

ATCC® connection™

NEW

Introducing SafeTsource™

Non-Animal Origin Microbial Products

(photo: Greg Sykes, ATCC)



ATCC® SafeTsource™ non-animal origin microbial products can be used in a wide variety of applications where the presence of animal-derived products is of concern. The SafeTsource product line includes microbial cultures, growth media and a cryoprotectant. They are applicable for quality control testing where products are manufactured using aseptic processing.

SafeTsource cultures are grown on vegetable-based media and freeze-dried without contacting animal-derived materials. All SafeTsource cultures originate from pre-1980 seed stocks, meaning they have been preserved at ATCC prior to 1980, the date mentioned in FDA guidance for reducing the risk of BSE. SafeTsource microorganisms listed to the right with their associated ATCC number are now available.

SafeTsource™ Media

Non-animal origin Tryptic Soy Broth (TSB) is used for growth of SafeTsource nonfastidious bacteria, fungi and yeast. The bacteriology and mycology research and development staff at ATCC compared several non-animal origin TSB media currently on the market using a range of bacteria and fungi that are routinely used in quality control protocols. All of the representative microorganisms grew well on the non-animal

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Ordering Information

Description	ATCC® No.
<i>Clostridium sporogenes</i>	11437NA™
<i>Clostridium sporogenes</i>	19404NA™
<i>Enterococcus faecalis</i>	19433NA™
<i>Enterococcus faecalis</i>	29212NA™
<i>Escherichia coli</i>	8739NA™
<i>Kocuria rhizophila</i>	9341NA™
<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar <i>Typhimurium</i>	14028NA™
<i>Staphylococcus aureus</i> subsp. <i>aureus</i>	6538NA™
<i>Staphylococcus aureus</i> subsp. <i>aureus</i>	6538PNA™
<i>Staphylococcus aureus</i> subsp. <i>aureus</i>	25923NA™
<i>Streptococcus pyogenes</i>	19615NA™



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MGC clones — Still the best value

The days of spending time combing through the literature to research sources for clones are over. If your research requires specific cDNA clones for protein expression or functional studies then the human Mammalian Gene Collection* (MGC) at ATCC will meet all of your needs with easy one-stop shopping. Now virtually complete, the human MGC gene collection of full-length protein coding sequences (FL-CDS) is the best value for your research.

As it closes in on its goal of offering more than 18,000 unique human genes, the MGC collection has distinguished itself by its accuracy and quality. All clones are full-length sequence-verified, using the most advanced technology to ensure the highest accuracy (<1 error per 50,000 nt). Clones with frameshifts or chimeras have been carefully eliminated. Overall, MGC provides the most thoroughly curated collection of human cDNAs.

As part of the ATCC mission to provide high-quality biological materials to scientists, ATCC is authorized to distribute MGC clones directly worldwide, as well as through its distributors. At ATCC the full range of human MGC clones is available at the most competitive pricing, either as individually purchased clones, or when purchased by the plate.

To find MGC clones, visit www.atcc.org and search for clones by ATCC® number, GenBank ID or I.M.A.G.E. number.

Clones can also be found with a keyword search by using terms associated with the gene of interest.

All human MGC full-length clones from ATCC are provided as live cultures or frozen glycerol stocks and typically are shipped within three business days after the order is placed. The time and effort saved by taking advantage of the MGC clone collection offered by ATCC will speed your path toward discovery.

To learn more, visit www.atcc.org.

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*The NIH MGC program is a multi-institutional effort to identify and sequence cDNA clones containing a full-length open reading frame (FL-ORF) for human, mouse and rat genes. ATCC continues to be a cost-effective distributor of genuine MGC clones.

ATCC — Always the first choice

ATCC Clone and Vector Sets — enabling better research

As a global biological resource center, ATCC has amassed an array of clone vector and host sets that are useful for a variety of research projects. Here we describe a few of the more popular sets. Visit ATCC online for more information (www.atcc.org). Enter the ATCC® catalog number in the search engine.

Clone set name	ATCC® No.	Description
Ad Easy Basic Kit	JHU-23	Enables production of recombinant adenoviruses simply and conveniently.
Yeast Shuttle Expression Vectors	87669	Set consists of 31 yeast expression vectors that differ in promoters (GPD, TEF, ADH, CYC1), selection markers (HIS3, TRP1, LEU2, URA3) and replicons (CEN6/ARSH4, 2 micron). Distributed in <i>E. coli</i> .
<i>S. cerevisiae</i> Delta0 Deleter Vector Set	87472	Set consists of five “deleter” vectors which are used to generate designer <i>S. cerevisiae</i> host strains that have non-revertible auxotrophic marker mutations for LEU2, LYS2, MET15, URA3 or ADE2. Distributed in <i>E. coli</i> .
AfCS pSLIK vectors for conditional RNA interference	MBA-268	Set includes 33 vectors for use in a lentiviral vector platform enabling microRNA-based conditional RNA interference. (AfCS = Alliance for Cellular Signaling)
AfCS set of subcellular localization markers	MBA-91	This set of subcellular localization markers comprises 64 expression plasmids developed by the AfCS as organelle markers for microscopy studies in mammalian cells. The plasmids encode either full-length or partial cDNAs tagged with a choice of fluorescent marker (either CFP or YFP). In many cases the organelle markers are provided as a set of four to give a choice of promoter (CMV or EF1) as well as fluorescent marker.
Microarray control RNA set	87840	A set of 11 clones of prokaryotic genes used to make RNA transcripts. Such transcripts are frequently used as controls for microarray analysis.
<i>S. pombe</i> Expression Vectors	87685	Consists of vectors that allow the fusion of a protein of interest to a triple HA epitope or a GST domain. A compatible series of restriction sites and a strategic design provides easy customization for individual applications. Use for analyzing a protein of interest or investigating gene function in yeast.
<i>S. pombe</i> Hosts	47104	This collection of <i>S. pombe</i> hosts allows for easy customization of experiments leading to optimal protein expression when used with a variety of different vector systems.
<i>S. pombe</i> General Purpose Vectors	87686	This variety of pUC-based vectors, designed for maintenance in <i>S. pombe</i> , can be used for both gene bank construction and subcloning.

