

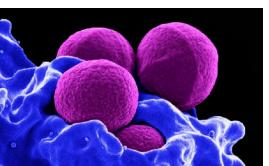






# Quantitative Nucleic Acids









# THE ESSENTIALS OF LIFE SCIENCE RESEARCH GLOBALLY DELIVERED™

# Skip in vitro with ATCC® Genuine Nucleics

The extraction, preparation, and verification of nucleic acids can often require extensive amounts of time, labor, and expense. To save you time and money, ATCC has developed stabilized, quantitative nucleic acids for use in inclusivity/exclusivity testing, establishing limits of detection, and validating or comparing test methods. Our portfolio of quantitative products includes:

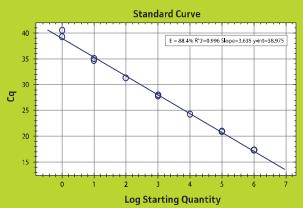
- Synthetic nucleic acids DNA and RNA synthetically manufactured under an ISO 13485:2003 certified process to include key target regions from select bacterial and viral strains
- Genomic nucleic acids Whole genome preparations aseptically prepared from minimally-passaged ATCC Genuine Cultures<sup>®</sup>
- Certified reference materials Genomic DNA produced under an ISO Guide 34:2009 accredited process to confirm identity, well-defined characteristics, and an established chain of custody

So, skip *in vitro* and let ATCC do the work for you! Trust ATCC Genuine Nucleics for your laboratory's molecular needs, and get your research started today.

## PUT ATCC GENUINE NUCLEICS TO WORK FOR YOU

ATCC nucleic acids can be used for assay development, verification, validation, monitoring of day-to-day test variation, and lot-to-lot performance of molecular- based assays. Quantitative formats also allow for the generation of a standard curve to determine viral or bacterial load.

To learn more about ATCC nucleic acid research, visit us online at www. atcc.org/GenuineNucleics, or browse our white papers, application notes, and webinars at www.atcc.org/MicrobiologyResources.



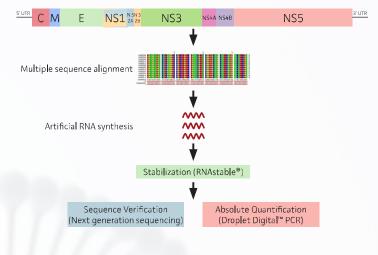
Standard curve generated using the Synthetic Dengue virus (DENV) type 4 molecular standard.

# SYNTHETIC NUCLEIC ACIDS

ATCC performs extensive research on select organisms, and works with collaborators to identify key target regions within the genome that are compatible with primers used in molecular-based assays. Multiple sequence alignment allows for the development of a consensus sequence that is used to synthetically build the finished product.

- Eliminate the need to culture microorganisms
- Use in a BSL-1 facility
- No shipping restrictions
- Manufactured under ISO 13485:2003
- Quantified using Droplet Digital™ PCR (ddPCR™)

Each preparation is extensively tested to ensure product identity, stability, quantity, and functionality with molecular applications. What's more, each DNA or RNA preparation is stabilized using a DNA- or RNA-based BioMātrica® stabilization matrix (DNAstable®, RNAstable®) to ensure consistent results, run after run.



