(s) d'entrée -Dédouanement au(x) point(s) d'entrée |
|---|---|
| University of California<br>359 Paul Boyer Hall - MBI<br>Los Angeles, CA 90095-1570 | Various ports |

**Description of Pathogen(s)-For the importation of- Description de(s) agent(s) anthropopathogène(s)-Pour l'importation de**

Human adenovirus E1B-deletion mutant dl1520 (ONYX-015).

**On the following terms and conditions as marked:-Selon les conditions indiquées:**

| | | |
|---|---|---|
| 1. | Work involving any of the imported material shall be limited to *in vitro* laboratory studies. | ■ Les travaux auxquels la matière importée est destinée doivent se limiter à des études de laboratoire *in vitro*. |
| 2. | Domestic animals, including poultry, cattle, sheep, swine and horses, shall not be directly or indirectly exposed to infection by any of the imported material. | ■ Les animaux domestiques, y compris les volailles, bovins, ovins, porcins et chevaux, ne doivent pas être exposés, directement ou indirectement, à l'infection par la matière importée. |
| 3. | All animals exposed to infection by any of the imported material shall be so exposed and held only in isolated insect-and rodent-proof facilities. | □ Les animaux exposés à l'infection par la matière importée doivent y être exposés et être gardés uniquement dans des installations isolées à l'abri des insectes et des rongeurs. |
| 4. | All equipment, animal pens, cages, bedding, waste and other articles under the importer's control, that come in direct or indirect contact with any of the imported material, shall be sterilized by autoclaving or incinerated. | ■ L'équipement, les enclos pour animaux, les cages, les litières, les déchets et tout autre article sous la responsabilité de l'importateur qui viennent en contact direct ou indirect avec la matière importée doivent être stérilisés par autoclavage ou incinérés. |
| 5. | Packaging materials, containers and all unused portions of the imported material shall be sterilized by autoclaving or incinerated. | □ Le matériel d'emballage, les récipients et toute partie inutilisée de la matière importée doivent être stérilisés par autoclavage ou incinérés. |
| 6. | No work on the imported material shall be done, except work conducted or directed by the importer in the facilities described in the application for this permit. NO HUMAN PATHOGEN BELONGING TO RISK GROUP 3 OR 4 MAY BE REMOVED TO ANOTHER LOCATION, OR TRANSFERRED INTO THE POSSESSION OF A PERSON OTHER THAN THE IMPORTER, WITHOUT THE PERMISSION OF THE DIRECTOR. | ■ La matière importée ne peut servir qu'aux travaux effectués ou dirigés par l'importateur dans les installations décrites dans la demande de permis. AUCUNE AGENT ANTHROPOPATHOGÈNE DU GROUPE DE RISQUE 3 OU 4 NE PEUT ÊTRE TRANSPORTÉ, SANS LA PERMISSION DU DIRECTEUR, VERS UN AUTRE LIEU OU ÊTRE MIS EN LA POSSESSION D'UNE AUTRE PERSONNE QUE L'IMPORTATEUR. |
| 7. | On completion of the importer's work involving the imported human pathogen, the pathogen and all its derivatives shall be destroyed. | ■ Au terme des travaux de l'importateur auxquels a servi l'agent anthropopathogène importé, celui-ci et tous ses dérivés doivent être détruits. |
| 8. | Primary isolation, identification and/or manipulation may be done in level 2 containment (physical requirements) using containment level 3 operational requirements. | □ On peut accomplir l'isolation, l'identification primaire, et/ou la manipulation au niveau de confinement 2 (exigences physiques) en utilisant les exigences opérationnelles de niveau de confinement 3. |
| 9. | NO IMPORTED MATERIAL MAY BE REMOVED TO ANOTHER LOCATION, OR TRANSFERRED INTO THE POSSESSION OF A PERSON OTHER THAN THE IMPORTER, WITHOUT THE PERMISSION OF THE DIRECTOR. | ■ AUCUNE MATIÈRE IMPORTÉE NE PEUT ÊTRE TRANSPORTÉE, SANS LA PERMISSION DU DIRECTEUR, VERS UN AUTRE LIEU OU ÊTRE MISE EN LA POSSESSION D'UNE AUTRE PERSONNE QUE L'IMPORTATEUR. |
| 10. | The Director must approve all new work with the imported material involving construction of recombinants that requires an increase of containment from level 2. | ■ Tous nouveaux travaux de manipulation génétique (recombiné) avec la matière importée qui demanderà que le niveau 2 de confinement soit augmenté exigera l'approbation du Directeur. |
| 11. | No culturing of Risk Group 3 or 4 pathogens shall be done. | □ Aucune culture d'agent anthropopathogène du Groupe de risque 3 ou 4 ne sera entreprise. |

12. **This permit is valid only for:** / **Le présent permis n'est valide que pour:**

□ a) a single entry into Canada or / une seule entrée au Canada ou

■ b) importations at intervals of / les importations effectuées à intervalles de during the period beginning on / au cours de la période commençant le SEPTEMBER 03, 2009 and ending on / et se terminant le March 12, 2010

**Authorization-Signature of Director**
**Autorisation-Signature du Directeur**

Marianne Heisz for

Date SEPTEMBER 03, 2009

**Note:** Transporting and otherwise dealing with imported material are subject to federal, provincial and municipal laws (if any), to the extent that those laws apply in respect of that material.

**Nota :** Les opérations relatives à la matière importée, y compris le transport, sont assujetties aux lois fédérales, provinciales et aux règlements municipaux applicables.

Canada

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

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

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

October 20th, 2009

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

By Facsimile: (289) 288-0020

**SUBJECT:** Importation of *Escherichia coli* strains

Dear Ms. Survery / Mr. Decosimo:

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

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

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

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

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

Sincerely,

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

Canada

Cell Culture - Koropatnick Laboratory - London Regional Cancer Program, Cancer Research Laboratories - VRL
Last updated June 29, 2011
Cell Lines Used and/or Stored in the Laboratory

Human:
Anaplastic astrocytoma SF-268
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Erythroleukemia K562
Fibrosarcoma HT1080
Foreskin fibroblast NIH3T3
Gastric adenocarcinoma AGS, Hs746T, N87
Glioma U87, A172, SF-295, SNB-19, U373MG
Hepatoma Hep-G2
Kidney, embryonic (non-tumour) 293T (E1A/E1B-transformed; T-antigen-expressing)
Leukemia, promyelocytic HL-60
Lung fibroblast WI-38
Lymphoblastoid W1-L2
Lymphoblastic leukemia U937
Lymphoma, histiocytic U-937
Mammary epithelial line 1001-8 (ATCC)
Melanoma SK-MEL-5
Muscle tumour $BC_3H1$
Non-small cell lung carcinoma A549, H226, H460, H520
Osteosarcoma SaOS-2
Ovarian carcinoma OV-90
Pancreatic carcinoma PANC-1, Panc 02.03, Panc 03.27, Panc 10.05
Prostate carcinoma DU145, LNCaP; (untransformed prostate epithelial HPEpiC)
Small cell lung carcinoma DMS114, DMS153, H69, SHP-77
Squamous cell carcinoma, gingival HN-5a (est. @ Lawson in 1988)
Squamous cell carcinoma, head and neck Cal27, Detroit562, FaDu, SCC9
Testicular Leydig cell tumour line MA10
Umbilical vein epithelial cell (HUVEC) (non-tumour)

Info on Cell Line(s)

Rodent:
Mouse kidney primary
Mouse embryonic fibroblast (MEF)
Mouse mammary tumour 2305
Mouse melanoma B16 F10
Chinese hamster ovary

Insect:
SF9

Bacteria:
Escherichia coli DH5-alpha and DH10-beta

MSDS'

# MATERIAL SAFETY DATA SHEET

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

**MATERIAL SAFETY DATA SHEET**

## SECTION 1 - SUBSTANCE IDENTITY AND COMPANY INFORMATION

**Product Name: Various Animal Cell Cultures at Biosafety Level 1 or 2**
**ATCC Catalog #: Various**

**COMPANY INFORMATION:** AMERICAN TYPE CULTURE COLLECTION
PO BOX 1549
MANASSAS, VA 20108

**FOR INFORMATION CALL:** 800-638-6597 or 703-365-2700
**AFTER-HOURS CONTACT:** 703-365-2710
**CHEMTREC EMERGENCY:** 800-424-9300 or 703-527-3887

## SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

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). Frozen Cultures may also contain a 5%-10% solution of Dimethyl sulfoxide as a cryoprotectant.

## SECTION 3 - HAZARD IDENTIFICATION

| | | | |
|---|---|---|---|
| **HMIS Rating:** | Health: 0 | Flammability: 0 | Reactivity:0 |
| **NFPA Rating:** | Health:0 | Flammability:0 | Reactivity:0 |

This substance is not hazardous as defined by OSHA 29CFR 1910.1200 however this product should be handled according to good lab practices, with proper personal protective equipment, proper engineering controls and within the parameters of the purchaser's safety program.

**Health Hazards**

**For Biosafety Level 1 Cell Cultures**
Handle as a potentially biohazardous material under at least Biosafety Level 1 containment.
This cell line is not known to cause disease in healthy adult humans. These cells have **NOT** been screened for Hepatitis B, human immunodeficiency viruses or other adventitious agents, unless otherwise reported on the Certificate of Analysis. Regardless of results reported on the Certificate of Analysis Universal Precautions according to 29 CFR 1910.1030 should be followed at all times when manipulating these cell lines.

See next page for Biosafety Level 2 cell cultures.

**For Biosafety Level 2 Cell Cultures**
Handle as a potentially biohazardous material under at least Biosafety Level 2 containment.
These cell lines are associated with human disease, hazards include: percutaneous injury, ingestion, mucous membrane exposure (U.S. Government Publication **Biosafety in Microbiological and Biomedical Laboratories)**. These cells have **NOT** been screened for Hepatitis B, human immunodeficiency viruses or other adventitious agents, unless otherwise reported on the Certificate of Analysis. Regardless of results reported on the Certificate of Analysis Universal Precautions according to 29 CFR 1910.1030 should be followed at all times when manipulating these cell lines.