PC-12 Cells Adhere To New Surface Treatment

ATCC and Corning Life Sciences are working together to help researchers get better results

A history of poor attachment

By switching to Corning® CellBIND® flasks, ATCC has solved a long-standing adhesion problem when culturing rat PC-12 cells (ATCC® CRL-1721™), a popular line used by researchers to study neuronal differentiation.

Characteristics of PC-12 cells include a rounded morphology, poor attachment to non-coated plastic surfaces and a tendency to form clusters or clumps in culture. Because these cells poorly adhere to non-coated surfaces, they are difficult to culture, even in the hands of well-trained scientists. ATCC has struggled in the past to obtain good attachment of PC-12 cells when using regular, non-coated Corning flasks. They used a cocktail of Vitrogen 100, Fibronectin and BSA to coat the flasks and while this provided good results, recently the availability of Vitrogen 100 has become unpredictable. Therefore, the ATCC team sought a better, more reliable solution.

Corning CellBIND flasks solve the problem

To solve the problem of inconsistent sources of coating solutions and provide scientists with greater success in their labs, ATCC teamed up with Corning to investigate the CellBIND polystyrene surface.

ATCC staff thoroughly tested the product and determined that Corning CellBIND flasks were far superior to traditional coating methods, especially for PC-12 cells. Developed by Corning scientists, the CellBIND technology uses a microwave plasma pro-

cess for treating the culture surface. This innovative process improves cell attachment by incorporating more oxygen into the cell culture surface, rendering it more hydrophilic and increasing surface stability.

Corning CellBIND flasks provided ATCC the following benefits:

- Greater attachment
- Increased yields (noted in Figure 1)
- Cost and time savings

Working with this cell line, Kim Ellis, ATCC Quality Control Supervisor, noted, “After using Corning CellBIND flasks for ATCC PC-12 cells, we observed increased attachment, faster growth rates, better cell yield, and overall healthier-appearing cultures.”

For more information

For more information on ATCC rat PC-12 cells, please visit www.atcc.org. For more information on Corning products, visit www.corning.com/lifesciences.

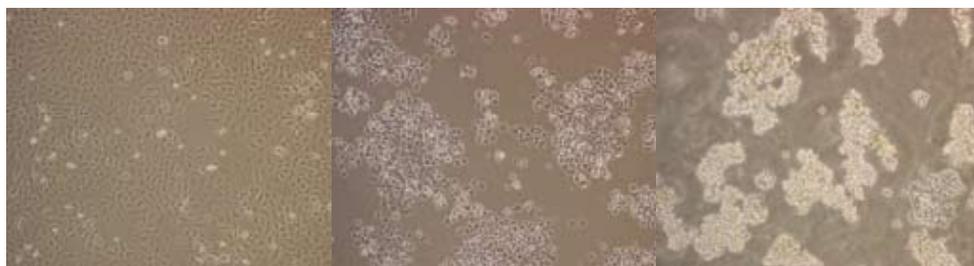


Figure 1: PC-12 cells with CellBIND at 90%, PC-12 cells with coating at 40%, PC-12 cells without coating at 40%.

ATCC Names Cedarlane Exclusive Distributor In Canada

ATCC recently announced an agreement with Cedarlane Laboratories Limited, a Burlington, Ontario-based company, now the exclusive distributor of ATCC products in Canada and the newest member of the ATCC global network of distributors.

The agreement will improve access to ATCC products for the Canadian academic, industrial R&D and quality control testing communities by facilitating the ordering process as well as streamlining logistics for shipping and customer service. Benefits include expedited import paperwork and the ability to purchase products with Canadian currency.

“The ATCC–Cedarlane agreement gives Canadian researchers and quality control professionals greater

access to the many ATCC Genuine Cultures™ that are used in their laboratories,” said Michael Gove, ATCC VP for Sales and Marketing. “Cedarlane’s focus on customer service and quality products makes them a perfect fit to represent ATCC in Canada.”

Cedarlane will distribute ATCC Genuine Cultures™, many of which are cited as biological reference materials in standard research and testing protocols. In addition to cultures, Cedarlane will distribute ATCC high-performance media, sera, genomic DNA and other products in Canada.

In business since 1957 and incorporated in 1975, Cedarlane is a 100% Canadian corporation and a leading supplier of research reagents in Canada. The company is ISO 9001:2000 accredited and ISO 13485 certified.

Key components of the Cedarlane mission are to provide quality products, assure customer satisfaction and respond to the changing needs of the research community.

“Cedarlane is proud to add ATCC products to its extensive portfolio,” said Cynthia Greer, Cedarlane President. “Canadian scientists have an even greater opportunity to consolidate ordering from a long list of high-quality suppliers of scientific products.”