## **Quantitative Synthetic Nucleic Acids**

ATCC® No.	Organism	Source Information	Research Applications
VR-3249SD™	BK virus	Full length genome of BK virus derived from a plasmid clone	Blood-borne Disease Research
VR-3233SD™	Hepatitis C virus	Fragments from 5'UTR and X-tail region (3'UTR)	Blood-borne Disease Research
VR-3247SD™	Human gammaherpesvirus 4 (Epstein-Barr virus)	Fragments from LMP2, BNRF-1, EBER-1, BAMH1W (1 copy, virus genome contains 7), EBNA-2, BHRF-1, EBNA-1 Region (BERF3, BKRF1), BXLF-1, BALF-5, and LMP-1	Blood-borne Disease Research
VR-3261SD™	Human herpesvirus 8	Fragments from the minor capsid protein (ORF 26) and the latency-associated nuclear antigen (LANA or ORF 73)	Blood-borne Disease Research
VR-3237SD™	Sapovirus	Fragments from the RNA-dependent RNA polymerase, VP1, and polyprotein regions.	Digestive System Disease Research
VR-3238SD™	Astrovirus	Fragments from ORF1a, ORF1b, ORF2, and 3' UTR regions	Digestive System Disease Research
PRA-3000SD™	Cyclospora cayetanensis	Full 18S rRNA gene sequence, and full ITS1 and ITS2 sequences	Digestive System Disease Research
PRA-3007SD™	Dientamoeba fragilis	Fragmetns from the 18S ribosomal RNA, internal transcribed spacer 1 (ITS1), and 5.8S ribosomal RNA regions	Digestive System Disease Research
PRA-3006SD™	Giardia lamblia	Fragments from the 18S ribosomal RNA, beta-giardin, triosephosphate isomerase, and glutamate dehydrogenase regions.	Digestive System Disease Research
VR-3257SD™	Hepatitis A virus	Fragments from the 5' untranslated region, viral capsid proteins (VP1–4), self-cleaving peptide 2A, proteinase 3C, and 3D RNA polymerase.	Digestive System Disease Research
VR-3258SD™	Hepatitis E virus	Fragments from the 5' untranslated region, methyl transferase, Y domain, X domain, helicase, RNA-directed RNA polymerase, and open reading frames 2 and 3 (ORF2 and ORF3)	Digestive System Disease Research
VR-3260SD™	Human parechovirus 3	Fragments from the 5'UTR and the viral protein VP1.	Digestive System Disease Research
VR-3255SD™	Murine Norovirus	Fragments from the 5'UTR, NS1/2, NS5, NS6, NS7, Gp1, VF1, GP2, GP3, and 3'UTR	Digestive System Disease Research
VR-3234SD™	Norovirus GI	Fragments from the RNA-dependent RNA polymerase and VP1 regions	Digestive System Disease Research
VR-3235SD™	Norovirus GII	Fragments from the RNA-dependent RNA polymerase, VP1, and VP2 regions	Digestive System Disease Research
VR-3251SD™	Human bocavirus	Fragments from the 5'UTR, NS1, NP1, VP1, VP2, and 3' UTR genes.	Respiratory Disease Research
VR-3262SD™	Human coronavirus	Fragments from from the acidic tandem repeat region, growth factor-like protein, NTPase/helicase domain, RNA-dependent RNA polymerase, spike, and nucleocapsid regions	Respiratory Disease Research