## SECTION 4 - FIRST AID MEASURES

**Report to your Safety Office and Seek Medical Attention as Soon as Possible**

**Ingestion**: If person is unconscious seek emergency medical attention; never give anything by mouth to an unconscious person. If the person is conscious wash mouth out with copious amounts of water and call a physician then administer three cupfuls of water. Do not induce vomiting unless directed to do so by a physician.

**Inhalation**: If person is unconscious seek emergency medical attention, if person is conscious remove to fresh air and call a physician.

**Dermal exposure:** Immediately wash skin with copious amounts of water followed by washing with soap and copious amounts of water. Remove all contaminated clothing.

**Eye exposures:** Flush eyes with copious amounts of water for at least 15 minutes with eyelids separated and call a physician.

## SECTION 5 - FIRE FIGHTING MEASURES

**Flammability:** Data not available

**Suitable Extinguishing Media:** Water spray, carbon dioxide, dry chemical powder, Halon (where regulations permit), or appropriate foam.

**Protective Equipment:** Wear self-contained breathing apparatus and protective clothing to prevent inhalation, ingestion, skin and eye contact.

**Specific Hazard(s):** Responders should take into consideration the biohazard risk associated with responding to a fire in the area where the material may be stored or handled.

## SECTION 6 - ACCIDENTAL RELEASE MEASURES

**Procedure(s) of Personal Precaution(s): At a minimum use PPE listed in Section 8. Wear laboratory coat, gloves and eye protection. Avoid all contact.**

**Methods for Cleaning Up**

**Patient/Victim:** Wash with soap and water. Work clothes should be laundered separately. Launder contaminated clothing before re-use. Do not take clothing home.

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

**Note: The use of additional PPE may be necessary for cleaning solutions.**

## SECTION 7 - HANDLING AND STORAGE

Handle and store according to instructions on product information sheet and label.
Special Requirements:
**Follow established laboratory procedures when handling material.**

## SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

**Use Personal Protective Equipment:** Including Eye Protection, Chemical Resistant Gloves, and appropriate clothing to prevent skin exposure. In addition, a Respiratory protection program that complies with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

**Engineering Controls:** The use and storage of this material requires user to maintain and make available appropriate eyewash and safety shower facilities. Use fume hood or other appropriate ventilation method to keep airborne concentrations a low as possible.

**Exposure Limits:** No exposure limits for this material have been established by ACGIH, NIOSH, or OSHA.

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Data Not Available

## SECTION 10 - STABILITY AND REACTIVITY

Hazardous polymerization will not occur.

## SECTION 11 - TOXICOLOGICAL INFORMATION

**Route of Exposure**

**Eye Contact:** Data not available. Avoid eye contact.
**Skin Contact:** Data not available. Avoid skin contact.
**Skin Absorption:** Data not available. Avoid skin absorption.
**Inhalation:** Data not available. Avoid inhalation.
**Ingestion:** Data not available. Avoid ingestion.
**Parenteral Exposure:** Data not available. Avoid parenteral exposure.

**Sensitization**
**Skin:** Data not available
**Respiratory:** Data not available

**Target Organ(s) or System(s):** Data not available

**Signs and Symptoms of Exposure**
**Skin and Mucous Membranes:** Data not available
**Respiratory:** Data not available
**Gastrointestinal:** Data not available

**Toxicity Data:** Data not available
**Effects of Long Term or Repeated Exposure:** Data not available
**Chronic Exposure–Teratogen:** Data not available
**Chronic Exposure–Mutagen:** Data not available
**Chronic Exposure–Reproductive Hazard:** Data not available

## SECTION 12 - ECOLOGICAL INFORMATION

No ecological information available.

## SECTION 13 - DISPOSAL CONSIDERATIONS

Decontaminate all wastes before disposal (steam sterilization, chemical disinfection, and/or incineration).

Dispose of in accordance with applicable regulations.

## SECTION 14 - TRANSPORT INFORMATION

Contact ATCC for transport information.

## SECTION 15 - REGULATORY INFORMATION

Contact ATCC for regulatory information.

## SECTION 16 - OTHER INFORMATION

ATCC™

# MATERIAL SAFETY DATA SHEET

**THE INFORMATION PRESENTED IN THIS DOCUMENT IS BELIEVED TO BE CORRECT BASED UPON DATA AVAILABLE TO ATCC. USERS SHOULD MAKE AN INDEPENDENT DECISION REGARDING THE ACCURACY OF THIS INFORMATION BASED ON THEIR NEEDS AND DATA AVAILABLE TO THEM. ALL SUBSTANCES AND MIXTURES MAY PRESENT UNKNOWN HAZARDS AND ALL NECESSARY SAFETY PRECAUTIONS SHOULD BE TAKEN. ATCC ASSUMES NO LIABILITY RESULTING FROM USING OR COMING IN CONTACT WITH THIS SUBSTANCE.**

Cell Biology

| ATCC® Number: | **HTB-22™** Order this Item | Price: | **$279.00** |
|---|---|---|---|

| | |
|---|---|
| Designations: | MCF7 |
| Depositors: | CM McGrath |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial   |
| Source: | **Organ:** mammary gland; breast<br>**Disease:** adenocarcinoma<br>**Derived from metastatic site:** pleural effusion<br>**Cell Type:** epithelial |
| Cellular Products: | insulin-like growth factor binding proteins (IGFBP) BP-2; BP-4; BP-5 |
| 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. |
| Applications: | transfection host (Nucleofection technology from Lonza Roche Transfection Reagents) |
| Receptors: | estrogen receptor, expressed |
| Antigen Expression: | Blood Type O; Rh+ |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 10<br>D13S317: 11<br>D16S539: 11,12<br>D5S818: 11,12<br>D7S820: 8,9<br>THO1: 6<br>TPOX: 9,12<br>vWA: 14,15 |
| Cytogenetic Analysis: | modal number = 82; range = 66 to 87.<br>The stemline chromosome numbers ranged from hypertriploidy to hypotetraploidy, with the 2S component occurring at 1%. There were 29 to 34 marker chromosomes per S metaphase; 24 to 28 markers occurred in at least 30% of cells, and generally one large submetacentric (M1) and 3 large subtelocentric (M2, M3, and M4) markers were recognizable in over 80% of metaphases. No DM were detected. Chromosome 20 was nullisomic and X was disomic. |

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| ATCC® Number: | **HTB-129™** Order this Item | Price: | **$279.00** |
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| | |
|---|---|
| Designations: | MDA-MB-435S |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | spindle shaped  |
| Source: | **Organ:** previously described as: mammary gland; breast<br>**Disease:** previously described as ductal carcinoma<br>**Derived from metastatic site:** pleural effusion |
| Cellular Products: | tubulin; actin |
| 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. |
| Isolation: | **Isolation date:** 1976 |
| Tumorigenic: | No |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 11<br>D13S317: 12<br>D16S539: 13<br>D5S818: 12<br>D7S820: 8,10<br>THO1: 6,7<br>TPOX: 8,11<br>vWA: 16,18 |
| Cytogenetic Analysis: | modal number = 56; range = 55 to 62<br>The cell line is aneuploid human female (XX), with most chromosome counts in the 55 to 60 range. Normal chromosomes N6, N11, and N22 were absent, while chromosomes N7, N13, N18 and N21 were single. Most of the remainder of normal chromosomes were usually paired, but chromosome N2 was triple. Nineteen marker chromosomes were identified, with most of them formed from structural alterations of the missing copies of the normal chromosomes. Six of these markers involve regions of chromosome N7, while three are recognized as derivatives of chromosome N6. Regions of a third copy of the normal and paired chromosomes N3, N15, N17, N20 are noted in markers M1, M2, M15, and M5, respectively. |

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| ATCC® Number: | **HTB-26™** Order this Item | Price: | **$279.00** |
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| | |
|---|---|
| Designations: | MDA-MB-231 |
| Depositors: | R Cailleau |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial   |
| Source: | **Organ:** mammary gland; breast<br>**Disease:** adenocarcinoma<br>**Derived from metastatic site:** pleural effusion<br>**Cell Type:** epithelial |
| 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. |
| Applications: | transfection host (Nucleofection technology from Lonza Roche Transfection Reagents) |
| Receptors: | epidermal growth factor (EGF), expressed<br>transforming growth factor alpha (TGF alpha), expressed |
| Tumorigenic: | Yes |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 12,13<br>D13S317: 13<br>D16S539: 12<br>D5S818: 12<br>D7S820: 8,9<br>THO1: 7,9.3<br>TPOX: 8,9<br>vWA: 15,18 |
| Cytogenetic Analysis: | The cell line is aneuploid female (modal number = 64, range = 52 to 68), with chromosome counts in the near-triploid range. Normal chromosomes N8 and N15 were absent. Eleven stable rearranged marker chromosomes are noted as well as unassignable chromosomes in addition to the majority of autosomes that are trisomic. Many of the marker chromosomes are identical to those shown in the karyotype reported by K.L. Satya-Prakash, et al. |