For more information on ordering ATCC products through Cedarlane, visit: www.cedarlanelabs.com/Canada/index.asp.



Haven't received your ATCC Cell Biology Catalog yet?

Order the catalog that highlights the hundreds of cell lines and hybridomas that comprise the ATCC cell biology collection as well as the high-performance media, sera and reagents used to culture ATCC cell lines. To order a copy of the catalog, send an e-mail to help@atcc.org.



Authenticult™ QC Sets for use with the bioMérieux VITEK®2 Instrument

ATCC Genuine Cultures™ in new, convenient, easy-to-use packaging

Authenticult™ provides quality control testing laboratories with convenient, easy-to-use ATCC Genuine Cultures™ in a self-contained package that includes:

- Lyophilized microorganism pellet
- Reservoir of hydrating fluid
- Inoculating swab

Authenticult Provides Reliable, Consistent Results

To ensure thorough characterization of every strain, Authenticult products are quality controlled utilizing a polyphasic approach that incorporates:

- Traditional biochemical methods
- Automated phenotypic testing (including testing on the VITEK® 2 instrument)
- Genotypic analysis

Quality control testing continues through each step of the manufacturing process. Testing protocols and results become part of the laboratory record of each strain and a certificate of analysis is included with each strain. The characterization and purity testing protocols used in the manufacture of Authenticult products provide



reliable, consistent results. Come directly to the source for consistent, reliable microbial strains for use with the VITEK® 2 instrument. Authenticult is available directly from ATCC and ATCC-authorized distributors only.

The following sets of Authenticult microorganisms for use with the VITEK® 2 are currently available:

Ordering Information

ATCC® Number	Authenticult™ Set Description
20-1051	VITEK® 2 GN QC Set
20-1052	VITEK® 2 GP QC Set
40-1003	VITEK® 2 Yeast QC Set
20-1061	VITEK® 2 NH QC Set
40-1007	VITEK® 2 Antifungal AST QC Set

Additional sets will be coming soon.



ATCC — Bringing Confidence To Stem Cell Research

Since 2000, ATCC has been supporting researchers in the field of stem cells. Bringing a strong tradition of quality to one of the largest and most characterized stem cell collections available, ATCC offers and distributes:

- Human and mouse embryonic stem cells
- Embryonal carcinoma cells
- Feeder layer cells
- Embryonic stem cell-qualified culture media and sera
- Analysis tools and stem cell culture reagents

ATCC embryonic stem cells (ESCs) are fully characterized and backed by comprehensive quality control testing. ATCC testing includes sterility, mycoplasma detection, pathogen analyses, morphology, karyology, immunophenotyping and isoenzymology, as well as pluripotency. Additional studies are performed on the human line (BG01V; ATCC® SCRC-2002™),

including short tandem repeat (STR) analysis, HLA typing, telomerase activity, methylation, embryoid body formation, differentiation and gene expression. BG01V is eligible for federal funding in the U.S.

For ongoing testing to ensure that stem cells are maintained in the undifferentiated state, ATCC optimized (and regularly uses) the ELF® Phosphatase Detection Kit for Embryonic Stem Cells. Endogenous alkaline phosphatase has been established as a marker for undifferentiated embryonic cells. The ATCC kit offers a simple and robust method to fluorescently detect and visualize alkaline phosphatase activity in ESCs. The assay enables researchers to confidently proceed with experiments knowing that their stem cell populations have not started to differentiate.

stemcells.atcc.org

Corning-ATCC

Attend A Live Cell Culture Webinar The 2007 Corning Scientific Seminar Series

Join us for a series of Web-based technical seminars. Cosponsored by Corning and ATCC, the webinar is designed to provide novel tips, best practices and proven techniques to help with cell culture research needs. For more information or to register, simply visit www.corning.com/lifesciences/news_center/web_seminars.

Upcoming Corning-ATCC Seminars

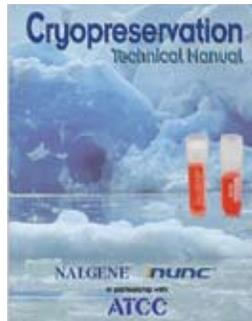
Polio: How Cell Culture Solved the Problem and Started the Bioprocess Industry, presented by John Ryan, PhD

December 11, 2007@ noon-1p.m. ET-NA 18:00-19:00 CET

December 12, 2007@ 10:00-11:00a.m. ET-NA 16:00-17:00 CET

WHAT'S NEW....

NEW Cryopreservation Technical Manual



ATCC and Nalgene® Nunc™ have partnered to produce a NEW Cryopreservation Technical Manual. This is the third edition of the manual. It was first introduced in 1989 and revised in 1995. The manual covers the technical aspects of long-term storage of biological materials such as cell and microbial cultures.

Sections include: Seed Lot System, Cryoprotective Agents, Preparation of Biological Materials, Ampules and Vials, Storage, Reconstitution (thawing), Inventory Control and Safety Considerations. There is also a step-by-step protocol for preserving cultured cells. To receive a free copy of the Cryopreservation Technical Manual, please contact us by e-mail at help@atcc.org or check the box on the business reply card included with this newsletter.

Cited ATCC reference materials and standards can be searched with the Web-based ATCC Standards Resource™. Visit www.atcc.org and click on "Standards Resource."