# **Quantitative Synthetic Nucleic Acids**

ATCC <sup>®</sup> No.	Organism	Source Information	Research Applications
VR-3263SD™	Human coronavirus	Fragments from NSP3 (ORF 1A), Rdrp (nsp12), NTPase (nsp13), nsp16, spike protein, nucleocapsid, and 3' UTR	Respiratory Disease Research
VR-3250SD™	Human metapneumovirus (hMPV)	Fragments from the N, P, M, F, and L genes	Respiratory Disease Research
VR-3248SD™	Middle East respiratory syndrome coronavirus	Fragments from the ORF1ab, ORF5, upper envelope (upE), ORF8b, nucleocapsid (N) protein gene, and 3' UTR regions	Respiratory Disease Research
VR-3245SD™	Human immunodeficiency virus 1 (HIV-1)	Fragments from the 5' LTR, <i>gag</i> gene, <i>polgene</i> (including protease, reverse transcriptase, and integrase regions), <i>tat</i> gene, <i>rev</i> gene, and <i>nef</i> gene.	Sexually Transmitted Infection & Blood- borne Disease Research
VR-3259SD™	Human T-cell leukemia virus 2 (HTLV-2)	Proviral genome sequence of HTLV-2 except the long terminal repeats (LTRs)	Sexually Transmitted Infection & Blood- borne Disease Research
VR-3232SD™	Hepatitis B virus	Fragments from the highly conserved precore, core, P, S and X regions	Sexually Transmitted Infection & Blood- borne Disease Research
BAA-2642SD™	Treponema pallidum	Fragments from the <i>polA</i> , <i>tpr</i> , 23S gene, <i>arp</i> ,16S gene, <i>flaA</i> , 47kDa protein gene, and <i>bmp</i>	Sexually Transmitted Infection Research
BAA-2641SD™	Mycoplasma genitalium	Fragments from the 16S gene, mgpA, and gap	Sexually Transmitted Infection Research
VR-3240SD™	Human papillomavirus 16	Full length genome of HPV 16 derived from a plasmid clone	Sexually Transmitted Infection Research
VR-3241SD™	Human papillomavirus 18	Full length genome of HPV 18 derived from a plasmid clone	Sexually Transmitted Infection Research
VR-3256SD™	Human papillomavirus 31	Full length genome of HPV 31 derived from a plasmid clone	Sexually Transmitted Infection Research
PRA-3008SD	Babesia canis	Partial sequence of 18S ribosomal RNA	Vector-borne Disease Research
VR-3246SD™	Chikungunya virus	Fragments from the 5' UTR, nsP1, nsP2, nsP3, nsP4, E2, and E1 genes	Vector-borne Disease Research
VR-3228SD™	Dengue virus type 1	Fragments from the capsid, membrane, and envelope regions	Vector-borne Disease Research
VR-3229SD™	Dengue virus type 2	Fragments from the capsid, membrane, and envelope regions	Vector-borne Disease Research
VR-3230SD™	Dengue virus type 3	Fragments from the capsid, membrane, and envelope regions	Vector-borne Disease Research
VR-3231SD™	Dengue virus type 4	Fragments from the capsid, membrane, and envelope regions	Vector-borne Disease Research
VR-3239SD™	Eastern equine encephalitis virus	Fragments from the capsid, NSP1, NSP3, 3' UTR, E1 envelope glycoprotein, and the E2 envelope glycoprotein regions	Vector-borne Disease Research
PRA-3001SD™	Plasmodium malariae	Fragment from the 18S rRNA gene, untranslated region (UTR), cyclooxygenase 1 and 3 (Cox1 & Cox3), and Cytochrome B (Cytb) region	Vector-borne Disease Research
VR-3254SD™	Rift Valley fever virus	Fragments from the long, medium, and small genome segments, including the Gn gene and the nonstructural genes (NSs and NSm).	Vector-borne Disease Research
VR-3236SD™	Saint Louis encephalitis virus	Fragments from the NS1 gene, premembrane, envelope, NS5 gene, and 3' UTR regions	Vector-borne Disease Research
VR-3198SD™	West Nile virus	Fragments from the 5' UTR, capsid protein C, membrane glycoprotein precursor prM, envelope protein E, nonstructural proteins NS1, NS2A, NS3, and NS5, and the 3' UTR regions	Vector-borne Disease Research
VR-3253SD™	Yellow fever virus	Fragments from the capsid protein C, Pre-M, Envelope protein, NS1, NS2A, NS3, and NS5 regions.	Vector-borne Disease Research
VR-3252SD™	Zika virus	Fragments from the membrane glycoprotein precursor M, Envelope, NS1, NS2B, NS3, NS4B, and NS5 regions	Vector-borne Disease Research

# GENOMIC NUCLEIC ACIDS

ATCC genomic nucleic acids are whole genome preparations aseptically prepared from minimally passaged ATCC® Genuine Cultures. Each preparation is supported by stringent quality control testing to ensure product authenticity and functionality, including one or more of the following analyses:

- Agarose gel electrophoresis to ensure integrity
- Spectrophotometry to evaluate purity
- Droplet Digital™ PCR (ddPCR™) to calculate concentration
- PCR to confirm functional activity
- Sequencing and short tandem repeat analyses confirm species identity

Further, each of our products is manufactured under ISO 9001:2008 certified and ISO/IEC 17025:2005 accredited processes, so you can trust your results and reproduce your data – every time.