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| ATCC® Number: | **HTB-132™** Order this Item | Price: | **$279.00** |
|---|---|---|---|

| | |
|---|---|
| Designations: | MDA-MB-468 |
| Depositors: | R Cailleau |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial |
| Source: | **Organ:** mammary gland; breast<br>**Disease:** adenocarcinoma |
| 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. |
| Isolation: | **Isolation date:** 1977 |
| Applications: | transfection host (Nucleofection technology from Lonza Roche Transfection Reagents) |
| Receptors: | epidermal growth factor (EGF)<br>transforming growth factor alpha (TGF alpha) |
| Tumorigenic: | Yes |
| Antigen Expression: | Blood Type AB; HLA Aw23, Aw30, B27, Bw35, Cw2, Cw4 (patient) |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 12<br>D13S317: 12<br>D16S539: 9<br>D5S818: 12<br>D7S820: 8<br>THO1: 7<br>TPOX: 8,9<br>vWA: 18 |
| Cytogenetic Analysis: | modal number = 64; range = 60 to 67.<br>The cell line is aneuploid human, presumably female (X, abnormal X) with most chromosome counts in the hypotriploid range.; Normal chromosomes X, N2, N3, N7, N8, N10, and N22 are clearly under-represented due to their involvement in the formation of the many marker (19) chromosomes present in this cell line.; A normal chromosome N1 (or two) is identified in each karyotype, but, in addition, regions of chromosome N1 are also present in five different marker chromosomes.; Variation is evident in the normal and marker chromosome copy number from karyotype to karyotype. |

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| ATCC® Number: | **HTB-30™** | Order this Item | Price: | **$279.00** |

| | |
|---|---|
| Designations: | SK-BR-3 |
| Depositors: | G Trempe, LJ Old |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial  |
| Source: | **Organ:** mammary gland; breast<br>**Disease:** adenocarcinoma<br>**Derived from metastatic site:** pleural effusion |
| 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 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. |
| Isolation: | **Isolation date:** 1970 |
| Applications: | transfection host (Nucleofection technology from Lonza Roche Transfection Reagents) |
| Tumorigenic: | Yes |
| Antigen Expression: | Blood Type A; Rh+; HLA A11, Bw22(+/-), B40, B18 |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 12<br>D13S317: 11,12<br>D16S539: 9<br>D5S818: 9,12<br>D7S820: 9,12<br>THO1: 8,9<br>TPOX: 8,11<br>vWA: 17 |

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| | |
|---|---|
| Designations: | HeLa |
| Depositors: | WF Scherer |
| Biosafety Level: | 2 [Cells contain human papilloma virus ] |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial  |
| Source: | **Organ:** cervix<br>**Disease:** adenocarcinoma<br>**Cell Type:** epithelial |
| Cellular Products: | keratin<br>Lysophosphatidylcholine (lyso-PC) induces AP-1 activity and c-jun N-terminal kinase activity (JNK1) by a protein kinase C-independent pathway [26623] |
| 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. |
| Applications: | transfection host ( [21491] Nucleofection technology from Lonza<br>Roche Transfection Reagents)<br>screening for Escherichia coli strains with invasive potential [21447] [21491] |
| Virus Susceptibility: | Human adenovirus 3<br>Encephalomyocarditis virus<br>Human poliovirus 1<br>Human poliovirus 2<br>Human poliovirus 3 |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 9,10<br>D13S317: 12,13.3<br>D16S539: 9,10<br>D5S818: 11,12<br>D7S820: 8,12<br>THO1: 7<br>TPOX: 8,12<br>vWA: 16,18 |

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| ATCC® Number: | **HTB-38™** Order this Item | Price: | **$279.00** |
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| | |
|---|---|
| Designations: | HT-29 |
| Depositors: | J Fogh |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial   |
| Source: | **Organ:** colon<br>**Disease:** colorectal adenocarcinoma |
| Cellular Products: | secretory component of IgA; carcinoembryonic antigen (CEA); transforming growth factor beta binding protein; mucin |
| 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 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. |
| Isolation: | **Isolation date:** 1964 |
| Applications: | transfection host (Nucleofection technology from Lonza Roche Transfection Reagents) |
| Receptors: | human adrenergic alpha2A [23560]<br>urokinase receptor (u-PAR)<br>vitamin D (moderate expression)<br>urokinase receptor (u-PAR); vitamin D (moderate expression) |
| Tumorigenic: | Yes |
| Oncogene: | myc +; ras +; myb +; fos +; sis +; p53 +; abl -; ros -; src - |
| Antigen Expression: | Blood Type A; Rh+; HLA A1, A3, B12, B17, Cw5 |

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| ATCC® Number: | **HTB-37™** Order this Item | Price: | **$279.00** |
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| | |
|---|---|
| Designations: | Caco-2 |
| Depositors: | J Fogh |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial  |
| Source: | **Organ:** colon<br>**Disease:** colorectal adenocarcinoma |
| Cellular Products: | keratin<br>retinoic acid binding protein 1<br>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 Transfection Reagents) |
| Receptors: | heat stable enterotoxin (Sta, E. coli), expressed<br>epidermal growth factor (EGF), expressed |
| Virus Susceptibility: | Human immunodeficiency virus 1 |
| Tumorigenic: | Yes |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 11<br>D13S317: 11,13,14<br>D16S539: 12,13<br>D5S818: 12,13<br>D7S820: 11,12<br>THO1: 6<br>TPOX: 9,11<br>vWA: 16,18 |

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| ATCC® Number: | **CCL-225™** | Order this Item | Price: | **$279.00** |

| | |
|---|---|
| Designations: | HCT-15 |
| Depositors: | DL Dexter |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial  |
| Source: | **Organ:** colon<br>**Tumor Stage:** Dukes' type C<br>**Disease:** colorectal adenocarcinoma |
| Cellular Products: | carcinoembryonic antigen (CEA) 5.4 ng/10 exp6 cells/10 days; keratin |
| 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. |
| Applications: | transfection host (Roche Transfection Reagents) |
| Tumorigenic: | Yes |
| DNA Profile (STR): | Amelogenin: X,Y<br>CSF1PO: 12<br>D13S317: 8,11<br>D16S539: 12,13<br>D5S818: 13<br>D7S820: 10,12<br>THO1: 7,9.3<br>TPOX: 8,11<br>vWA: 18,19 |
| Cytogenetic Analysis: | This is a quasidiploid human cell line with the modal number 46 occurring in 76% of cells (range = 41 to 47 for 50 metaphases).The rate of polyploidy was 5.1%. The karyotype of the line 46, XY, -8,-11, -17, t(8:17)(p23:q21), inv(11)(p15.3q13.1). The Y chromosome was slightly longer than N22, and had a large segment of heterochromatic, fluorescent distal q arms. |
| Isoenzymes: | ES-D, 2<br>G6PD, B<br>PEP-D, 1<br>PGD, A<br>PGM1, 1-2<br>PGM3, 1 |

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| ATCC® Number: | **CCL-247™** | Order this Item | Price: | **$279.00** |

| | |
|---|---|
| Designations: | HCT 116 |
| Depositors: | MG Brattain |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial  |
| Source: | **Organ:** colon<br>**Disease:** colorectal carcinoma |
| Cellular Products: | carcinoembryonic antigen (CEA) 1 ng per 10 exp6 cells per 10 days; keratin |
| 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. |
| Applications: | transfection host (Nucleofection technology from Lonza Roche Transfection Reagents) |
| Tumorigenic: | Yes |
| DNA Profile (STR): | Amelogenin: X,Y<br>CSF1PO: 7,10<br>D13S317: 10,12<br>D16S539: 11,13<br>D5S818: 10,11<br>D7S820: 11,12<br>THO1: 8,9<br>TPOX: 8,9<br>vWA: 17,22 |
| Cytogenetic Analysis: | The stemline chromosome number is near diploid with the modal number at 45 (62%) and polyploids occurring at 6.8%. The markers 10q+ and t(?8p;18q) are present in all metaphases and t(9q;?16p-), in 80% of the cells karyotyped. N16 is monosomic in the presence of, but disomic in the absence of t (9q;?16p-). N10 and N18 are monosomic and other chromosomes from those mentioned above are disomic. Q-band observations revealed the presence of the Y chromosome, but not in all cells (50% of cells lacked the Y in G-band karyotypes). |

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| ATCC® Number: | CCL-227™ | Order this Item | Price: | $279.00 |
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| | |
|---|---|
| Designations: | SW620 [SW-620] |
| Depositors: | A Leibovitz |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial |
| Source: | **Organ:** colon<br>**Tumor Stage:** Dukes' type C<br>**Disease:** colorectal adenocarcinoma<br>**Derived from metastatic site:** lymph node |
| Cellular Products: | carcinoembryonic antigen (CEA) 0.15 ng/10 exp6 cells/10 days; transforming growth factor alpha; keratin; matrilysin |
| 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. |
| Applications: | transfection host (Roche Transfection Reagents) |
| Tumorigenic: | Yes |
| Oncogene: | myc +; myb + ; ras +; fos +; sis +; p53 +; abl -; ros -; src - |
| Antigen Expression: | blood type A; Rh+ |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 13,14<br>D13S317: 12<br>D16S539: 9,13<br>D5S818: 13<br>D7S820: 8,9<br>THO1: 8<br>TPOX: 11<br>vWA: 16 |
| Cytogenetic Analysis: | modal number = 50; range = 45 to 53, The stemline chromosome number is hyperdiploid with the 2S component occurring at 12% and 11 marker chromosomes were common to S metaphases. One of the 11 markers [7 (7p; 11p)] was disomic., M1 was probably an HSR but the origin of the chromosome could not be identified. |
| Isoenzymes: | |

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| ATCC® Number: | **CRL-1555™** | Order this Item | Price: | **$279.00** |

| | |
|---|---|
| Designations: | A-431 |
| Depositors: | DJ Giard, SA Aaronson |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial   |
| Source: | **Organ:** skin<br>**Tissue:** epidermis<br>**Disease:** epidermoid carcinoma |
| 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. |
| Applications: | transfection host (Nucleofection technology from Lonza Roche Transfection Reagents) |
| Tumorigenic: | Yes |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 11,12<br>D13S317: 9,13<br>D16S539: 12,14<br>D5S818: 12,13<br>D7S820: 10<br>THO1: 9<br>TPOX: 11<br>vWA: 15,17 |
| Cytogenetic Analysis: | This is a hypertriploid human cell line. The modal chromosome number was 74 occurring in 36% of cells. The rate of cells with higher ploidies was 1.0%. |
| Isoenzymes: | AK-1, 1<br>ES-D, 1<br>G6PD, B<br>GLO-I, 2<br>Me-2, 0<br>PGM1, 1<br>PGM3, 1 |
| Age: | 85 years |
| Gender: | female |