Fall 2007 featured ATCC cell lines

Cell line name	ATCC® No.	Description/Source	Features and uses
VCaP	CRL-2876™	Derived from metastatic vertebrae tumor of a patient with hormone refractory cancer	Exhibit characteristics of clinical prostate carcinoma Express large quantities of prostate specific antigen (PSA), prostatic acid phosphatase (PAP) and androgen receptor (AR) Useful model of prostate cancer Enable advanced study of prostate cancer progression and metastasis mechanisms
MOVAS	CRL-2797™	Mouse aorta smooth muscle	Vascular smooth muscle cell line (VSMC) Does not experience the typical senescence and phenotypic changes primary VSMC cultures undergo
K7M2 wt	CRL-2836™	Mouse bone osteoblasts developed by repeated implantation of pulmonary metastasis tissue to an appendicular site in mice	Allows for in vitro studies of mouse models of cardiovascular disease Provides a valuable investigative model to improve the understanding of osteosarcoma (OSA) biology, metastasis and treatment Relevant to the human disease including a micrometastatic/minimal residual disease period

For more information about these cell lines, type the ATCC® No. into the ATCC online search engine.

High-throughput transfection with the amaxa Nucleofector® 96-well Shuttle® System and ATCC Cell Lines

amaxa has developed the Nucleofector® 96-well Shuttle® System as a high-throughput solution for transfecting cells.

By applying amaxa Nucleofector® technology to a high-throughput format, amaxa has derived a convenient 96-well Shuttle® that is used on the Nucleofector® II device and which offers the same features as the existing single-cuvette Nucleofector® technology.

Upgrading to the high-throughput Nucleofector® 96-well Shuttle® System is straightforward and easy since optimized nucleofection® protocols are available for the most prominent cell lines. DNA vectors, including expression plasmids and shRNA vectors or siRNA duplexes can be transfected with the same protocol. Efficiencies and viabilities achieved with the 96-well system are in the same range as with standard, single-cuvette nucleofection®; up to 99% transfection efficiency with siRNA duplexes and up to 95% efficiency with plasmid DNA (figure 1).

A growing list of ATCC cell lines has been successfully transfected, often at higher levels than those achieved by previous methods, with

the Nucleofector® 96-well Shuttle® System. The amaxa research and development team recognized that ATCC cell lines are frequently used for transfection and protein expression procedures. By leveraging the collaboration with ATCC, amaxa scientists used ATCC-provided cell lines to optimize the transfection parameters for several key cell lines. Table 1 displays several ATCC cell lines for which transfection protocols have been optimized either by amaxa scientists or by other researchers. For best results, it is recommended to use fresh, low-passage cell cultures whenever possible, since high-passage cells may have altered characteristics.

The Nucleofector® family combines patented technologies with advanced ergonomic design to deliver high-efficiency transfection results.

amaxa and ATCC are working together to help researchers optimize their success transfecting cell lines.

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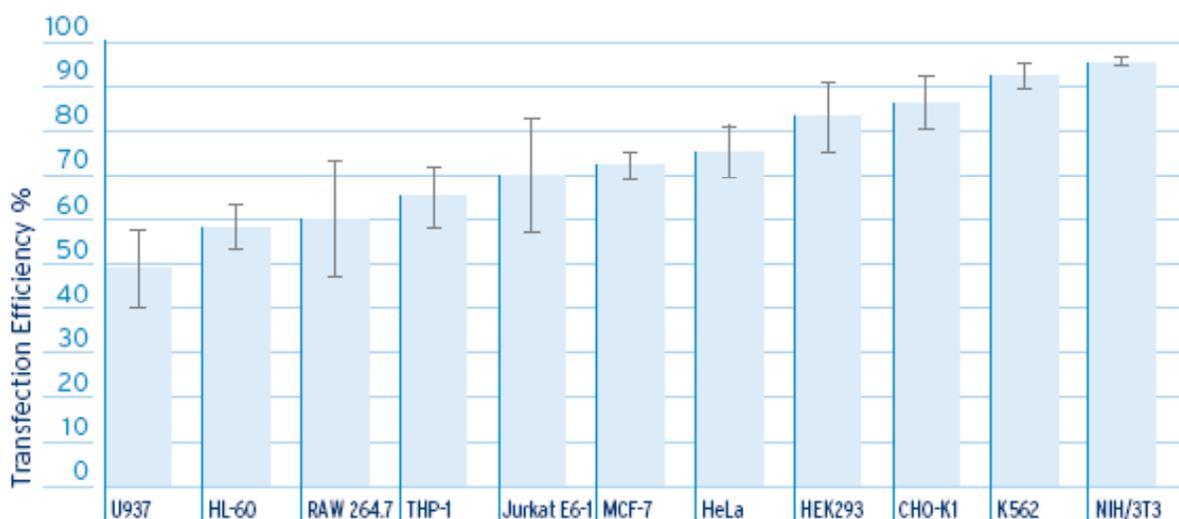


Figure 1: Transfection efficiency of various cell lines using the Nucleofector® 96-well Shuttle®. ATCC cell lines were transfected with 100–1000 ng pmaxGFP® (2 µg for Nucleofector® II) and analyzed for maxGFP® expression by flow cytometry 24 hours post-nucleofection®. Cell viabilities range between 50% and 95%, depending on the cell line.