### **Quantitative Genomic Nucleic Acids**

ATCC® No.	Organism	Source Information	Research Applications
VR-538DQ™	Human herpesvirus 5	Adenoid tissue from 7-year-old female	Blood-related Disease Research
VR-1367DQ™	Human herpesvirus 3 (Varicella-zoster virus)	Vesicular fluid from child with chickenpox; Georgia	Blood-related Disease Research
700532DQ™	Neisseria meningitidis	Patient with meningococcal septicaemia	Blood-related Disease Research
12453DQ™	Proteus mirabilis		Blood-related Disease Research
700819DQ™	Campylobacter jejuni subsp. jejuni	Human feces	Digestive System Disease Research
8090DQ™	Citrobacter freundii		Digestive System Disease Research
43598DQ™	Clostridioides difficile	Human feces, asymptomatic neonate, Belgium	Digestive System Disease Research
BAA-1382DQ™	Clostridium difficile	Clinical isolate; Switzerland	Digestive System Disease Research
BAA-1870DQ™	Clostridioides difficile		Digestive System Disease Research
PRA-67DQ™	Cryptosporidium parvum	Animal feces; 2002	Digestive System Disease Research
30459DQ™	Entamoeba histolytica	Colonic biopsy of rectal ulcer from adult human male with amebic dysentery; Mexico City, Mexico, 1967	Digestive System Disease Research
700802DQ™	Enterococcus faecalis	Human blood, patient, St. Louis, Missouri, US, 1987	Digestive System Disease Research
700221DQ™	Enterococcus faecium	Human feces, Connecticut	Digestive System Disease Research
3739DQ™	Escherichia coli	Feces	Digestive System Disease Research
10798DQ™	Escherichia coli	Feces from diphtheria convalescent	Digestive System Disease Research
25922DQ™	Escherichia coli 06	Clinical isolate	Digestive System Disease Research
43895DQ™	Escherichia coli O157:H7	Raw hamburger meat implicated in a hemorrhagic colitis outbreak	Digestive System Disease Research
700926DQ™	Escherichia coli	Derived from parent strain W1485 by acridine orange curing of the F plasmid	Digestive System Disease Research
700928DQ™	Escherichia coli	Human clinical specimen, blood and urine from a women with acute pyelonephritis, Baltimore, Maryland	Digestive System Disease Research
BAA-2192DQ™	Escherichia coli O145:Nonmotile	Human stool, South Dakota, USA	Digestive System Disease Research
BAA-2193DQ™	Escherichia coli 045:H2	Stool, Maine	Digestive System Disease Research
BAA-2196DQ™	Escherichia coli 026:H11	Stool, Michigan	Digestive System Disease Research
BAA-2215DQ™	Escherichia coli O103:H11	Idaho	Digestive System Disease Research
BAA-2219DQ™	Escherichia coli 0121:H19	Human stool, Virginia	Digestive System Disease Research
BAA-2326DQ™	Escherichia coli O104:H4	Stool sample from patient with hemolytic uremic syndrome (HUS), 2011	Digestive System Disease Research
BAA-2440DQ™	Escherichia coli O111	Human	Digestive System Disease Research
30888DQ™	Giardia intestinalis	Human female, Portland, OR, 1971	Digestive System Disease Research
700392DQ™	Helicobacter pylori	Stomach of a human patient with gastritis; UK	Digestive System Disease Research
/R-930DQ™	Human adenovirus 41	Feces from 14 month old with gastroenteritis, Netherlands, 1973	Digestive System Disease Research
VR-1775DQ™	Human Enterovirus 71	Stool specimen from 2-month-old male with aseptic meningitis	Digestive System Disease Research
√R-931DQ™	Human mastadenovirus F	Feces, infantile gastroenteritis, Netherlands, 1979	Digestive System Disease Research
BAA-968D™	Mycobacterium avium subsp. paratuberculosis	Animal feces; Wisconsin, 1990	Digestive System Disease Research