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| ATCC® Number: | CCL-243™ | Order this Item | Price: | $279.00 |
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| | |
|---|---|
| Designations: | K-562 |
| Depositors: | HT Holden |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | suspension |
| Organism: | *Homo sapiens* (human) |
| Morphology: | lymphoblast |
| Source: | **Organ:** bone marrow<br>**Disease:** chronic myelogenous leukemia (CML) |
| 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. |
| Applications: | transfection host (Nucleofection technology from Lonza) |
| Tumorigenic: | Yes |
| Antigen Expression: | CD7 (25%) |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 9,10<br>D13S317: 8<br>D16S539: 11,12<br>D5S818: 11,12<br>D7S820: 9,11<br>THO1: 9.3<br>TPOX: 8,9<br>vWA: 16 |
| Cytogenetic Analysis: | The stemline chromosome number is triploid with the 2S component occurring at 4.2%. Fifteen markers (M1 and M(15)) occurred in nearly all S metaphases. Spontaneous non-specific dicentrics occurred, but rarely. Unstable markers were also rarely seen. The X was disomic, and N9 was nullisomic. |
| Isoenzymes: | AK-1, 1<br>ES-D, 1<br>G6PD, B<br>GLO-I, 2<br>Me-2, 0<br>PGM1, 0<br>PGM3, 1 |
| Age: | 53 years |
| Gender: | female |

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Cell Biology

ATCC® Number: **CCL-121™** Order this Item Price: **$279.00**

| | |
|---|---|
| Designations: | HT-1080 |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial |
| Source: | **Tissue:** connective tissue<br>**Disease:** fibrosarcoma |
| 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. |
| Isolation: | **Isolation date:** July, 1972 |
| Applications: | transfection host (Nucleofection technology from Lonza Roche Transfection Reagents) |
| Virus Susceptibility: | Human poliovirus 1<br>RD-114 Feline<br>Feline leukemia virus<br>Vesicular stomatitis virus |
| Tumorigenic: | Yes |
| Oncogene: | ras + |
| DNA Profile (STR): | Amelogenin: X,Y<br>CSF1PO: 12<br>D13S317: 12,14<br>D16S539: 9,12<br>D5S818: 11,13<br>D7S820: 9,10<br>THO1: 6<br>TPOX: 8<br>vWA: 14,19 |
| Cytogenetic Analysis: | modal number = 46; range = 44 to 48.<br>Pseudodiploidy was frequently noted. About 40% of the cells had rearranged karyotypes with an extra E-group chromosome and a group C chromosome, probably chromosome 11, was missing. |
| Isoenzymes: | G6PD, B |
| Age: | 35 years |
| Gender: | male |
| Ethnicity: | Caucasian |
| Comments: | The cells contain an activated N-ras oncogene. |

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| | | | | |
|---|---|---|---|---|
| ATCC® Number: | **CRL-1739™** | Order this Item | Price: | **$279.00** |

| | |
|---|---|
| Designations: | AGS |
| Depositors: | SC Barranco |
| Biosafety Level: | 2 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial |
| Source: | **Organ:** stomach<br>**Disease:** gastric adenocarcinoma |
| 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. |
| Isolation: | **Isolation date:** 1979 |
| Applications: | transfection host (Nucleofection technology from Lonza) |
| Tumorigenic: | Yes |
| Cytogenetic Analysis: | This is a hyperdiploid human cell line. The modal chromosome number was 49, occurring in 60% of cells. The rate of polyploidy was 3.6%. Single copy each for der(8)t(1;8)(q12;p23), der(19)t(19;?) (q13.6;?), minute chromosome M3, and C-group-like M12 was seen in all cells. The origins of both M3 and M12 defied identification presently. The t(13q14q) occurred in some. Generally there were three copies for N20, and single copy for X, N8 and N18. Occasionally there were three copies for N14. |
| Age: | 54 years |
| Gender: | female |
| Ethnicity: | Caucasian |
| Comments: | The AGS cell line was derived from fragments of a tumor resected from a patient who had received no prior therapy. The cells have a plating efficiency of 34% in the medium below. The line was cured at the ATCC of a prior mycoplasma infection .Subsequently, AGS has been determined to be infected with Parainfluenza type 5 (PIV5 formerly known as SV5). [PubMed: 17509637] |
| Propagation: | **ATCC complete growth medium:** 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%.<br>**Temperature:** 37.0°C |

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| ATCC® Number: | **HTB-135™** Order this Item | Price: | **$329.00** |
|---|---|---|---|

| | |
|---|---|
| Designations: | Hs 746T |
| Depositors: | RB Owens |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial |
| Source: | **Organ:** stomach<br>**Disease:** gastric carcinoma<br>**Derived from metastatic site:** left leg |
| 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. |
| Isolation: | California, United States<br>**Isolation date:** 1973 |
| Tumorigenic: | Yes |
| DNA Profile (STR): | Amelogenin: X,Y<br>CSF1PO: 10,12<br>D13S317: 10<br>D16S539: 11<br>D5S818: 11,13<br>D7S820: 8<br>THO1: 9<br>TPOX: 8,10<br>vWA: 15,17 |
| Cytogenetic Analysis: | This is a hypertriploid human cell line having the modal chromosome number of 77 occurring in 46% of cells. Cells with higher ploidies were found at 16.6%. The karyotype of this cell line is very complex. Between 45% and 55% of chromosomes in each cell had structural aberrations, including: der(4)t(1;4) (p13.1;q35); t(15q22q); del(2) (p13); der(7)t(7;?) (p22;?) [7p+]; t(7q22q?) and others. The t(15q22q), del(2), and t(7q22q?) (and several others) had two copies in most cells. There were two types of der(7): one was the 7p+ described above; the other, 7p++, was distinctly longer than N1. There were more than ten markers that were present in some cells only. One DM-like chromosome was found in most cells. Normal N7 and N21 were absent. One normal X and one or two normal Y chromosomes were detected. |

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| ATCC® Number: | **CRL-5822™** Order this Item | Price: | **$329.00** |
|---|---|---|---|

| | |
|---|---|
| Designations: | NCI-N87 [N87] |
| Depositors: | J Park |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial |
| Source: | **Organ:** stomach<br>**Disease:** gastric carcinoma<br>**Derived from metastatic site:** liver |
| 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. |
| Isolation: | **Isolation date:** 1976 |
| Receptors: | acetylcholine, muscarinic, expressed [23078] |
| Tumorigenic: | Yes |
| Oncogene: | myc +; erb B2 + |
| DNA Profile (STR): | Amelogenin: X,Y<br>CSF1PO: 8,12<br>D13S317: 8,11<br>D16S539: 9,13<br>D5S818: 12,13<br>D7S820: 10,11<br>THO1: 9<br>TPOX: 9,11<br>vWA: 15,16 |
| Cytogenetic Analysis: | near diploid; DM were present in 64% of cells examined |
| Gender: | male |
| Comments: | |

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| | | | | |
|---|---|---|---|---|
| ATCC® Number: | **HTB-14™** | Order this Item | Price: | **$279.00** |

| | |
|---|---|
| Designations: | U-87 MG |
| Depositors: | J Ponten |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial  |
| Source: | **Organ:** brain<br>**Tumor Stage:** classified as grade IV as of 2007<br>**Disease:** glioblastoma; astrocytoma |
| 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. |
| Applications: | transfection host (Nucleofection technology from Lonza Roche Transfection Reagents) |
| Tumorigenic: | Yes |
| Antigen Expression: | Blood Type A, Rh+ |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 10,11<br>D13S317: 8,11<br>D7S820: 8,9<br>D5S818: 11,12<br>D16S539: 12<br>vWA: 15,17<br>THO1: 9.3<br>TPOX: 8 |
| Cytogenetic Analysis: | This is a hypodiploid human cell line with the modal chromosome number of 44 occurring in 48% of cells. The rate of higher ploidy was 5.9%., Twelve markers were common to all cells, including der(1)t(1;3) (p22;q21), der(16)t(1;16) (p22;p12), del(9) (p13) and nine others. The marker der(1) had two copies in most cells. There was only one copy of normal X. N1, N6 and N9 were not found. |
| Isoenzymes: | |

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| ATCC® Number: | **CRL-1620™** Order this Item | Price: | **$279.00** |
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| | |
|---|---|
| Designations: | A-172 [A172] |
| Depositors: | DJ Giard |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | |
| Source: | **Organ:** brain<br>**Disease:** glioblastoma |
| 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. |
| Tumorigenic: | No |
| DNA Profile (STR): | Amelogenin: X,Y<br>CSF1PO: 9,12<br>D13S317: 11<br>D16S539: 12<br>D5S818: 11,12<br>D7S820: 11<br>THO1: 6,9.3<br>TPOX: 8,11<br>vWA: 20 |
| Age: | 53 years |
| Gender: | male |
| 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: fetal bovine serum to a final concentration of 10%.<br>**Temperature:** 37.0°C |
| Subculturing: | **Protocol:** 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 the cells detach. Add fresh culture medium, aspirate and dispense into new culture flasks.<br>**Subcultivation Ratio:** A subcultivation ratio of 1:3 to 1:8 is recommended<br>**Medium Renewal:** Every 2 to 3 days |
| Preservation: | **Freeze medium:** culture medium 95%; DMSO, 5%<br>**Storage temperature:** liquid nitrogen vapor phase |