Figure 2: The Nucleofector® 96-well Shuttle® System (from left to right: Nucleofector® II; 96-well Shuttle®; and laptop with software)

Table 1: ATCC cell lines with transfection results

Cell line designation	ATCC® No.	amaxa kit type	Efficiency ¹	Viability ²	Cell lines available at ATCC with transfection parameters optimized by other researchers ³
HeLa	CCL-2™	Cell Line SE	70%	88%	Cell line designation
Jurkat E6-1	TIB-152™	Cell Line SE	63%	80%	ATCC® No.
MCF-7	HTB-22™	Cell Line SE	77%	60%	amaxa kit type
HeLa S3	CCL-2.2™	Cell Line SE	67%	68%	Efficiency
CHO-K1	CCL-61™	Cell Line SF	86%	97%	Viability
HEK293	CRL-1573™	Cell Line SF	83%	93%	GH-3
K562	CCL-243™	Cell Line SF	92%	95%	CCL-82.1™
HL-60	CCL-240™	Cell Line SF	58%	61%	Cell Line SE
RAW 264.7	TIB-71™	Cell Line SF	60%	86%	70%
Neuro-2a	CCL-131™	Cell Line SF	67%	82%	good
U937	CRL-1593.2™	Cell Line SF	35%	85%	HCT-116
NIH/3T3	CRL-1658™	Cell Line SG	95%	93%	CCL-247™
THP-1	TIB-202™	Cell Line SG	65%	81%	Cell Line SE
					80%
					75%
					95%
					50%
					75%
					80%
					60%
					90%
					50%
					60%
					70%
					80%
					good
					70%
					75%

1 Efficiency refers to maxGFP™ expression 24 hours post-nucleofection®.
 2 Viability refers to PI-negative cells or viable cells compared to untreated sample 24 hours post-nucleofection®.
 3 Customer optimization using amaxa products; means of determination of efficiency and viability might differ from amaxa-generated data. For actual references contact www.amaxa.com

The ATCC MTT Cell Proliferation Assay — Are your cells ready to perform?

For many experiments it is important to determine the number of live cells and their viability. Among all nonradioactive viability assays, the MTT assay is one of the most versatile and trusted options. The ATCC MTT Cell Proliferation Assay Kit provides an easy-to-use tool for studying the induction and inhibition of cell proliferation in any in vitro model.

The assay is a convenient, quantitative method for evaluating a cell population's response to external factors, whether it is an increase in cell growth, a decrease in growth due to necrosis or apoptosis, or no effect.

How it works

MTT is a tetrazolium salt that is turned into a purple formazan product after reduction by mitochondrial enzymes that are only present in metabolically active live cells. The water-insoluble formazan can be solubilized using a detergent and is measured spectrophotometrically. The amount of formazan product generated is directly proportional to the number of living cells in the sample.

A better method brings better results

The ATCC MTT Cell Proliferation Assay Kit requires minimal manipulation, is easily automated, and thus is ideally suited for research



from high-throughput screening to assays with one cell type and one treatment. Both monolayer and suspension cell cultures can be tested using the MTT method. Other strengths of the kit include:

- Proven technology — The method has been published for many applications
- Accurate measurements — More sensitive than simple viability staining
- Safer reagents — No need to store or manipulate radioactive substances
- Rapid processing — Allows high-throughput handling of samples in a 96-well plate

Other methods don't compare

Although several approaches to measure cell growth and viability have been used in the past, none of these methods is as accurate or as safe as the MTT. Trypan blue staining is a simple way to evaluate cell membrane integrity, but the method is not sensitive and cannot be adapted for high-throughput screening. Measuring the uptake of radioactive substances, like tritium-labeled thymidine, is accurate but time-consuming and involves handling of radioactive substances.

For more information, send an e-mail to help@atcc.org.

Order your kit today.

MTT Cell Proliferation Assay [ATCC® Catalog Number 30-1010K](#)

References

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Ohno M, Abe T. *J. Immunol. Methods* 145:199-203, 1991.
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Gerlier D, Thomasset N. *J. Immunol. Methods* 94:57-63, 1986.
Mosmann T. *J. Immunol. Methods* 65: 55-63, 1983.

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origin media and the media provided suitable recoveries of the organisms following simulated storage. The evaluation focused on three objectives:

- 1) Determination of growth rate and cellular yield on the different media
- 2) Determination of the impact that growth on the different media may have on relevant phenotypic traits such as antimicrobial susceptibility and diagnostic biochemical activities
- 3) Determination of the ability of the cultures grown on the different media to undergo preservation (lyophilization) using a novel cryoprotectant and simulated long-term storage followed by recovery using the media

For more information about the use of animal-free TSB media see the article "Growth characteristics of microorganisms on commercially available animal-free alternatives to tryptic soy



ATCC® 6538NA™ *Staphylococcus aureus* subsp. *aureus* was grown on non-animal origin TSB (left) and compared to growth on traditional tryptic soy agar (right)(with animal components). (photo: David Cleland, ATCC)



ATCC® 8739NA™ *Escherichia coli* was grown on non-animal origin TSB (left) and compared to growth on traditional nutrient agar (right)(with animal components). (photo: David Cleland, ATCC)

medium" (Journal of Microbiological Methods, Volume 69, Issue 2, May 2007, Pages 345-352). Check the box on the business reply card enclosed in this issue for a reprint of the article.