## **Quantitative Genomic Nucleic Acids**

ATCC <sup>®</sup> No.	Organism	Source Information	Research Applications
VR-824DQ™	Reovirus 3	Child with diarrhea	Digestive System Disease Research
√R-2018DQ™	Rotavirus A	Diarrhea stool from patient positive for rotavirus	Digestive System Disease Research
700720DQ™	Salmonella enterica subsp. enterica serovar Typhimurium	Wild type strain isolated from a natural source; 1948	Digestive System Disease Research
BAA-611DQ™	Streptococcus agalacitae	Clinical specimen, Human	Digestive System Disease Research
PRA-310DQ™	Toxoplasma gondii	Derived from in vivo RH strain ATCC 50174	Digestive System Disease Research
.7978DQ™	Acinetobacter baumannii	Fatal meningitis of a 4-month old infant	Epitermal Disease Research
L0231DQ™	Candida albicans	Man with bronchomycosis	Epidermal Disease Research
/R <b>-</b> 1432DQ™	Human enterovirus 71	Vesicular fluid from an adult female with hand, foot, and mouth disease, Wuhan, China.	Epidermal Disease Research
/R-1467DQ™	Human herpesvirus 6B	Peripheral blood lymphocytes from a 36 year-old male AIDS patient, Zaire, Africa	Epidermal Disease Research
47085DQ™	Pseudomonas aeruginosa		Epidermal Disease Research
25923DQ™	Staphylococcus aureus subsp. aureus	Clinical Isolate	Epidermal Disease Research
29213DQ™	Staphylococcus aureus subsp. aureus	Wound	Epidermal Disease Research
∔3300DQ™	Staphylococcus aureus subsp. aureus	Clinical isolate, Kansas	Epidermal Disease Research
700699DQ™	Staphylococcus aureus subsp. aureus	Isolated from pus and debrided tissue at surgical incision in sternum of 4 month-old infant; Japan, 1996	Epidermal Disease Research
BAA-1556DQ™	Staphylococcus aureus subsp. aureus	Wrist abcess, 36-year-old HIV+ man with a history of IV drug use	Epidermal Disease Research
BAA-1718DQ™	Staphylococcus aureus subsp. aureus	From a 12-year-old white female with a buttock abscess; Texas Children's Hospital	Epidermal Disease Research
12228DQ™	Staphylococcus epidermidis		Epidermal Disease Research
700294DQ™	Streptococcus pyogenes	Infected wound	Epidermal Disease Research
204508DQ™	Saccharomyces cerevisiae	Wild type strain	Molecular Research
¥3037DQ™	Tannerella forsythia	Human periodontal pocket, Massachusetts, US	Periodontal Disease Research
/R <b>-</b> 1558DQ™	Betacoronavirus 1	Man with cold-like illness	Respiratory Disease Research
9797DQ™	Bordetella pertussis		Respiratory Disease Research
BAA-589DQ™	Bordetella pertussis	Human clinical specimen	Respiratory Disease Research
51907DQ™	Haemophilus influenaze		Respiratory Disease Research
/R <b>-</b> 740DQ™	Human coronavirus 229E	Nasal and throat swabs from a man with mild upper respiratory illness	Respiratory Disease Research
√R <b>-</b> 1540DQ™	Human respiratory syncytial virus	Lower respiratory tract of infant with bronchiolitis and bronchopneumonia, Melborne, Australia, 1961	Respiratory Disease Research
VR-1663DQ™	Human rhinovirus 17	Presumed from throat swab from adult with upper respiratory illness, North Carolina, 1959	Respiratory Disease Research
√R-1187DQ™	Human rhinovirus 77		Respiratory Disease Research
/R-95DQ™	Influenza A virus (H1N1)	Patient in Puerto Rico, 1934	Respiratory Disease Research
/R <b>-</b> 1882DQ™	Influenza A virus (H3N2)	Human in Wisconsin, USA, on June 7, 2009	Respiratory Disease Research
/R-1804DQ™	Influenza B virus	Human, Florida, 2006	Respiratory Disease Research
/R-1885DQ™	Influenza B virus	Classical reassortant virus derived from B/ Wisconsin/1/2010 (Yamagata Lineage) and B/Lee/1940	Respiratory Disease Research
700721DQ™	Klebsiella pneumoniae subsp. pneumoniae	Sputum from a 66 year-old man, 1994	Respiratory Disease Research
33152DQ™	Legionella pneumophila subsp. pneumophila	Human lung	Respiratory Disease Research
25420DQ™	Mycobacterium africanum	Expectorate; senegalese with pulmonary tuberculosis	Respiratory Disease Research
35734D™	Mycobacterium bovis	Bovine milk	Respiratory Disease Research
BAA-1052DQ™	Mycobacterium talmoniae	Clinical human specimen, July 31, 2000	Respiratory Disease Research
L9422DQ™	Mycobacterium microti		Respiratory Disease Research
BAA-688DQ™	Mycobacterium pinnipedii	Clinical animal specimen, Australia, 1986	Respiratory Disease Research
25177DQ™	Mycobacterium tuberculosis		Respiratory Disease Research
25618DQ™	Mycobacterium tuberculosis	Derived from existing strain; New York, 1934	Respiratory Disease Research
700669DQ™	Streptococcus pneumoniae	Hospital, Barcelona, Spain, 1984	Respiratory Disease Research
√R-901BD™	Chlamydia trachomatis LGV Serovar I	Lymph node from human with LGV	Sexually Transmitted Infection Resea