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| | | | | |
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| ATCC® Number: | **HB-8065™** | Order this Item | Price: | **$279.00** |

| | |
|---|---|
| Designations: | Hep G2 |
| Depositors: | Wistar Institute |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial   |
| Source: | **Organ:** liver<br>**Disease:** hepatocellular carcinoma |
| Cellular Products: | alpha-fetoprotein (alpha fetoprotein); albumin; alpha2 macroglobulin (alpha-2-macroglobulin); alpha1 antitrypsin (alpha-1-antitrypsin); transferrin; alpha1 antichymotrypsin; (alpha-1-antichymotrypsin); haptoglobin; ceruloplasmin; plasminogen; [3525]<br>complement (C4); C3 activator; fibrinogen; alpha1 acid glycoprotein (alpha-1 acid glycoprotein); alpha2 HS glycoprotein (alpha-2-HS-glycoprotein); beta lipoprotein (beta-lipoprotein); retinol binding protein (retinol-binding protein) [3525] |
| 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. |
| Applications: | transfection host (Nucleofection technology from Lonza Roche Transfection Reagents) |
| Receptors: | insulin; insulin-like growth factor II (IGF II) [22446] |
| Tumorigenic: | No |
| DNA Profile (STR): | Amelogenin: X,Y<br>CSF1PO: 10,11<br>D13S317: 9,13<br>D16S539: 12,13<br>D5S818: 11,12<br>D7S820: 10<br>F13A01: 5,7<br>F13B: 6,10<br>FESFPS: 11<br>LPL: 10,11<br>THO1: 9<br>TPOX: 8,9<br>vWA: 17 |

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ATCC® Number: **CRL-11268™** Order this Item Price: **$279.00**

| | |
|---|---|
| Designations: | 293T/17 [HEK 293T/17] |
| Depositors: | Rockefeller Univ. |
| Biosafety Level: | 2 [Cells contain Adeno and SV-40 viral DNA sequences ] |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial |
| Source: | **Organ:** kidney |
| 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 restriction: 1. The cell line was deposited at the ATCC by Rockefeller University and is provided for research purposes only. Neither the cell line nor the 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 a 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 the cells, or their products, must first be negotiated with Cell Genesys, 500 Forbes Boulevard, South San Francisco, CA 94080 Attn: Robert H. Tidwell; Senior Vice President, Corporate Development. |
| Antigen Expression: | SV40 T antigen [45408] |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 11, 12<br>D13S317: 12, 14<br>D16S539: 9, 13<br>D5S818: 8, 9<br>D7S820: 11<br>THO1: 7, 9.3<br>TPOX: 11<br>vWA: 16, 18, 19 |
| Age: | fetus |

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| ATCC® Number: | **CCL-240™** Order this Item | Price: | **$279.00** |
|---|---|---|---|

| | |
|---|---|
| Designations: | HL-60 |
| Depositors: | RC Gallo |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | suspension |
| Organism: | *Homo sapiens* (human) |
| Morphology: | myeloblastic   |
| Source: | **Organ:** peripheral blood<br>**Disease:** acute promyelocytic leukemia<br>**Cell Type:** promyeloblast; |
| Cellular Products: | tumor necrosis factor (TNF), also known as tumor necrosis factor alpha (TNF-alpha, TNF alpha), after stimulation with phorbol myristic acid [23403] |
| 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. |
| Applications: | transfection host (Nucleofection technology from Lonza Roche Transfection Reagents) |
| Receptors: | complement, expressed [1050]<br>Fc, expressed [1050] |
| Tumorigenic: | Yes |
| Oncogene: | myc + |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 13,14<br>D13S317: 8,11<br>D16S539: 11<br>D5S818: 12<br>D7S820: 11,12<br>THO1: 7,8<br>TPOX: 8,11<br>vWA: 16 |
| Cytogenetic Analysis: | The stemline chromosome number is pseudodiploid with the 2S component occurring at 6.2%. Five markers (M2 through M6) were common to most S metaphases. DM's, which varied in numbers per cell, occurred in all metaphases karyotyped. HSR chromosomes were not detected. |

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Cell Biology

ATCC® Number: **CCL-75™** Order this Item Price: **$279.00**

| | |
|---|---|
| Designations: | WI-38 |
| Depositors: | L Hayflick |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | fibroblast |
| Source: | **Organ:** lung<br>**Disease:** normal<br>**Cell Type:** fibroblast |
| 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. |
| Applications: | testing [92346] [92389]<br>transfection host (Nucleofection technology from Lonza Roche Transfection Reagents)<br>viruscide testing |
| Virus Susceptibility: | Herpes simplex virus<br>Pseudorabies virus<br>Human poliovirus 1<br>Vesicular stomatitis, Glasgow (Indiana) |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 10,12<br>D13S317: 11<br>D16S539: 11,12<br>D5S818: 10<br>D7S820: 9,11<br>THO1: 8,9.3<br>TPOX: 8<br>vWA: 19,20 |
| Cytogenetic Analysis: | normal diploid |
| Isoenzymes: | G6PD, B |
| Age: | 3 months gestation fetus |
| Gender: | female |
| Ethnicity: | Caucasian |

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| ATCC® Number: | **CRL-8155™** Order this Item | Price: | **$429.00** |
|---|---|---|---|

| | |
|---|---|
| Designations: | WIL2-NS |
| Depositors: | TA Coons |
| Biosafety Level: | 2 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | suspension |
| Organism: | *Homo sapiens* (human) |
| Morphology: | lymphoblast |
| Source: | **Organ:** spleen<br>**Disease:** hereditary spherocytosis<br>**Cell Type:** B lymphocyte; |
| 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. |
| Applications: | transfection host (Roche Transfection Reagents) |
| DNA Profile (STR): | Amelogenin: X,Y<br>CSF1PO: 11,12<br>D13S317: 11<br>D16S539: 11,12<br>D5S818: 12,13<br>D7S820: 9,12<br>F13A01: 6,7<br>F13B: 10<br>FESFPS: 11,12<br>LPL: 9,10<br>THO1: 8,9.3<br>TPOX: 8,11<br>vWA: 17,20 |
| Age: | 5 years |
| Gender: | male |
| Ethnicity: | Caucasian |
| Comments: | This line does not secrete immunoglobulin.<br>The line was derived from the WIL-2 B cell line. |
| Propagation: | **ATCC complete growth medium:** 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%.<br>**Temperature:** 37.0°C |

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Cell Biology

ATCC® Number: **CRL-1593.2™** Order this Item Price: **$279.00**

| | |
|---|---|
| Designations: | U-937 |
| Depositors: | H Koren |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | suspension |
| Organism: | *Homo sapiens* (human) |
| Morphology: | monocyte |
| Source: | **Disease:** histiocytic lymphoma |
| Cellular Products: | lysozyme; beta-2-microglobulin (beta 2 microglobulin); tumor necrosis factor (TNF), also known as tumor necrosis factor alpha (TNF-alpha, TNF alpha), after stimulation with phorbol myristic acid (PMA) |
| 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 original U-937 cell line was established by Dr. K. Nilsson's laboratory in 1974 and he has requested the following: (1) In all papers reporting any use of this cell line or any derivatives thereof a direct reference should be made to Sundstrom and Nilsson (Int. J. Cancer 17: 565-577, 1976). (2) Any proposed commercial use of the cells should be negotiated with Professor Kenneth Nilsson, Rudbeck Laboratory, SE-751 85 Uppsala, Sweden. (3) No distribution of any of the cells or sublines derived therefrom should be made to third parties; (4) The cells should be used for non-clinical, non-commercial research only. |
| Isolation: | **Isolation date:** 1974 |
| Applications: | transfection host (Nucleofection technology from Lonza Roche Transfection Reagents) |
| Receptors: | complement (C3) |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 12<br>D13S317: 10,12<br>D16S539: 12<br>D5S818: 12<br>D7S820: 9,11<br>THO1: 6, 9.3<br>TPOX: 8,11<br>vWA: 14, 15 |
| Age: | 37 years |
| Gender: | male |

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Cell Biology

| ATCC® Number: | **HTB-70™** Order this Item | Price: | **$329.00** |
|---|---|---|---|

| | |
|---|---|
| Designations: | SK-MEL-5 |
| Depositors: | T Takahashi |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | stellate   |
| Source: | **Organ:** skin<br>**Disease:** malignant melanoma<br>**Derived from metastatic site:** axillary node |
| 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 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. |
| Applications: | transfection host (Roche Transfection Reagents) |
| Tumorigenic: | Yes |
| Antigen Expression: | Blood Type O; Rh+; HLA A2, A11, B40, Bw16 |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 10,13<br>D13S317: 10,12<br>D16S539: 10,12<br>D5S818: 11,13<br>D7S820: 9,12<br>THO1: 6,9<br>TPOX: 11<br>vWA: 14,18 |

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Cell Biology

ATCC® Number: **CRL-1443™** Order this Item Price: **$429.00**

| | |
|---|---|
| Designations: | BC3H1 |
| Depositors: | W Carlisle |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Mus musculus* (mouse) |
| Morphology: | |
| Source: | **Organ:** brain<br>**Strain:** C3H<br>**Tissue:** smooth muscle like<br>**Disease:** tumor<br>**Cell Type:** methylnitrosourea induced |
| Cellular Products: | adenylate phosphokinase; creatine phosphokinase |
| 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. |
| Receptors: | acetylcholine |
| Antigen Expression: | H-2k |
| Comments: | Recent data suggest that BC3H1 cells may more closely resemble cells in an arrested state of skeletal muscle differentiation than smooth muscle cells.<br>Tested and found negative for ectromelia virus (mousepox). |
| 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: fetal bovine serum to a final concentration of 20%.<br>**Temperature:** 37.0°C |
| Subculturing: | **Subcultivation Ratio:** A subcultivation ratio of 1:2 to 1:10 is recommended<br>**Medium Renewal:** Twice per week<br>Remove medium, add fresh 0.25% trypsin solution for 2 to 5 minutes, remove trypsin and let the culture sit at room temperature for 10 to 15 minutes. Add fresh medium, aspirate and dispense into new flasks. |