ATCC is pleased to offer non-animal origin tryptic soy broth that has been tested for growth using the following ATCC organisms:

<i>Escherichia coli</i>	ATCC® 8739™
<i>Staphylococcus aureus</i>	ATCC® 6538™
<i>Streptococcus pneumoniae</i>	ATCC® 6301™
<i>Bacillus subtilis</i>	ATCC® 6633™
<i>Pseudomonas aeruginosa</i>	ATCC® 9027™
<i>Salmonella typhimurium</i>	ATCC® 14028™
<i>Staphylococcus aureus</i>	ATCC® 6538P™
<i>Staphylococcus aureus</i>	ATCC® 25923™
<i>Staphylococcus epidermidis</i>	ATCC® 12228™
<i>Kocuria rhizophila</i>	ATCC® 9341™
<i>Candida albicans</i>	ATCC® 2091™
<i>Candida albicans</i>	ATCC® 10231™
<i>Aspergillus niger</i>	ATCC® 16404™
<i>Saccharomyces cerevisiae</i>	ATCC® 9763™

Ordering Information

SafeTsource™ Product Description	ATCC® No.	Size	Price
Non-Animal Origin Tryptic Soy Broth –Non-animal origin TSB is used for growth of SafeTsource nonfastidious bacteria, fungi and yeast. Sufficient for preparing one liter of medium.	20-2300	30 g pouch	\$15
Non-Animal Origin Tryptic Soy Broth –Non-animal origin TSB is used for growth of SafeTsource nonfastidious bacteria, fungi and yeast.	20-2350	500 g bottle	\$68
Non-Animal Origin Cryoprotectant –Recommended as the freeze medium for storage of SafeTsource cultures.	20-2205	Package of 12 x 1.0mL	\$68

For laboratory use only. Not for human or diagnostic use.
These products are provided under the ATCC MTA and the addendum for SafeTsource™ products.

NEW Genomic DNA from ATCC®

Better than do-it-yourself

If you're still extracting DNA for microbial research, it's time to let ATCC do the work.

Genomic DNA from fully sequenced microbial strains can save you the time and expense of isolating DNA yourself. ATCC offers high-quality DNA from hundreds of genuine ATCC bacterial, fungal and protozoan strains. ATCC genomic DNA arrives ready-to-use and is tested for integrity, purity and quality by several methods, including:

- Agarose gel electrophoresis
- Spectrophotometry
- Suitability for amplification by PCR
- 16S ribosomal RNA gene or ITS region are sequenced for consistency with the source organism

ATCC testing includes the determination of the total amount of DNA by PicoGreen® measurement. Check out the NEW genomic DNA now available listed below.

Come directly to the source for microbial DNA from ATCC Genuine Cultures™.

Order online today at www.atcc.org or call 800-638-6597 or 703-365-2700.

Request our free poster

A new edition of the popular poster that lists ATCC strains that have been fully sequenced is now available. Contact us by e-mail at help@atcc.org or check the box on the business reply card enclosed in this issue to receive a free copy.



New Genomic DNA Ordering Information

ATCC® Number	Source Organism	Source Strain	Significance
BAA-244D-5	<i>Burkholderia ambifaria</i>	AMMD	Type strain; Sequenced genome
700388D-5	<i>Burkholderia thailandensis</i>	E264	Type strain; Sequenced genome
BAA-1062D-5	<i>Campylobacter jejuni</i>	RM 1221	Sequenced genome
BAA-1382D-5	<i>Clostridium difficile</i>	630	Sequenced genome
208821D-2	<i>Cryptococcus neoformans</i> var. <i>grubii</i>	serotype A; H99	Type strain; Sequencing in progress
BAA-1333D-5	<i>Methanococcus maripaludis</i>	C5	Sequenced genome
BAA-1332D-5	<i>Methanococcus maripaludis</i>	C6	Sequencing in progress
BAA-1331D-5	<i>Methanococcus maripaludis</i>	C7	Sequenced genome
58785D-2	<i>Pichia stipitis</i>	CBS 6054	Sequenced genome
2623D-5	<i>Zygosaccharomyces rouxii</i>	CBS 732	Sequencing in progress

A special collection of methanogens at ATCC

David Emerson, PhD and David Cleland, MS

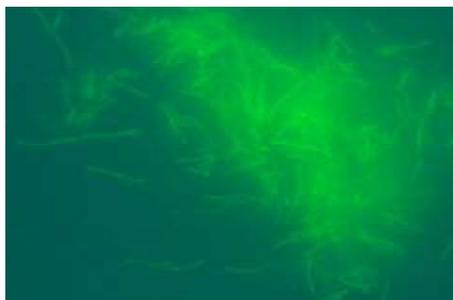
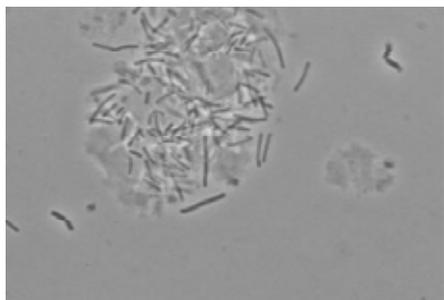
In the 1970s, Dr. David Boone, late of Portland State University, began working on a relatively novel group of bacteria, the methanogens. At the time, methanogens were notable for their strictly anaerobic lifestyle and unique ability to produce methane (natural gas). Dr. Boone proved adept at growing these fastidious organisms and began his own strain collection of isolates. By the 1980s, phylogenetic analysis of certain species of methanogens had shown that they were not bacteria, but formed a new domain of life, which we now know as the Archaea. In turn, the Archaea have come to be recognized as a much more diverse group of microbes than only methanogens. The group includes anaerobic and aerobic extreme thermophiles and halophiles, and has recently been recognized to make up a significant proportion of the free-living deep marine microbiota. Meanwhile, Dr. Boone's collection of methanogenic strains continued to grow and he began acquiring strains from other researchers.