## **Quantitative Genomic Nucleic Acids**

ATCC® No.	Organism	Source Information	Research Applications
VR-903D™	Chlamydia trachomatis LGV Serovar III	Lymph node from human with LGV	Sexually Transmitted Infection Research
VR-902BD™	Chlamydia trachomatis LGV Serovar II	Bubo from human with LGV	Sexually Transmitted Infection Research
VR-539DQ™	Human Herpesvirus 1	Brain, human, encephalitis	Sexually Transmitted Infection Research
VR-540DQ™	Human Herpesvirus 2	Brain of a 50 year old female with multiple sclerosis; Iceland, 1961	Sexually Transmitted Infection Research
700825DQ™	Neisseria gonorrhoeae	Male patient with disseminated gonococcal infection; 1983	Sexually Transmitted Infection Research
3530DQ™	Mycoplasma genitalium	Urethra of male with non-gonococcal urethritis	Sexually Transmitted Infection Research
23114DQ™	Mycoplasma hominis	Rectal swab	Sexually Transmitted Infection Research
PRA-398DQ™	Babesia microti	Blood, human babesiosis, Nantucket, MA, 1983	Vector-borne Disease Research
35210DQ™	Borrelia burgdorferi	Tick, Ixodes dammini; New York	Vector-borne Disease Research
PRA-405D™	Plasmodium falciparum		Vector-borne Disease Research
VR-1838DQ™	Zika virus	Blood of a rhesus monkey that became infected while stationed as a sentinel in forest near Entebbe, Uganda, 1947	Vector-borne Disease Research
VR-1843DQ™	Zika virus	Human serum specimen, Puerto Rico, December 2015	Vector-borne Disease Research
30174D™	Naegleria fowleri	Human spinal fluid; Orlando, FL, 1968	Water Contamination
BAA-55DQ™	Atopobium vaginae	Vaginal flora from a healthy woman, Sweden, 1998	Women's Health
5243DQ™	Mobiluncus mulieris	Human vagina	Women's Health



### **Custom services**

ATCC offers custom small-scale extractions of nucleic acids from ATCC cell lines and microorganisms that are ideal for PCR, cloning, or other molecular applications. Or, if your research and applications require larger quantities, or novel packaging options, we can do that, too! Contact us at ATCCBioservices@atcc.org for more information!

# CERTIFIED REFERENCE MATERIALS

ATCC Certified Reference Materials (CRMs) are quantified and produced under an ISO Guide 34:2009 accredited process to confirm identity, well-defined characteristics, and an established chain of custody. These tools are ideal for:

- Establishing assay specificity and sensitivity
- Validating or comparing test methods
- Testing and calibration in ISO/IEC 17025:2005 accredited labs

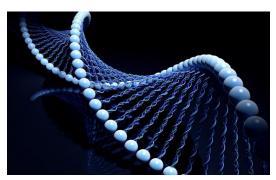
CRMs offer the highest level of quality assurance, accuracy, and traceability, providing you with complete confidence that your results are reliable and reproducible.

ATCC® No.	Organism	Source Information
qCRM-15531D™	Mycoplasma pneumoniae	Isolated by Hayflick from monkey kidney tissue-culture fluids of the FH strain (Eaton Agent Virus) supplied by C. Liu, who recovered this strain in embryonated eggs from a student with atypical pneumonia
qCRM-17981D™	Mycoplasma hyorhinis	Nasal cavity of pig
qCRM-19610D™	Mycoplasma gallisepticum	Suspension of tracheal and airsac tissues of chickens with chronic respiratory disease
qCRM-19989D™	Mycoplasma fermentans	Ulcerative balanitis
qCRM-23064D™	Mycoplasma salivarium	Saliva
qCRM-23206D™	Acholeplasma laidlawii	Sewage
qCRM-23714D™	Mycoplasma orale	Oropharynx of child, Washington, DC
qCRM-23838D™	Mycoplasma arginine	Mouse brain experimentally infected with scrapies
qCRM-25204D™	Mycoplasma synoviae	Hock joint of chicken
qCRM-27545D™	Mycoplasma hominis	Human blood culture









# Visit us at www.atcc.org/GenuineNucleics to find additional nucleic acid preparations for your research

© 2019 American Type Culture Collection. The ATCC trademark and trade name, and any other trademarks listed in this publication are trademarks owned by the American Type Culture Collection unless indicated otherwise. Droplet Digital<sup>114</sup> is a trademark of Bio-Rad Laboratories, Inc. PicoGreen<sup>®</sup> and RiboGreen<sup>®</sup> are registered trademarks of Invitrogen. Taqman<sup>®</sup> is a registered trademark of Roche Molecular Systems, Inc. The Polymerase Chain Reaction (PCR) process is covered by patents owned by Hoffmann-La Roche, Inc. Use of the PCR process requires a license. DNAstable® and RNAstable® are registered trademarks of BioMātrica. Stabilized by Biomātrica the Biostability Company. Image of Escherichia coli courtesy of David Gregory and Debbie Marshall.

These products are for laboratory use only. Not for human or diagnostic use. ATCC products may not be resold, modified for resale, used to provide commercial services or to manufacture commercial products without prior ATCC written approval.

Tel 800.638.6597

703.365.2700

Fax 703.365.2750 **Email** salesrep@atcc.org

Web www.atcc.org