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| ATCC® Number: | **CCL-185™** Order this Item | Price: | **$279.00** |
|---|---|---|---|

| | |
|---|---|
| Designations: | A549 |
| Depositors: | M Lieber |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial   |
| Source: | **Organ:** lung<br>**Disease:** carcinoma |
| Cellular Products: | keratin |
| 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. |
| Isolation: | **Isolation date:** 1972 |
| Applications: | transfer host (Nucleofection technology from Lonza Roche Transfection Reagents) |
| DNA Profile (STR): | Amelogenin: X,Y<br>CSF1PO: 10,12<br>D13S317: 11<br>D16S539: 11,12<br>D5S818: 11<br>D7S820: 8,11<br>THO1: 8,9.3<br>TPOX: 8,11<br>vWA: 14 |
| Cytogenetic Analysis: | This is a hypotriploid human cell line with the modal chromosome number of 66, occurring in 24% of cells. Cells with 64 (22%), 65, and 67 chromosome counts also occurred at relatively high frequencies; the rate with higher ploidies was low at 0.4%. There were 6 markers present in single copies in all cells. They include der(6)t(1;6) (q11;q27); ?del(6) (p23); del (11) (q21), del(2) (q11), M4 and M5. Most cells had two X and two Y chromosomes. However, one or both Y chromosomes were lost in 40% of 50 cells analyzed. Chromosomes N2 and N6 had single copies per cell; and N12 and N17 usually had 4 copies. |
| Isoenzymes: | G6PD, B |
| Age: | 58 years |

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| ATCC® Number: | **CRL-5826™** | Order this Item | Price: | **$329.00** |

| | |
|---|---|
| Designations: | NCI-H226 [H226] |
| Depositors: | AF Gazdar, JD Minna |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | Epithelial |
| Source: | **Organ:** lung<br>**Disease:** squamous cell carcinoma; mesothelioma [23570]<br>**Derived from metastatic site:** pleural effusion |
| 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. 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 the 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. |
| Isolation: | **Isolation date:** March, 1980 |
| DNA Profile (STR): | Amelogenin: X,Y<br>CSF1PO: 10,11<br>D13S317: 13,14<br>D16S539: 9,12<br>D5S818: 11,12<br>D7S820: 8,10<br>THO1: 8,9.3<br>TPOX: 8,11<br>vWA: 17 |
| Cytogenetic Analysis: | modal number = 47; range = 32-88; del(p25) |
| Gender: | male |

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| | | | | |
|---|---|---|---|---|
| ATCC® Number: | **HTB-177™** | Order this Item | Price: | **$279.00** |

| | |
|---|---|
| Designations: | NCI-H460 [H460] |
| Depositors: | AF Gazdar, JD Minna |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial |
| Source: | **Organ:** lung<br>**Disease:** carcinoma; large cell lung cancer<br>**Derived from metastatic site:** pleural effusion |
| 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. |
| Isolation: | **Isolation date:** 1982 |
| Tumorigenic: | Yes |
| DNA Profile (STR): | Amelogenin: X,Y<br>CSF1PO: 11,12<br>D13S317: 13<br>D16S539: 9<br>D5S818: 9,10<br>D7S820: 9,12<br>THO1: 9.3<br>TPOX: 8<br>vWA: 17 |
| Cytogenetic Analysis: | modal numbr = 57; range = 53 to 65.This is a hypotriploid human cell line. The modal chromosome number is 57 although cells with 58 chromosomes occurred with a comparable frequency. The frequency of higher ploidies was 1.7%. Seven marker chromosomes, der(9)t(1;9)(q21;p24), der(9)t(7;9)(p11;p22), t(10q14q), der(16)t(7;16)(q11.23;q22), a small ring (about 1/2 the size of a G chromosome) and two others, were common to all cells. Three other markers were found in some cells only. The markers, t(7;9) and t(7;16) were mostly paired. Normal N9 was absent, and N7 and N16 had only a single copy per cell. Two copies each of the X and the Y were present in all cells. |
| Isoenzymes: | |

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| ATCC® Number: | **HTB-182™** Order this Item | Price: | **$329.00** |
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| | |
|---|---|
| Designations: | NCI-H520 [H520] |
| Depositors: | AF Gazdar, JD Minna |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial |
| Source: | **Organ:** lung<br>**Disease:** squamous cell carcinoma |
| 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. |
| Applications: | transfection host (Roche Transfection Reagents) |
| Tumorigenic: | Yes |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 10<br>D13S317: 10,11<br>D16S539: 8,13<br>D5S818: 12,13<br>D7S820: 8,12<br>THO1: 10<br>TPOX: 8<br>vWA: 18,19 |
| Cytogenetic Analysis: | This is a hypotriploid human cell line. The modal chromosome number is 58 occurring at 30%. The frequency of higher ploidies was 3.2%. Over 30 marker chromosomes were common to all cells, and four others were found in some cells. Among the common markers were 1q+, t(1q8q), 2q+, der(16)t (3;16)(q21;q22), der(19)t(13;19)(q21;q13), and der(5)t(5;5) (p15pq13). Generally, there were two copies of der(5) in each cell. Normal Y and D group chromosomes were absent, and the X chromosome was single. |
| Isoenzymes: | AK-1, 1<br>ES-D, 1<br>G6PD, B<br>GLO-I, 2<br>Me-2, 0<br>PGM1, 1<br>PGM3, 1 |
| Gender: | male |

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| ATCC® Number: | **CRL-11732™** | Order this Item | Price: | **$329.00** |

| | |
|---|---|
| Designations: | OV-90 |
| Depositors: | University of Montreal |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial |
| Source: | **Organ:** ovary<br>**Tumor Stage:** grade 3, stage IIIC<br>**Disease:** malignant papillary serous adenocarcinoma<br>**Derived from metastatic site:** ascites |
| Cellular Products: | keratin [49408] |
| 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. |
| Isolation: | **Isolation date:** August, 1992 |
| Tumorigenic: | Yes |
| Oncogene: | her2/neu +, p53 (mutated, Ser --> Arg mutation at exon 6, codon 215) |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 12,13<br>D13S317: 11,12<br>D16S539: 11<br>D5S818: 11,15<br>D7S820: 10,10.1<br>THO1: 9.3<br>TPOX: 8,10<br>vWA: 16,17 |
| Cytogenetic Analysis: | 46, XX, der(1)t(1;10)(p36;p15), hsr(3)(p11), der(9;17)(q10;q10), der(10)t(10;17)(p15;p12p13), der(13)t(13;13)(p11;q14) [49408] |
| Age: | 64 years |
| Gender: | female |
| Comments: | This cell line was initiated in August of 1992 from a patient of French-Canadian descent with no family history of ovarian cancer. [49408]<br>Like TOV-21G (ATCC CRL-11730), the OV-90 (ATCC CRL-11732) cell line exhibits a deletion at chromosome 3p24. The TOV-112D (ATCC CRL-11731) cell line does not exhibit a deletion at chromosome 3p24. [42090] |

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| ATCC® Number: | **HTB-85™** | Order this Item | Price: | **$279.00** |

| | |
|---|---|
| Designations: | Saos-2 |
| Depositors: | J Fogh, G Trempe |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial  |
| Source: | **Organ:** bone<br>**Disease:** osteosarcoma |
| 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 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. |
| Applications: | transfection host (Nucleofection technology from Lonza Roche Transfection Reagents) |
| Receptors: | epidermal growth factor (EGF); transforming growth factor beta (type 1 and type 2) |
| Tumorigenic: | No |
| Antigen Expression: | Blood Type B, Rh+; HLA A2, A3, Bw16, Bw47 |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 10<br>D13S317: 12,13<br>D16S539: 12,13<br>D5S818: 12<br>D7S820: 8,10<br>THO1: 6,9<br>TPOX: 8<br>vWA: 18 |

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| ATCC® Number: | **CRL-1469™** | Order this Item | Price: | **$279.00** |
|---|---|---|---|---|

| | |
|---|---|
| Designations: | PANC-1 |
| Depositors: | M Lieber |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial |
| Source: | **Organ:** pancreas<br>**Tissue:** duct<br>**Disease:** epithelioid carcinoma |
| 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. |
| Applications: | transfection host (Nucleofection technology from Lonza Roche Transfection Reagents) |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 10,12<br>D13S317: 11<br>D16S539: 11<br>D5S818: 11,13<br>D7S820: 8,10<br>THO1: 7,8<br>TPOX: 8,11<br>vWA: 15 |
| Cytogenetic Analysis: | Chromosome studies indicate a modal number of 63 with 3 distinct marker chromosomes and a small ring chromosome. This is a hypertriploid human cell line. The modal chromosome number was 61, occurring in 32% of cells., However, cells with 63 chromosomes also occurred at a high frequency (22%). The rate of cells with higher ploidies was 8.5%. |
| Isoenzymes: | G6PD, B |
| Age: | 56 years |
| Gender: | male |
| Ethnicity: | Caucasian |
| Comments: | Growth is inhibited by 1 unit/ml L-asparaginase.<br>The cells will grow in soft agar. |

Propagation:

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| ATCC® Number: | **CRL-2553™** Order this Item | Price: | **$429.00** |
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| | |
|---|---|
| Designations: | Panc 02.03 |
| Depositors: | EM Jaffee |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial |
| Source: | **Organ:** pancreas<br>**Disease:** adenocarcinoma |
| Cellular Products: | cytokeratins 7 and 18 [50655] |
| 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. |
| Tumorigenic: | Yes |
| Oncogene: | K-ras + |
| Antigen Expression: | MHC class I +; MHC class II - [50655] |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 11,12<br>D13S317: 12<br>D16S539: 11<br>D5S818: 12,13<br>D7S820: 9,10<br>THO1: 6<br>TPOX: 9,12<br>vWA: 17 |
| Age: | 70 years |
| Gender: | female |
| Ethnicity: | White |
| Comments: | Panc 02.03 is a pancreatic adenocarcinoma epithelial cell line derived in 1995 from a primary tumor removed from the head-of-the-pancreas of a female with pancreatic adenocarcinoma. The cell line exhibits a K-ras oncogene mutation at codon 12 where a GGT --> GAT mutation resulted in substitution of aspartic acid for glycine. [50655]<br>The cells have a reported plating efficiency of 100%. [50655] |