In the late 1980s, while at the Oregon Graduate Institute in Beaverton, Dr. Boone formally established the Oregon Collection of Methanogens to provide methanogens, other Archaea and strict anaerobes to researchers around the world. Dr. Boone established a catalog, developed simplified growth media and efficient means of preserving these organisms. Perhaps most remarkable, Dr. Boone

accomplished this as a full-time professor and manager of an active research program. His staff consisted of one very able assistant, Mr. Yitai Liu. The OCM quickly became recognized as the premier collection of methanogens in the world, and with the aid of researchers from around the world, Dr. Boone was able to acquire most of the type strains of methanogens as well as other strains that either came from interesting environments and/or were of experimental significance. The collection now includes methanogens from ecosystems as diverse as the human intestine, the bovine rumen, deep-sea hydrothermal vents, freshwater and marine sediments, oil wells, salt deposits and the guts of termites.

In the late 1990s, Dr. Boone moved himself and the OCM to Portland State University, where the collection continued to grow to include over 270 methanogens, including most type strains. Mr. Liu continued to provide technical support. Unfortunately, Dr. Boone lost a battle with colon cancer and passed away in 2005. Before his death, Dr. Boone coauthored a grant proposal to the National Science Foundation with scientists from ATCC to seek funding for the transfer of the OCM collection to ATCC. The grant proposal was funded by the National Science Foundation. The collection is now in the final phase of being moved to ATCC. Most of the type strains are either available, or in the process of being made avail-

able, through the ATCC Bacteriology Collection. Available type strains are listed in the chart on the next page. The non-type material will be presented as a searchable special collection from which researchers will be able to acquire items, which will then be produced on an as-needed basis. ATCC is grateful to Dr. Boone for his foresight, vision and dedication to a special group of microorganisms that will now be available to the scientific community for years to come.



ATCC® BAA-1077™ (OCM 238)

Methanobacterium paluster 1000x magnification

Left: Phase-contrast micrograph. Right: Characteristic coenzyme F420 autofluorescence under UV light.