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ATCC® Number: **CRL-2549™** Order this Item Price: **$429.00**

| | |
|---|---|
| Designations: | Panc 03.27 |
| Depositors: | EM Jaffee |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial |
| Source: | **Organ:** pancreas<br>**Disease:** adenocarcinoma |
| Cellular Products: | cytokeratins 7 and 18 |
| 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. |
| Tumorigenic: | Yes |
| Oncogene: | K-ras + (wild-type) |
| Antigen Expression: | MHC class I +; MHC class II - [50655]<br>Blood type A; Rh+ |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 10,11<br>D13S317: 11,12<br>D16S539: 12<br>D5S818: 12,13<br>D7S820: 8,13<br>THO1: 6<br>TPOX: 8,9<br>vWA: 16,17 |
| Age: | 65 years |
| Gender: | female |
| Ethnicity: | White |
| Comments: | Panc 03.27 is a pancreatic adenocarcinoma epithelial cell line derived in 1995 from a primary tumor removed from the head-of-the-pancreas of a female with pancreatic adenocarcinoma.The cells have a reported plating efficiency of 80%. |

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| ATCC® Number: | **CRL-2547™** Order this Item | Price: | **$329.00** |
|---|---|---|---|

| | |
|---|---|
| Designations: | Panc 10.05 |
| Depositors: | EM Jaffee |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial |
| Source: | **Organ:** pancreas<br>**Disease:** adenocarcinoma |
| Cellular Products: | cytokeratins 7 and 18 [50655] |
| 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. |
| Isolation: | **Isolation date:** 1992 |
| Tumorigenic: | Yes |
| Oncogene: | K-ras + |
| Antigen Expression: | MHC class I +; MHC class II - |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 12<br>D13S317: 12<br>D16S539: 9,12<br>D5S818: 13<br>D7S820: 8,9<br>THO1: 6,9.3<br>TPOX: 11<br>vWA: 16 |
| Age: | adult |
| Gender: | male |
| Ethnicity: | White |
| Comments: | Panc 10.05 is a pancreatic adenocarcinoma epithelial cell line derived in 1992 from a primary tumor removed from the head-of-the-pancreas of a male with pancreatic adenocarcinoma. Both the PL45 and the Panc 10.05 cell lines exhibit a K-ras oncogene mutation at codon 12 where a GGT --> GAT mutation resulted in substitution of aspartic acid for glycine. [50655]<br>The cells have a reported plating efficiency of 40%. [50655]<br>The Panc 10.05 cell line was derived from the same patient as the PL45 cell line (ATCC CRL-2558). |

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| | | | | |
|---|---|---|---|---|
| ATCC® Number: | **HTB-81™** | Order this Item | Price: | **$279.00** |

| | |
|---|---|
| Designations: | DU 145 |
| Depositors: | KR Stone |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial |
| Source: | **Organ:** prostate<br>**Disease:** carcinoma<br>**Derived from metastatic site:** brain |
| 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. |
| Applications: | transfection host (Nucleofection technology from Lonza Roche Transfection Reagents) |
| Tumorigenic: | Yes |
| Antigen Expression: | Blood Type O; Rh+ |
| DNA Profile (STR): | D7S820: 7, 10, 11<br>D13S317: 12, 13, 14<br>D5S818: 10, 13<br>vWA: 17, 18, 19<br>THO1: 7<br>CSF1PO: 10, 11<br>TPOX: 11<br>D16S539: 11, 13<br>Amelogenin: X, Y |
| Cytogenetic Analysis: | This is a hypotriploid human cell line. Both 61 and 62 chromosome numbers had the highest rate of occurrence in 30 metaphase counts.The rate of higher ploidies was 3%. The t (11q12q), del(11)(q23), 16q+, del(9)(p11), del(1)(p32) and 6 other marker chromosomes were found in most cells. The N13 was usually absent. The Y chromosome is abnormal through translocation to an unidentified chromosomal segment. The X chromosome was present in single copy. |
| Isoenzymes: | |

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| ATCC® Number: | **CRL-1740™** | Order this Item | Price: | **$279.00** |

| | |
|---|---|
| Designations: | LNCaP clone FGC |
| Depositors: | JS Horoszewicz |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent, single cells and loosely attached clusters |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial   |
| Source: | **Organ:** prostate<br>**Disease:** carcinoma<br>**Derived from metastatic site:** left supraclavicular lymph node |
| Cellular Products: | human prostatic acid phosphatase; prostate specific antigen [21889] |
| 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: | Distribution of this material for commercial purposes will require execution of a Non-exclusive License Agreement. At the time of placing an order, customers must send a request to licensing@ATCC .org. Orders will be shipped when Customer Service receives confirmation from our Licensing officer. |
| Isolation: | **Isolation date:** 1977 |
| Applications: | transfection host (Nucleofection technology from Lonza Roche Transfection Reagents) |
| Receptors: | androgen receptor, positive; estrogen receptor, positive [23045] |
| Tumorigenic: | Yes |
| DNA Profile (STR): | Amelogenin: X,Y<br>CSF1PO: 10,11<br>D13S317: 10,12<br>D16S539: 11<br>D5S818: 11,12<br>D7S820: 9.1,10.3<br>THO1: 9<br>TPOX: 8,9<br>vWA: 16,18 |
| Cytogenetic Analysis: | |

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| | |
|---|---|
| Designations: | DMS 114 |
| Depositors: | OS Pettengill, G Sorenson |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | |
| Source: | **Organ:** lung<br>**Disease:** carcinoma; small cell lung cancer |
| Cellular Products: | adrenocorticotropin (adrenocorticotropic hormone, ACTH); bombesin; glucagon; 17 beta estradiol; oxytocin - neurophysin (OT-NP) |
| 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. |
| Receptors: | epidermal growth factor (EGF); complement (CR3) |
| Tumorigenic: | Yes |
| Antigen Expression: | Leu 7 +; My23 +; CD11b + |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 10,11<br>D13S317: 13<br>D16S539: 12<br>D5S818: 12<br>D7S820: 10,11<br>THO1: 8,9.3<br>TPOX: 8,11<br>vWA: 16,17 |
| Age: | 68 years |
| Gender: | male |
| Ethnicity: | Caucasian |
| Comments: | The line was established from cells from a mediastinal biopsy of a patient with small cell carcinoma of the lung.<br>The patient had not received prior therapy.<br>The cells express HLA class I and class II antigens.<br>Early passages of the cells were contaminated with a bovine mycoplasma (Acholeplasma laidlawii) which was cured (prior to cryopreservation) with A. laidlawii antiserum and kanamycin. |

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| | |
|---|---|
| Designations: | DMS 153 |
| Depositors: | OS Pettengill, G Sorenson |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | monolayer of adherent clusters |
| Organism: | *Homo sapiens* (human) |
| Morphology: | |
| Source: | **Organ:** lung<br>**Disease:** carcinoma; small cell lung cancer<br>**Derived from metastatic site:** liver |
| Cellular Products: | adrenocorticotropin (adrenocorticotropic hormone, ACTH); bombesin; calcitonin; calcitonin gene related peptide (CGRP); oxytocin - neurophysin (OT-NP); 17 beta estradiol |
| 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: | Note: These cells are distributed subject to the following: 1.) This cell line or its products must not be distributed to third parties. Commercial interests are the exclusive property of Dartmouth College. 2.) Any proposed commercial use of these cells must first be negotiated with Office of Technology Transfer, Dartmouth College, Hanover, NH, 03755. Tel: (603) 646-3675. 3.) In all papers reporting any use of these cells, or derived products, a direct reference will be made to the original publications. |
| Receptors: | bombesin; epidermal growth factor (EGF); complement (CR3) |
| Tumorigenic: | Yes |
| Antigen Expression: | Leu 7 +; My23 +; CD11b + |
| Age: | 44 years |
| Gender: | male |
| Ethnicity: | Caucasian |
| Comments: | The line was established from cells from liver tissue taken at autopsy of a patient with small cell carcinoma of the lung.<br>The patient had received prior therapy with cytoxan and methotrexate.<br>The cells express HLA class I and class II antigens. |
| Propagation: | **ATCC complete growth medium:** Waymouth's MB 752/1 medium, 90%; fetal bovine serum, 10% |

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| ATCC® Number: | **HTB-119™** | Order this Item | Price: | **$279.00** |

| | |
|---|---|
| Designations: | NCI-H69 [H69] |
| Depositors: | AF Gazdar |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | suspension, multicell aggregates |
| Organism: | *Homo sapiens* (human) |
| Morphology: | floating aggregates |
| Source: | **Organ:** lung<br>**Disease:** carcinoma; small cell lung cancer |
| 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. |
| Receptors: | insulin-like growth factor II (IGF II) |
| Tumorigenic: | Yes |
| Oncogene: | myc +; myb +; fes +; fms +; raf +; ras + |
| DNA Profile (STR): | CSF1PO: 10, 12<br>D13S317: 12<br>D16S539: 11<br>D5S818: 11, 13<br>D7S820: 9<br>THO1: 8, 9<br>TPOX: 10<br>vWA: 16, 17<br>Amelogenin: XY |
| Cytogenetic Analysis: | modal number = 76 to 78; range = 40 to 87<br>This is an aneuploid human male cell line. Monosomy of many of the normal chromosomes is noted as well as bisomy in this subtetraploid cell line; however, translocations and deletions involving many of the missing chromosomes are noted, and these chromosomal rearrangements appear to be stable and generally paired. Twelve marker chromosomes were identified including: der(16)t(1;16)(q21;q23), der(22)t(4;22)(q12;q13), der(12)t(11;12)(q23;p12), del(17)(p11), der(19)t(5;19)(?q21;q13) and others. |
| Isoenzymes: | |

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| ATCC® Number: | **CRL-2195™** | Order this Item | Price: | **$429.00** |

| | |
|---|---|
| Designations: | SHP-77 |
| Depositors: | AM Koros |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | suspension and loosely adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial |
| Source: | **Organ:** lung<br>**Disease:** carcinoma; small cell lung cancer<br>**Cell Type:** large cell, variant; |
| Cellular Products: | neural cell adhesion molecule (NCAM) NKH-1 |
| 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. |
| Tumorigenic: | Yes |
| Antigen Expression: | Blood Type O; Rh +; CD56; CD57 (HNK-1,Leu-7) |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 10,11<br>D13S317: 8<br>D16S539: 11<br>D5S818: 12<br>D7S820: 11<br>THO1: 7<br>TPOX: 9,11<br>vWA: 16 |
| Age: | 54 years |
| Gender: | male |
| Ethnicity: | Caucasian |

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| ATCC® Number: | **CRL-2095™** | Order this Item | Price: | **$429.00** |

| | |
|---|---|
| Designations: | CAL 27 |
| Depositors: | C Cardona |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial |
| Source: | **Organ:** tongue<br>**Disease:** squamous cell carcinoma |
| 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. |
| Isolation: | **Isolation date:** 1982 |
| Tumorigenic: | Yes |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 10,12<br>D13S317: 10,11<br>D16S539: 11,12<br>D5S818: 11,12<br>D7S820: 10<br>THO1: 6,9.3<br>TPOX: 8<br>vWA: 14,17 |
| Cytogenetic Analysis: | aneuploid; modal number = 43 |
| Age: | 56 years |
| Gender: | male |
| Ethnicity: | Caucasian |

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| ATCC® Number: | CCL-138™ | Order this Item | Price: | $329.00 |
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| | |
|---|---|
| Designations: | Detroit 562 |
| Depositors: | CS Stulberg |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial |
| Source: | **Organ:** pharynx<br>**Disease:** carcinoma<br>**Derived from metastatic site:** pleural effusion |
| Cellular Products: | keratin |
| 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. |
| Virus Susceptibility: | Human poliovirus 1<br>Vesicular stomatitis virus |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 11,13<br>D13S317: 12<br>D16S539: 11<br>D5S818: 11,12<br>D7S820: 8,10<br>THO1: 8,9<br>TPOX: 8,10<br>vWA: 16 |
| Cytogenetic Analysis: | Modal number = 64; range = 58 to128<br>A large subterminal marker chromosome, arm ratio 3:4, is found in 94% of the cells karyotyped. Five to 6 minute chromosomes are present in each cell. |
| Isoenzymes: | G6PD, B |
| Age: | adult |
| Gender: | female |
| Ethnicity: | Caucasian |
| Comments: | The cells are positive for keratin by immunoperoxidase staining. |

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| ATCC® Number: | **HTB-43™** Order this Item | Price: | **$329.00** |
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| | |
|---|---|
| Designations: | FaDu |
| Depositors: | SR Rangan |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | epithelial |
| Source: | **Organ:** pharynx<br>**Disease:** squamous cell carcinoma |
| 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. |
| Applications: | transfection host (Roche Transfection Reagents) |
| Tumorigenic: | Yes |
| DNA Profile (STR): | Amelogenin: None detected<br>CSF1PO: 12<br>D13S317: 8, 9<br>D16S539: 11<br>D5S818: 12<br>D7S820: 11, 12<br>THO1: 8<br>TPOX: 11<br>vWA: 15, 17, 18 |
| Cytogenetic Analysis: | (P16) hypodiploid to hypertriploid with modal number = 64 |
| Isoenzymes: | AK-1, 1<br>ES-D, 1<br>G6PD, B<br>GLO-I, 2<br>Me-2, 2<br>PGM1, 2<br>PGM3, 1 |
| Age: | 56 years |
| Gender: | male |
| Ethnicity: | Caucasian |
| Comments: | The FaDu line was established in 1968 from a punch biopsy of an hypopharyngeal tumor removed from a Hindu patient. The established line was found to contain bundles of tonofilaments in the cell cytoplasm and desmosomal regions were prominent at cell boundaries. |

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| ATCC® Number: | **CRL-1629™** | Order this Item | Price: | **$329.00** |

| | |
|---|---|
| Designations: | SCC-9 |
| Depositors: | JG Rheinwald |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | |
| Source: | **Organ:** tongue<br>**Disease:** squamous cell carcinoma |
| Cellular Products: | epidermal keratins; low levels of involucrin |
| 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. |
| Applications: | transfection host (Roche Transfection Reagents) |
| Tumorigenic: | Yes |
| DNA Profile (STR): | Amelogenin: X,Y<br>CSF1PO: 11<br>D13S317: 9<br>D16S539: 10,11<br>D5S818: 12<br>D7S820: 8<br>THO1: 8,9<br>TPOX: 9,11<br>vWA: 17 |
| Age: | 25 years |
| Gender: | male |
| Comments: | Growth of SCC-9 is enhanced by using a feeder layer of X-irradiated STO cells (ATCC 56-X).<br>The cells do not grow well in semi-solid medium. |
| Propagation: | **ATCC complete growth medium:** A 1:1 mixture of Dulbecco's modified Eagle's medium and Ham's F12 medium containing 1.2 g/L sodium bicarbonate, 2.5 mM L-glutamine, 15 mM HEPES and 0.5 mM sodium pyruvate supplemented with 400 ng/ml hydrocortisone, 90%; fetal bovine serum, 10%<br>**Temperature:** 37.0°C |
| Subculturing: | |

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| ATCC® Number: | **CRL-1730™** | Order this Item | Price: | **$279.00** |

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|---|---|
| Designations: | HUV-EC-C |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Homo sapiens* (human) |
| Morphology: | endothelial  |
| Source: | **Organ:** umbilical vein<br>**Tissue:** vascular endothelium<br>**Disease:** normal<br>**Cell Type:** endothelial |
| Cellular Products: | factor VIII [23284] |
| 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. |
| Applications: | transfection host (technology from amaxa) |
| Tumorigenic: | No |
| DNA Profile (STR): | Amelogenin: X<br>CSF1PO: 11,12<br>D13S317: 9,11<br>D16S539: 11,12<br>D5S818: 11,12<br>D7S820: 8,12<br>THO1: 6,9.3<br>TPOX: 8,11<br>vWA: 16 |
| Cytogenetic Analysis: | |

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| ATCC® Number: | **CRL-2214™** | Order this Item | Price: | **$429.00** |

| | |
|---|---|
| Designations: | MEF-1 |
| Depositors: | TE Willnow |
| Biosafety Level: | 2 [CELLS CONTAIN PAPOVAVIRUS ] |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Mus musculus* (mouse) |
| Morphology: | fibroblast |
| Source: | **Cell Type:** fibroblastSV40 transformed |
| 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. |
| Age: | embryo |
| Comments: | The MEF-1 cell line was initiated in 1993 by transfection of mouse embryo fibroblasts with an SV40 coding plasmid.<br>The cells are wild-type for the low density lipoprotein receptor related protein (LRP).<br>This cell line along with the PEA 10 (see ATCC CRL-2215) and PEA 13 (see ATCC CRL-2216) cell lines constitute a genetically defined system to study the endocytosis of ligands by the LRP.<br>The above cell lines are the only available experimental system to study the effect of LRP deficiency because LRP deficient mouse embryos die in utero. |
| 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: fetal bovine serum to a final concentration of 10%.<br>**Temperature:** 37.0°C |
| Subculturing: | **Protocol:** Remove medium, rinse flask with fresh 0.25% trypsin, 0.02% EDTA and remove trypsin, Add an additional 1 to 2 ml of trypsin solution, and allow the flask to sit at room temperature (or 37C) until the cells detach. Add fresh medium, aspirate and dispense into new flasks.<br>**Subcultivation Ratio:** A subcultivation ratio of 1:6 to 1:10 is recommended<br>**Medium Renewal:** Every 2 to 3 days |
| Preservation: | Culture medium, 95%; DMSO, 5% |

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| ATCC® Number: | **CRL-6475™** | Order this Item | Price: | **$279.00** |

| | |
|---|---|
| Designations: | B16-F10 |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | *Mus musculus* (mouse) |
| Morphology: | mixture of spindle-shaped and epithelial-like cells   |
| Source: | **Organ:** skin<br>**Strain:** C57BL/6J<br>**Disease:** melanoma |
| 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. |
| Applications: | transfection host (technology from amaxa) |
| 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: fetal bovine serum to a final concentration of 10%.<br>**Temperature:** 37.0°C<br>**Atmosphere:** air, 95%; carbon dioxide (CO2), 5% |
| Subculturing: | |

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| ATCC® Number: | **CCL-61™** | Order this Item | Price: | **$279.00** |

| | |
|---|---|
| Designations: | CHO-K1 |
| Depositors: | TT Puck |
| Biosafety Level: | 1 |
| Shipped: | frozen |
| Medium & Serum: | See Propagation |
| Growth Properties: | adherent |
| Organism: | Cricetulus griseus (hamster, Chinese) |
| Morphology: | epithelial-like   |
| Source: | **Organ:** ovary |
| 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. |
| Isolation: | **Isolation date:** 1957 |
| Applications: | transfection host (Nucleofection technology from Lonza Roche Transfection Reagents) |
| Virus Resistance: | poliovirus 2; modoc virus; Button Willow virus |
| Cytogenetic Analysis: | Chromosome Frequency Distribution 50 Cells: 2n = 22. Stemline number is hypodiploid. |
| Gender: | female |
| Comments: | The CHO-K1 cell line was derived as a subclone from the parental CHO cell line initiated from a biopsy of an ovary of an adult Chinese hamster by T. T. Puck in 1957. [22224] The cells require proline in the medium for growth. [25976] |
| Propagation: | **ATCC complete growth medium:** 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%. **Temperature:** 37.0°C |

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