Methanogen Type Strains Ordering Information

ATCC® No.	OCM No.	Organism Name	Strain Name	ATCC® No.	OCM No.	Organism Name	Strain Name
49005™	553	<i>Bacillus benzeovorans</i>	B1	43281™	15	<i>Methanoculleus bourgensis</i>	MS2
4513™	554	<i>Bacillus circulans</i>	26	BAA-1270™	785	<i>Methanoculleus chikuoensis</i>	MG62
14575™	555	<i>Bacillus firmus</i>	613	35101™	56	<i>Methanoculleus marisnigri</i>	JR1
51883™	479	<i>Bacillus infernus</i>	TH-23	35293™	52	<i>Methanoculleus olentangyi</i>	RC/ER
10840™	556	<i>Bacillus lentus</i>	670	BAA-1272™	780	<i>Methanoculleus submarinus</i>	Nankai-1
29366™	572	<i>Chloroflexus aurantiacus</i>	J-10-fl	33837™	174	<i>Methanoculleus thermophilicus</i>	CR-1
49358™	112	<i>Clostridium aldrichii</i>	P-1	BAA-1165™	240	<i>Methanofollis liminatans</i>	GKZPZ
35296™	3	<i>Clostridium cellulovorans</i>	743B	BAA-1078™	159	<i>Methanofollis tationis</i>	(unnamed)
35295™	2	<i>Clostridium populeti</i>	743A	35093™	49	<i>Methanogenium cariaci</i>	JR1
35242™	4	<i>Coprothermobacter proteolyticus</i>	BT	BAA-1287™	469	<i>Methanogenium frigidum</i>	Ace-2
33891™	548	<i>Desulfobulbus propionicus</i>	Lindhorst	BAA-1294™	752	<i>Methanogenium marinum</i>	AK-1
33890™	549	<i>Desulfococcus multivorans</i>	DSM 2059[1be1]	BAA-914™	72	<i>Methanogenium organophilum</i>	CV
49208™	656	<i>Desulfotomaculum acetoxidans</i>	DSM771	BAA-1072™	161	<i>Methanohalobium evestigatum</i>	Z-7303
700428™	644	<i>Desulfotomaculum luciae</i>	SLT	35705™	68	<i>Methanohalophilus mahii</i>	SLP
700427™	459	<i>Desulfotomaculum putei</i>	TH-11	BAA-912™	59	<i>Methanohalophilus portucalensis</i>	DFD-1
23193™	657	<i>Desulfotomaculum ruminis</i>	DSM2154	33997™	124	<i>Methanolacinia paynteri</i>	G-2000
29577™	546	<i>Desulfovibrio desulfuricans</i>	Essex 6	BAA-928™	99	<i>Methanolobus oregonensis</i>	WAL1
29579™	547	<i>Desulfovibrio vulgaris ssp. vulgaris</i>	Hildenborough	BAA-911™	58	<i>Methanolobus taylorii</i>	GS-16
BAA-607™	796	<i>Geobacter bremensis</i>	Dfr1	35996™	150	<i>Methanolobus tindarius</i>	Tindari 3
BAA-603™	797	<i>Geobacter pelophilus</i>	Dfr2	BAA-932™	157	<i>Methanolobus vulcani</i>	PL-12/M
43379™	11	<i>Methanobacterium alcaliphilum</i>	WeN4	BAA-1290™	838	<i>Methanomethylovorans hollandica</i>	DSM1
33272™	110	<i>Methanobacterium bryantii</i>	M.o.H.	35094™	163	<i>Methanomicrobium mobile</i>	1
BAA-1286™	786	<i>Methanobacterium congolense</i>	C	35062™	101	<i>Methanoplanus limicola</i>	M3
BAA-1269™	570	<i>Methanobacterium defluvii</i>	ADZ	BAA-1075™	186	<i>Methanopyrus kandleri</i>	AV19
BAA-1073™	178	<i>Methanobacterium espanolae</i>	GP9	35696™	69	<i>Methanosaeta concilii</i>	GP6
33274™	55	<i>Methanobacterium formicicum</i>	MF	BAA-1166™	251;778	<i>Methanosaeta (Methanotrix) thermophila</i>	PT
BAA-930™	140	<i>Methanobacterium ivanovii</i>	Ivanov	BAA-913™	62	<i>Methanosalsum zhilinae</i>	WeN5
BAA-1077™	238	<i>Methanobacterium palustre</i>	F	35395™	95	<i>Methanosarcina acetivorans</i>	C2A
43168™	141	<i>Methanobacterium thermaggregans</i>	(unnamed)	43569™	38	<i>Methanosarcina barkeri</i>	MS
35997™	176	<i>Methanobacterium uliginosum</i>	P2St	43572™	26	<i>Methanosarcina mazeii</i>	S-6
33747™	147	<i>Methanobrevibacter arboriphilicus</i>	DH1	BAA-931™	156	<i>Methanosarcina siciliae</i>	T4/M
BAA-1169™	813	<i>Methanobrevibacter gottschalkii</i>	HO	43570™	12	<i>Methanosarcina thermophila</i>	TM-1
BAA-1291™	841	<i>Methanobrevibacter alleyae</i>	KM1H5-1P	35090™	85	<i>Methanosarcina vacuolata</i>	Z-761
35063™	146	<i>Methanobrevibacter ruminantium</i>	M1	BAA-1074™	183	<i>Methanosphaera cuniculi</i>	1R7
35061™	144	<i>Methanobrevibacter smithii</i>	PS	43021™	149	<i>Methanosphaera stadtmaniae</i>	MCB-3
BAA-1171™	815	<i>Methanobrevibacter woesei</i>	GS	27890™	16	<i>Methanospirillum hungatei</i>	JF-1
BAA-1170™	814	<i>Methanobrevibacter wolini</i>	SH	BAA-927™	82	<i>Methanothermobacter marburgensis</i>	Marburg
BAA-1172™	666	<i>Methanocalculus chunchingensis</i>	K1F9705c	29096™	143	<i>Methanothermobacter thermautotrophicum</i>	[DELTA]H
BAA-1288™	470	<i>Methanocalculus halotolerans</i>	SEBR 4845	51444™	571	<i>Methanothermobacter thermoflexus</i>	IDZ
43067™	168	<i>Methanocaldococcus jannaschii</i>	JAL-1	BAA-1076™	231	<i>Methanothermobacter thermophilus</i>	M
700851™	771	<i>Methanocaldococcus vulcanius</i>	M7	43096™	154	<i>Methanothermobacter wolfeii</i>	(unnamed)
BAA-1271™	468	<i>Methanococcoides burtonii</i>	DSM 6242	35097™	138	<i>Methanothermococcus thermolithotrophicus</i>	SN-1
33938™	158	<i>Methanococcoides methylutens</i>	TMA-10	49202™	173	<i>Methanothermobacter sociabilis</i>	Kf1-FI
BAA-1291™	836	<i>Methanococcus aeolicus</i>	(unnamed)	14159™	647	<i>Shewanella alga</i>	OK-1
43000™	175	<i>Methanococcus maripaludis</i>	JJ	8071™	646	<i>Shewanella putrefaciens</i>	Hammer 95
35089™	148	<i>Methanococcus vannielii</i>	(unnamed)	33708™	568	<i>Thermodesulfobacterium commune</i>	DSM 2178
33273™	70	<i>Methanococcus voltaei</i>	PS	27502™	574	<i>Thermomicrobium roseum</i>	P-2
BAA-929™	127	<i>Methanocorpusculum bavaricum</i>	SZSXXZ	25104™	573	<i>Thermus aquaticus</i>	YT-1
43576™	1	<i>Methanocorpusculum labreanum</i>	Z				
43721™	63	<i>Methanocorpusculum parvum</i>	XII				
BAA-933™	128	<i>Methanocorpusculum sinense</i>	China Z				

Events and Conferences

ATCC will be attending the following events.
Stop by to talk to an ATCC representative.

American Society for Cell Biology Meeting
December 1-5, 2007, Washington, DC

Biotechnology Calendar Inc. BioResearch Product Faire™
tradeshaw at Texas A&M University
January 17, 2008, College Station, TX

Biotechnology Calendar Inc. BioResearch Product Faire™
tradeshaw at Texas Medical Center
January 18, 2008, Houston, TX

Life Science Exhibits tradeshow at Duke University
March 6, 2008, Raleigh, NC

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